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APPLICATION NOTICE

< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL

APPLICATION NOTICE

How to Check Vehicle Type

Check the vehicle type (refer to GI-23, "Model Variation") to confirm the service information in BR section.

Service information	Vehicle type
TYPE 1	Early production
TYPE 2	Late production

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PRECAUTIONS

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PRECAUTIONS

Precaution for Technicians Using Medical Electric

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OPERATION PROHIBITION

WARNING:

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

NORMAL CHARGE PRECAUTION

WARNING:

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by PDM (Power Delivery Module) at normal charge operation may affect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not approach motor room [PDM (Power Delivery Module)] at the hood-opened condition during normal charge operation.

PRECAUTION AT TELEMATICS SYSTEM OPERATION

WARNING:

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

WARNING:

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.

Point to Be Checked Before Starting Maintenance Work

The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work. NOTE:

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" INFOID:0000000009254114

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS

PRECAUTIONS

< PRECAUTION >

system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal
 injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag
 Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

Precaution for Removing 12V Battery

Check that EVSE is not connected.

NOTE:

If EVSE is connected, the air conditioning system may be automatically activated by the timer A/C function.

- 2. Turn the power switch OFF \rightarrow ON \rightarrow OFF. Get out of the vehicle. Close all doors (including back door).
- 3. Check that the charge status indicator lamp does not blink and wait for 5 minutes or more.

NOTE:

If the battery is removed within 5 minutes after the power switch is turned OFF, plural DTCs may be detected.

Remove 12V battery within 1 hour after turning the power switch OFF → ON → OFF.

NOTE

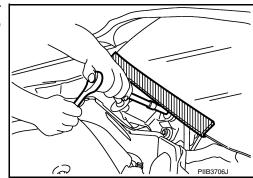
- The 12V battery automatic charge control may start automatically even when the power switch is in OFF state.
- Once the power switch is turned ON → OFF, the 12V battery automatic charge control does not start for approximately 1 hour.

CAUTION:

- After all doors (including back door) are closed, if a door (including back door) is opened before battery terminals are disconnected, start over from Step 1.
- After turning the power switch OFF, if "Remote A/C" is activated by user operation, stop the air conditioner and start over from Step 1.

Precaution for Procedure without Cowl Top Cover

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



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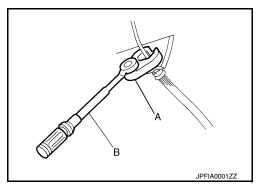
Precaution for Brake System

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WARNING:

Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

- Brake fluid use refer to MA-12, "Fluids and Lubricants".
- Never reuse drained brake fluid.
- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it off immediately and wash with water if it gets on a painted surface. For brake component parts, never wash them with water.
- Always confirm the specified tightening torque when installing the brake pipes.
- After pressing the brake pedal more deeply or harder than normal driving, such as air bleeding, check each item of brake pedal. Adjust brake pedal if it is outside the standard value.
- Always clean with new brake fluid when cleaning the brake caliper and other components.
- Never use mineral oils such as gasoline or light oil to clean. They may damage rubber parts and cause improper operation.
- Always loosen the brake tube flare nut with a flare nut wrench.
- Tighten the brake tube flare nut to the specified torque with a crowfoot (A) and torque wrench (B).
- Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Disconnect the ABS actuator and electric unit (control unit) harness connector or the 12V battery negative terminal before performing the work.Refer to BR-7, "Precaution for Removing 12V Battery".



CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Check that no brake fluid leakage is present after replacing the parts.
- Burnish the brake contact surfaces after refinishing or replacing rotors, after replacing pads, or if a soft pedal occurs at very low mileage.
- Front brake pad: Refer to BR-519, "BRAKE PAD: Inspection and Adjustment".
- Front disc rotor: Refer to BR-519, "DISC ROTOR: Inspection and Adjustment".
- Rear brake pad: Refer to BR-521, "BRAKE PAD: Inspection and Adjustment".
- Rear disc rotor: Refer to BR-521, "DISC ROTOR: Inspection and Adjustment".
- When the brake pedal is operated, an operating sound may be heard from the electrically-driven intelligent brake unit. This occurs when the electrically-driven intelligent brake unit is operating sound and is not a malfunction
- When the brake pedal is depressed when the EV system is not started, the brake pedal will feel heavy and the stroke will be shorter. When the unfamiliar feeling disappears and the brake warning lamp is OFF after the brake pedal was depressed, then this is not a malfunction. When the brake warning lamp is ON, use CONSULT and perform the "BRAKE" self diagnosis.
- When there is a malfunction in the power system of the electrically-driven intelligent brake unit (no voltage is generated), voltage is temporarily supplied to the electrically-driven intelligent brake unit from the brake power supply backup unit. At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON, and the warning buzzer sounds.
- When a malfunction occurs in the electrically-driven intelligent brake unit, the VDC function performs control (boost operation).
- When a malfunction occurs in the PDM (Power Delivery Module) and 12V battery, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, the brake warning lamp (red) and the brake system warning lamp (yellow) turns ON.
- When a malfunction occurs in the electrically-driven intelligent brake and in the VDC function, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the electrically-driven intelligent brake, VDC function, and power system, then cooperative regenerative brake control is not performed.
- When a malfunction occurs in the brake power supply backup unit, the brake system warning lamp (yellow) turns ON.

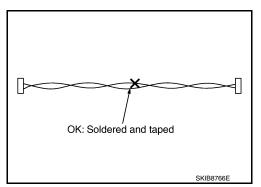
PRECAUTIONS

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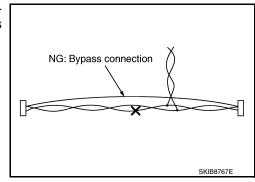
Precaution for Harness Repair

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• Solder the repair part, and wrap it with tape. [Twisted wire fray must be 110 mm (4.33 in) or less.]



 Never bypass the repair point with wire. (If it is bypassed, the turnout point cannot be separated and the twisted wire characteristics are lost.)



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PREPARATION

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Commercial Service Tools

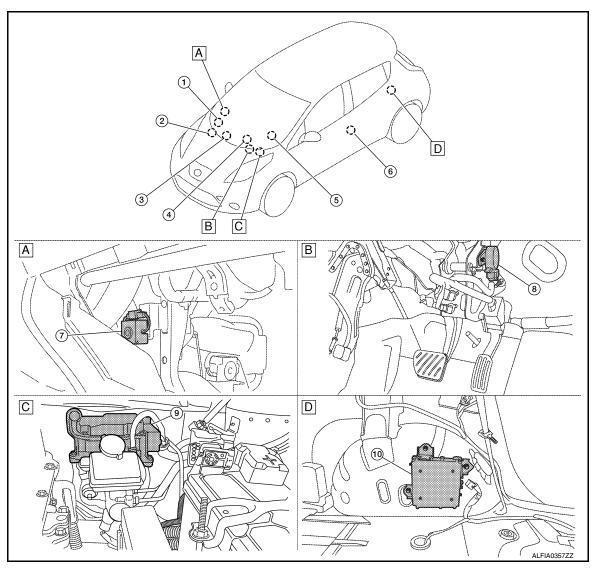
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Tool name		Description
Power tool		Loosening nuts, screws and bolts
	PIIB1407E	
Brake caliper wrench		Return the piston
	NNFIA0040ZZ	

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location



- ∀iew with the glove box assembly re B Brake pedal moved
- ☐ Inside luggage side lower finisher LH

☐ Inside motor room (left)

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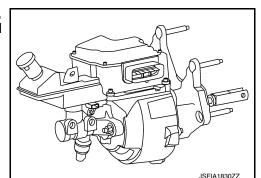
No.	Component parts	Function
1	VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal Refer to EVC-16, "Component Parts Location" for detailed installation location.
2	ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Rear RH wheel speed signal Yaw rate signal VDC malfunction signal VDC off switch signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication. Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation signal Brake warning lamp request signal Brake system warning lamp request signal Brake to BRC-10, "Component Parts Location" for detailed installation location.
3	ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal Mainly transmits the following signals to electrically-driven intelligent brake unit. (Type 2 models) • Door switch signal Refer to BCS-5, "BODY CONTROL SYSTEM: Component Parts Location" for detailed installation location.
4	Combination meter (brake warning lamp, brake system warning lamp)	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal Refer to MWI-6 , "METER SYSTEM: Component Parts Location" for detailed installation location.
(5)	Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal Refer to BRC-10, "Component Parts Location" for detailed installation location.
6	Front door switch (driver side)*	BR-14, "Front Door Switch (Driver side)"
7	Warning buzzer	BR-14. "Warning Buzzer"
8	Stroke sensor	BR-14, "Stroke Sensor"
9	Electrically-driven intelligent brake unit	BR-13, "Electrically-driven Intelligent Brake Unit"
		BR-14, "Brake Power Supply Backup Unit"

^{*:} Applied to Type 1 models

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Electrically-driven Intelligent Brake Unit

Integrates the control module, master cylinder, and brake booster, and it controls the fluid pressure that is sent to the ABS actuator and electric unit (control unit).



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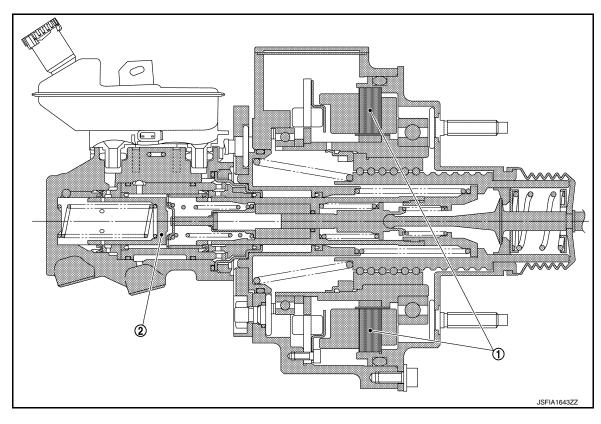
CONTROL MODULE

- Controls the fluid pressure that is applied to the brake calipers, based on the signals from each sensor and unit.
- · Performs cooperative regenerative brake control.
- When a malfunction is detected, the system enters fail-safe mode.

MASTER CYLINDER

- · Generates brake fluid pressure according to the amount of piston movement.
- The fluid pressure generated by the master cylinder is sent to the ABS actuator and electric unit (control unit).

BRAKE BOOSTER



- ① Motor ② Piston
- Contains a motor and generates boost force according to the amount that the brake pedal is depressed and the amount of cooperative regenerative brake control.
- Uses the boost force to generate fluid pressure in the master cylinder.

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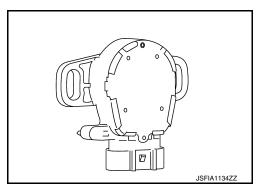
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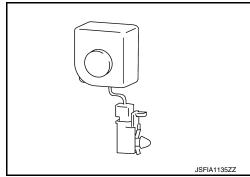
Stroke Sensor

Detects the amount that the brake pedal is depressed and sends it to the electrically-driven intelligent brake unit.



Warning Buzzer

The warning buzzer operates based on the signal from the electrically-driven intelligent brake unit to notify the driver of the change in power supply circuits.



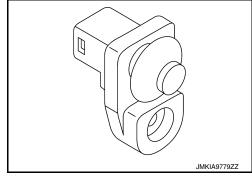
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Front Door Switch (Driver side)

Detects the amount that the front door switch (driver LH side) is operated and sends it to the electrically-driven intelligent brake unit. **NOTE:**

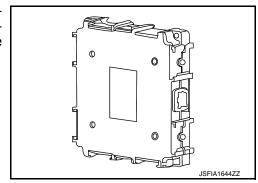
Front door switch is applied to type 1 models.



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Brake Power Supply Backup Unit

When there is a malfunction in the power system of the electrically-driven intelligent brake unit (no voltage is generated), this unit temporarily supplies voltage to the electrically-driven intelligent brake unit.



SYSTEM

System Description

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- An electrically-driven intelligent brake is a booster system that generates assist force by using an internal motor to operate a piston inside the master cylinder.
- Control module is integrated with electrically-driven intelligent brake unit.
- When the brake pedal is depressed during driving, cooperative control of the braking force from the friction brake (regular brake) and the regenerative brake from the traction motor is used.
- The system performs cooperative control of the regenerative brake and friction brake (same brake as in conventional vehicles) and enables highly efficient energy recovery.
- The fluid pressure which is applied to each brake caliper is controlled according to the amount of traction motor regeneration.
- The amount of brake pedal operation is detected by the stroke sensor, and sent to the control module of the electrically-driven intelligent brake unit.
- Based on the commands from the control module of the electrically-driven intelligent brake unit, the motor inside the electrically-driven intelligent brake unit operates and presses the master cylinder piston.
- Pressing the master cylinder piston, and brake fluid is sent to the ABS actuator and electric unit (control
 unit).
- CONSULT can be used to diagnose the system diagnosis.
- When there is a malfunction in the power system of the electrically-driven intelligent brake unit (no voltage is generated), voltage is temporarily supplied to the electrically-driven intelligent brake unit from the brake power supply backup unit. At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON, and the warning buzzer sounds.
- When a malfunction occurs in the electrically-driven intelligent brake unit, the VDC function performs control (boost operation). At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the PDM (Power Delivery Module) and 12V battery, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, the brake warning lamp (red) and the brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the brake power supply backup unit, the brake system warning lamp (yellow) turn ON
- When a malfunction occurs in the electrically-driven intelligent brake and in the VDC function, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the electrically-driven intelligent brake, the VDC function, and the power system, then cooperative regenerative brake control is not performed.
- A fail-safe function is available and is activated when a system malfunction occurs. Refer to <u>BR-19</u>, "Fail-<u>Safe"</u>.

SYSTEM DIAGRAM (TYPE 1)

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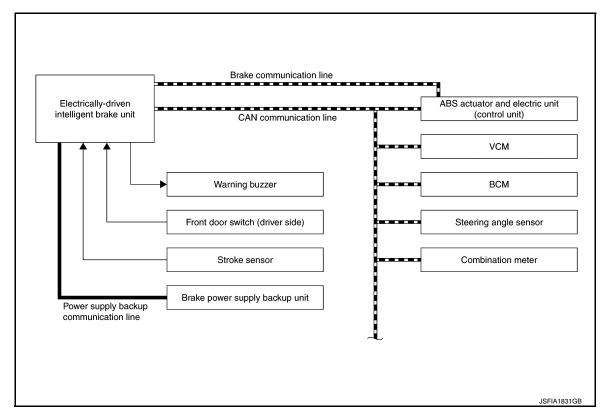
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INPUT SIGNAL AND OUTPUT SIGNAL (TYPE 1)

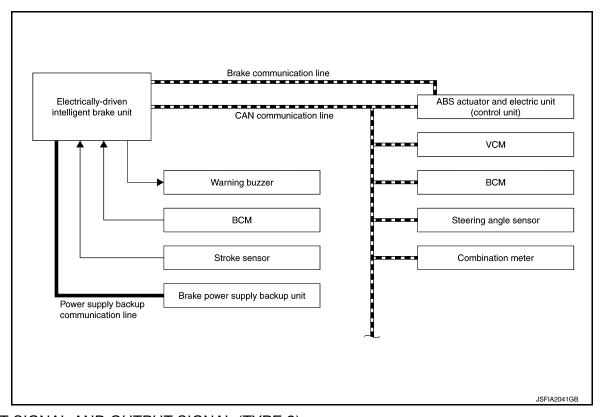
Major signal transmission between each unit via communication lines is shown in the following table.

Component	Signal description		
ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Rear RH wheel speed signal Yaw rate signal VDC malfunction signal VDC off switch signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation signal Brake warning lamp request signal Brake system warning lamp request signal		
VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal		

< SYSTEM DESCRIPTION >

Component	Signal description
ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal
Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal
Combination meter	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal

SYSTEM DIAGRAM (TYPE 2)



INPUT SIGNAL AND OUTPUT SIGNAL (TYPE 2)

Major signal transmission between each unit via communication lines is shown in the following table.

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Component	Signal description		
ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Rear RH wheel speed signal Yaw rate signal VDC malfunction signal VDC off switch signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation request signal Brake warning lamp request signal Brake system warning lamp request signal		
VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal		
ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal Mainly transmits the following signals to electrically-driven intelligent brake unit. • Door switch signal		
Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal		
Combination meter	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal		

CONDITION FOR OPERATION OF THE WARNING LAMP AND THE WARNING BUZZER Turns ON when power switch turns ON and turns OFF when the system is normal, for bulb check.

Condition (status)	Brake warning lamp (red)	Brake system warn- ing lamp (yellow)	Warning buzzer
Power switch OFF	OFF	OFF	OFF
For several seconds after the power switch is ON	ON	ON	OFF
Several seconds after power switch ON (when the system is in normal operation)	OFF	OFF	OFF
When the power supply of the electrically-driven intelligent brake is changed to the brake power supply backup unit	ON	ON	ON
Brake power supply backup unit is malfunctioning	OFF	ON	OFF

Condition (status)	Brake warning lamp (red)	Brake system warn- ing lamp (yellow)	Warning buzzer
Electrically-driven intelligent brake is malfunctioning	ON	ON	OFF
When brake fluid is less than the specified level (brake fluid level switch ON)	ON	OFF	OFF

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Fail-Safe

- When there is a malfunction in the power system of the electrically-driven intelligent brake unit (no voltage is generated), voltage is temporarily supplied to the electrically-driven intelligent brake unit from the brake power supply backup unit. At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON and the buzzer sounds.
- When a malfunction occurs in the electrically-driven intelligent brake unit, the VDC function performs control (boost operation).
- When a malfunction occurs in the PDM (Power Delivery Module) and 12V battery, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, brake warning lamp (red) and the brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the brake power supply backup unit, the brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the electrically-driven intelligent brake and in the VDC function, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON.
- When a malfunction occurs in the electrically-driven intelligent brake, VDC function, and power system, cooperative regenerative brake control is not performed.

DTC	Vehicle condition	
C1A60	The following functions are suspended.	
C1A61	Boost operation by the electrically-driven intelligent brake Cooperative regenerative brake control	
C1A62	Power supply from the brake power supply backup unit	
C1A63	The following function is suspended. • Power supply from the brake power supply backup unit	
C1A65	The following functions are suspended. • Boost operation by the electrically-driven intelligent brake • Cooperative regenerative brake control • Power supply from the brake power supply backup unit	
C1A67	Normal control	
C1A69	The following functions are suspended. • Boost operation by the electrically-driven intelligent brake • Cooperative regenerative brake control • Power supply from the brake power supply backup unit	
C1A6B		
C1A6C	The following function is suspended. • Backup power supply from the brake power supply backup unit	
C1A6D	Sackup power supply from the brake power supply backup unit	
C1A6E	The following function is suspended. • Cooperative regenerative brake control • hill start assist function	
C1A6F	The following function is suspended. • hill start assist function	
C1A70	The following function is suspended.	
C1A74	Cooperative regenerative brake control hill start assist function	

DTC	Vehicle condition	
C1A80		
C1A81		
C1A82		
C1A83		
C1A84		
C1A85	The following functions are suspended.	
C1A86	Boost operation by the electrically-driven intelligent brake Cooperative regenerative brake control	
C1A87	Power supply from the brake power supply backup unit	
C1A88		
C1A89		
C1A8A		
C1A8B		
C1A90		
C1A91	The following function is suspended. • Cooperative regenerative brake control • hill start assist function	
C1A98		
C1A99	The following function is suspended. • Power supply from the brake power supply backup unit	
C1A9A	- Power supply from the brake power supply backup unit	
C1AA0		
C1AA1	 The following functions are suspended. Boost operation by the electrically-driven intelligent brake 	
C1AA2	Cooperative regenerative brake control	
C1AA3	Power supply from the brake power supply backup unit	
C1AA9	The following function is suspended.	
C1AB8	Cooperative regenerative brake control hill start assist function	
C1AB9	The following functions are suspended.	
C1ABA	Boost operation by the electrically-driven intelligent brake Cooperative regenerative brake control Power supply from the brake power supply backup unit	
C1AC0	The following function is suspended. • Cooperative regenerative brake control	
C1AC1	The following functions are suspended. • Boost operation by the electrically-driven intelligent brake	
C1AC8	Normal control	
C1AD0	- Normal Control	
U1000	The following function is suspended.	
U1010	Cooperative regenerative brake control	
U1510	hill start assist function	
U1511	The following functions are suspended. • Power supply from the brake power supply backup unit	

COOPERATIVE REGENERATIVE BRAKE FUNCTION

COOPERATIVE REGENERATIVE BRAKE FUNCTION : System Description

INFOID:0000000009246262

COOPERATIVE REGENERATIVE BRAKE CONTROL

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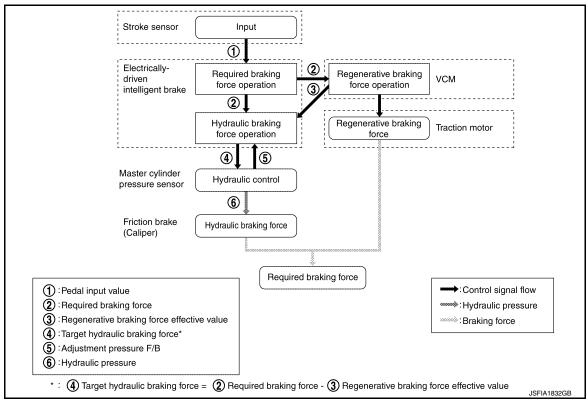
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- A regenerative brake drives the traction motor to act as an alternator, and converts the kinetic energy produced by rotation of the tires into electrical energy. The converted electrical energy charges the Li-ion battery.
- When the brakes are operated (during driving), the electrically-driven intelligent brake unit calculates the
 required braking force based on the input value from the stroke sensor (indicating the amount of brake pedal
 operation), and it sends the result to the VCM. At the same time, it calculates the hydraulic braking force
 needed to produce the required braking force.
- The VCM calculates the regenerative braking force needed to produce the required braking force, and sends
 the result to the electrically-driven intelligent brake unit. At the same time, the traction motor inverter uses
 the traction motor to perform regenerative braking.
- The electrically-driven intelligent brake unit calculates the hydraulic braking force again based on the regenerative braking force result from the VCM and the calculated result for hydraulic braking force.
- Based on the calculated result for hydraulic braking force, the electrically-driven intelligent brake unit uses the motor inside the electrically-driven intelligent brake unit to move the master cylinder piston, adjusting the fluid pressure inside the master cylinder to the master fluid pressure. It also performs adjustment so that the fluid pressure that is actually applied matches the target fluid pressure.

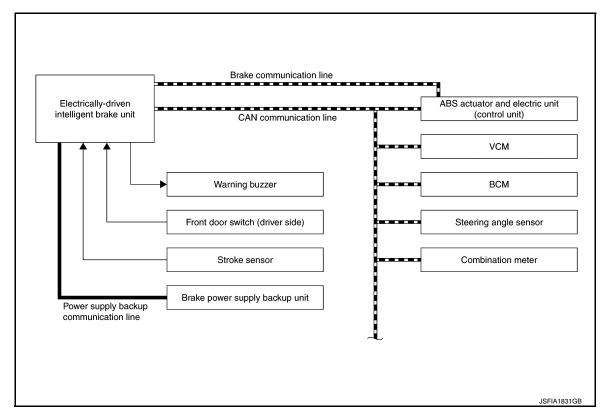
NOTE:

The fluid pressure applied to the master cylinder is detected by master cylinder pressure sensor and transmits the electrically-driven intelligent brake unit from ABS actuator and electric unit (control unit) via brake communication (CAN communication).

- The fluid pressure generated by the master cylinder is sent to each brake caliper via the ABS actuator and electric unit (control unit).
- When the cooperative regenerative brake is operating, the motor inside the electrically-driven intelligent brake unit moves the master cylinder piston according to the amount of regeneration.
- Moving the master cylinder piston increases the fluid pressure applied to the ABS actuator and electric unit (control unit). (The brake pedal stroke does not change.)
- When brake control is stopped (immediately before vehicle stop or while vehicle is stopped), cooperative regenerative brake control is not performed.

SYSTEM DIAGRAM (TYPE 1)

Revision: October 2013 BR-21 2013 LEAF



INPUT SIGNAL AND OUTPUT SIGNAL (TYPE 1)

Major signal transmission between each unit via communication lines is shown in the following table.

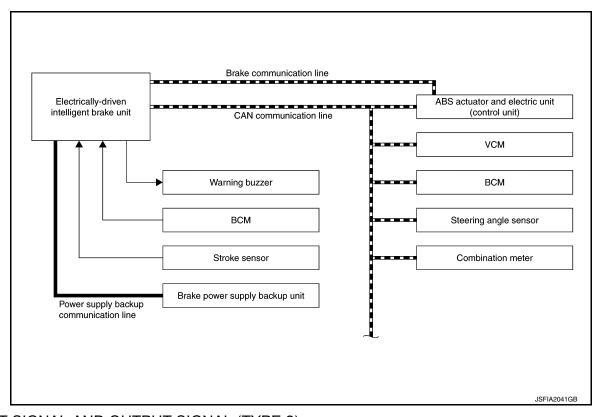
Component	Signal description
ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Front RH wheel speed signal Rear RH wheel speed signal VDC malfunction signal VDC malfunction signal VDC OFF switch signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation signal Brake power supply backup operation request signal Brake warning lamp request signal Brake system warning lamp request signal
VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal

SYSTEM

< SYSTEM DESCRIPTION >

Component	Signal description
ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal
Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal
Combination meter	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal

SYSTEM DIAGRAM (TYPE 2)



INPUT SIGNAL AND OUTPUT SIGNAL (TYPE 2)

Major signal transmission between each unit via communication lines is shown in the following table.

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Component	Signal description
ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Front RH wheel speed signal Rear RH wheel speed signal VDC malfunction signal VDC malfunction signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation signal Brake power supply backup operation request signal Brake warning lamp request signal Brake system warning lamp request signal
VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal
ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal Mainly transmits the following signals to electrically-driven intelligent brake unit. • Door switch signal
Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal
Combination meter	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal

OPERATION

During Normal Braking

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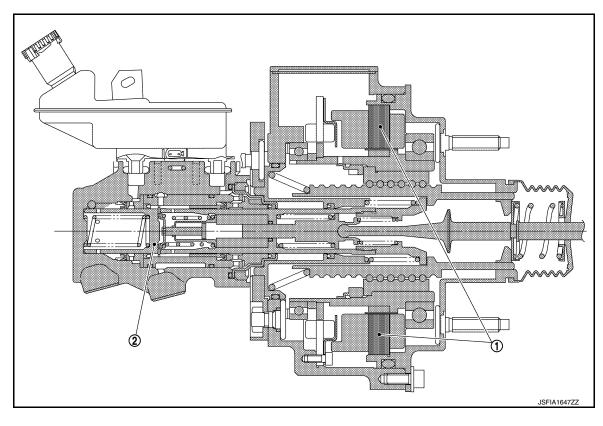
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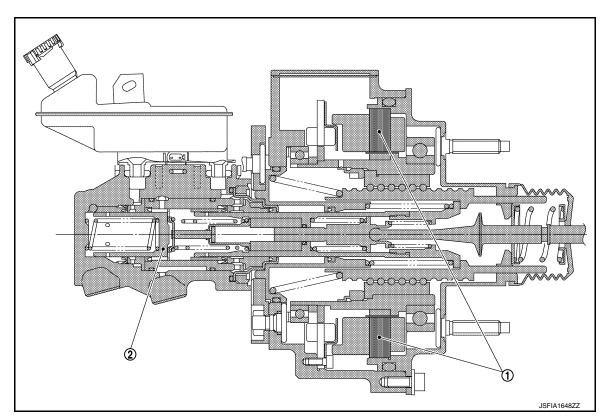
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① Motor ② Piston

The stroke sensor detects the brake pedal stroke, and the motor inside the electrically-driven intelligent brake unit presses the master cylinder piston, generating boost operation (brake pedal assist force) and increasing the fluid pressure.

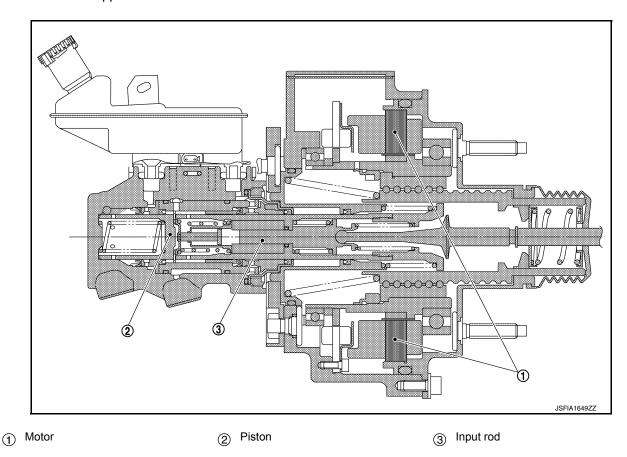
When Cooperative Regenerative Brake Control Is Operating



① Piston

When the amount of regenerative braking increases, the motor inside the electrically-driven intelligent brake unit returns the master cylinder piston, lowering the fluid pressure. While the vehicle is stopped, because the amount of regenerative braking decreases, the motor inside the electrically-driven intelligent brake unit presses the master cylinder piston, increasing the fluid pressure.

When Control Is Stopped



The input rod crosses the cooperative regenerative brake control gap and contacts the master cylinder piston, generating fluid pressure. There is no boost force (assist force), and the braking force is determined by the force pressing on the brake pedal.

hill start assist FUNCTION

hill start assist FUNCTION: System Description

INFOID:0000000009246263

- This function maintains brake fluid pressure so that the vehicle does not move backwards even if brake pedal is released to depress accelerator pedal to start the vehicle while it is stopped on an uphill slope by depressing brake pedal.
- This function operates when the vehicle is in stop status on a uphill slope of slope ratio 10% or more and selector lever is in the position other than P or N.
- hill start assist function is only for the start aid. It maintains the brake fluid pressure for approx. 2 seconds
 after releasing the brake pedal, and then decreases the pressure gradually. If the vehicle can start by the
 accelerator operation, the brake is released automatically and a smooth start can be performed.
- Fail-safe function is adopted. When a malfunction occurs in hill start assist function, the control is suspended
 for hill start assist function. The vehicle status becomes the same as models without hill start assist function.
 Refer to BR-19, "Fail-Safe".

SYSTEM DIAGRAM (TYPE 1)

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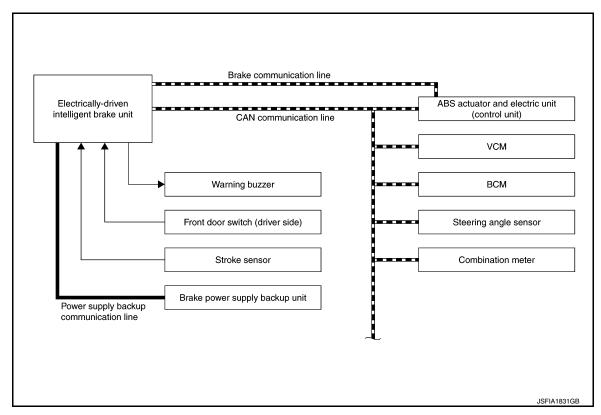
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INPUT SIGNAL AND OUTPUT SIGNAL (TYPE 1)

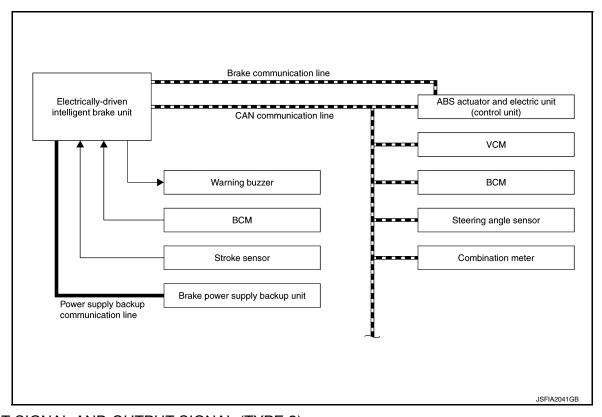
Major signal transmission between each unit via communication lines is shown in the following table.

Component	Signal description
ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Rear RH wheel speed signal Vaw rate signal VDC malfunction signal VDC off switch signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation request signal Brake warning lamp request signal Brake system warning lamp request signal
VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal

< SYSTEM DESCRIPTION >

Component	Signal description
ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal
Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal
Combination meter	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal

SYSTEM DIAGRAM (TYPE 2)



INPUT SIGNAL AND OUTPUT SIGNAL (TYPE 2)

Major signal transmission between each unit via communication lines is shown in the following table.

Component	Signal description
ABS actuator and electric unit (control unit)	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). ABS actuator and electric unit (control unit) control signal Vehicle speed signal (ABS) Decel G signal Front LH wheel speed signal Rear LH wheel speed signal Front RH wheel speed signal Rear RH wheel speed signal Yaw rate signal VDC malfunction signal VDC malfunction signal VDC OFF switch signal Mainly receives the following signals from electrically-driven intelligent brake unit via CAN communication and brake communication (CAN communication). Electrically-driven intelligent brake control signal Brake assist request signal Brake power supply backup operation signal Brake power supply backup operation request signal Brake warning lamp request signal Brake system warning lamp request signal
VCM	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • VCM control signal • Current regenerative torque signal • VCM status signal • Shift position signal Mainly receives the following signal from electrically-driven intelligent brake unit via CAN communication. • Target braking force signal
ВСМ	Mainly transmits the following signals to electrically-driven intelligent brake unit via CAN communication. • Sleep wake up signal • Power switch ON signal Mainly transmits the following signals to electrically-driven intelligent brake unit. • Door switch signal
Steering angle sensor	Mainly transmits the following signal to electrically-driven intelligent brake unit via CAN communication. • Steering angle sensor signal
Combination meter	Mainly receives the following signals from ABS actuator electric unit (control unit) via electrically-driven intelligent brake unit via CAN communication. Brake warning lamp signal Brake system warning lamp signal

WARNING/INDICATOR/CHIME LIST

WARNING/INDICATOR/CHIME LIST : Warning Lamp/Indicator Lamp

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FOR U.S.A.

Name	Design	Layout/Function
Brake system warning lamp (yellow)		For layout: Refer to MWI-8, "METER SYSTEM: System Description".
	BRAKE	For function: Refer to BR-30, "WARNING/INDICATOR/CHIME LIST: Brake System Warning Lamp (Yellow)".
Brake warning lamp (red)		For layout: Refer to MWI-8, "METER SYSTEM: System Description".
	BRAKE	For function: Refer to BR-32, "WARNING/INDICATOR/CHIME LIST: Brake Warning Lamp (Red)".

FOR CANADA

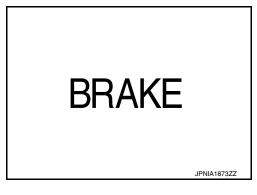
Name	Design	Layout/Function
Brake system warning lamp		For layout: Refer to MWI-8, "METER SYSTEM: System Description".
(yellow)	(<u>U</u>))	For function: Refer to BR-30, "WARNING/INDICATOR/CHIME LIST: Brake System Warning Lamp (Yellow)".
Brake warning lamp		For layout: Refer to MWI-8, "METER SYSTEM: System Description".
(red)	For function: Refer to BR-32, "WARNING/INDICATOR/CHIME LIST: Brake Warning Lamp (Red)".	

WARNING/INDICATOR/CHIME LIST: Brake System Warning Lamp (Yellow)

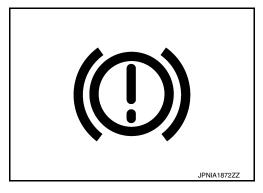
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DESIGN/PURPOSE

- The brake system warning lamp warns the driver of a malfunction in the electrically-driven intelligent brake unit or the brake power supply backup unit.
- For U.S.A.



- For Canada



• The brake system warning lamp warns the driver of malfunction in hill start assist function.

NOTE:

The brake system warning lamp may turn ON simultaneously with the brake warning lamp. For details, refer to <u>BR-15</u>, "System <u>Description"</u>.

BULB CHECK

Several seconds after power switch is turned ON

SYNCHRONIZATION WITH WARNING BUZZER

YES

For warning buzzer, refer to BR-14, "Warning Buzzer"

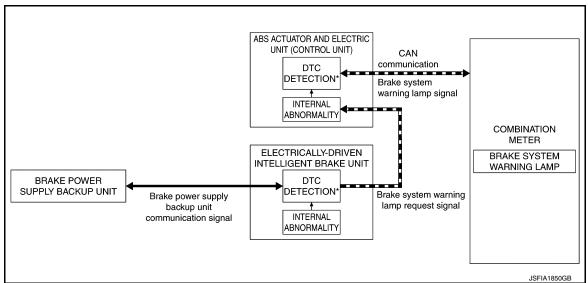
SYNCHRONIZATION WITH MASTER WARNING LAMP

Not applicable

OPERATION AT COMBINATION METER CAN COMMUNICATION CUT-OFF OR UNUSUAL SIGNAL

For actions on CAN communications blackout in the combination meter, refer to <u>MWI-15. "METER SYSTEM :</u> Fail-Safe".

SYSTEM DIAGRAM



*: For DTCs that the brake system warning lamp turns ON, refer to <u>BR-44, "DTC Index"</u> (electrically-driven intelligent brake unit) or <u>BRC-57, "DTC Index"</u> [ABS actuator and electric unit (control unit)].

SIGNAL PATH

- The electrically-driven intelligent brake unit transmits a brake system warning lamp request signal to the ABS actuator and electric unit (control unit) via CAN communication when detecting a malfunction in the electrically-driven intelligent brake unit.
- The ABS actuator and electric unit (control unit) receiving a brake system warning lamp request signal, and transmits a brake system warning lamp signal to the combination meter via CAN communication.
- The combination meter turns ON the brake system warning lamp when receiving a brake system warning lamp signal.
- For the relationship between warning lamp and DTC, refer to BR-44, "DTC Index".

LIGHTING CONDITION

When any of the condition listed below is satisfied while the power switch ON:

- A malfunction is detected in the electrically-driven intelligent brake unit or the brake power supply backup unit.
- · A malfunction is detected in the hill start assist function.
- For the relationship between warning lamp and DTC, refer to BR-44, "DTC Index".

SHUTOFF CONDITION

- When the condition listed below is satisfied while the power switch ON:
- Erase DTC
- · Power switch OFF

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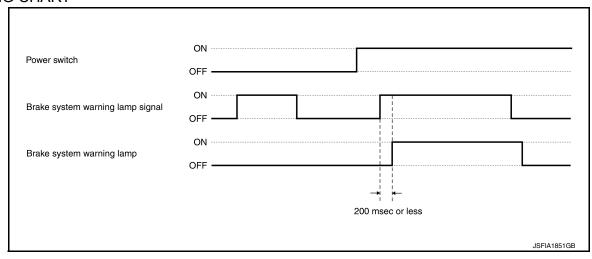
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TIMING CHART

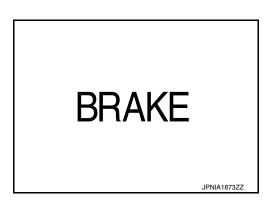


WARNING/INDICATOR/CHIME LIST: Brake Warning Lamp (Red)

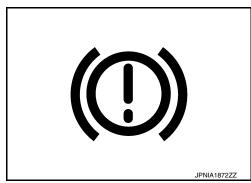
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DESIGN/PURPOSE

- The brake warning lamp warns the driver of brake fluid shortages.
- For U.S.A.



- For Canada



- The brake warning lamp warns the driver that the parking brake is engaged.
- The brake warning lamp warns the driver of a malfunction in the ABS actuator and electric unit (control unit).
- The brake warning lamp warns the driver of a malfunction in the electrically-driven intelligent brake unit.

NOTE:

The brake warning lamp may turn ON simultaneously with the ABS warning lamp, VDC warning lamp. For details, refer to <u>BRC-16</u>, "System <u>Description"</u> (ABS warning lamp, VDC warning lamp) and <u>BR-15</u>, "System <u>Description"</u> (brake system warning lamp).

BULB CHECK

Several seconds after power switch is turned ON

SYNCHRONIZATION WITH WARNING CHIME YES

< SYSTEM DESCRIPTION >

For warning chime, refer to WCS-11. "PARKING BRAKE RELEASE WARNING CHIME: Parking Brake Release Warning Chime"

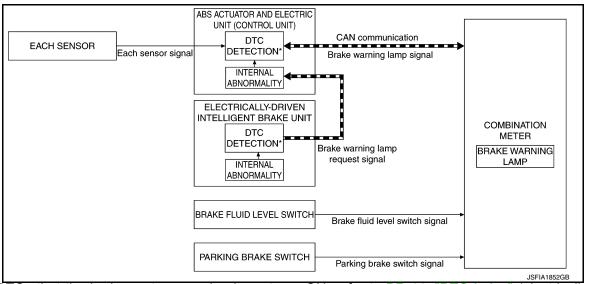
MASTER WARNING LAMP WITH WARNING CHIME

Not applicable

OPERATION AT COMBINATION METER CAN COMMUNICATION CUT-OFF OR UNUSUAL SIG-NAL

For actions on CAN communications blackout in the combination meter, refer to MWI-15, "METER SYSTEM: Fail-Safe".

SYSTEM DIAGRAM



*: For DTCs that the brake system warning lamp turns ON, refer to BR-44, "DTC Index" (electrically-driven intelligent brake unit) or BRC-57, "DTC Index" [ABS actuator and electric unit (control unit)].

SIGNAL PATH

When Brake Fluid Is Insufficient

The combination meter turns ON/OFF the brake warning lamp, according to the ON/OFF state of the brake fluid level switch.

When Operating The Parking Brake

The combination meter turns ON/OFF the brake warning lamp, according to the ON/OFF state of the parking brake switch.

When The EBD Function Is In Abnormal State

- The ABS actuator and electric unit (control unit) transmits a brake warning lamp signal to the combination meter via CAN communication when detecting a malfunction in the EBD function.
- The combination meter turns ON the brake warning lamp when receiving a brake warning lamp signal.
- For the relationship between warning lamp and DTC, refer to BRC-57, "DTC Index".

When The Electrically-driven Intelligent Brake Unit Is In Abnormal State

- · The electrically-driven intelligent brake unit transmits a brake warning lamp request signal to the ABS actuator and electric unit (control unit) via CAN communication when detecting a malfunction in the electricallydriven intelligent brake unit.
- The ABS actuator and electric unit (control unit) receiving a brake warning lamp request signal, and transmits a brake system warning lamp signal to the combination meter via CAN communication.
- The combination meter turns ON the brake system warning lamp when receiving a brake system warning lamp signal.
- For the relationship between warning lamp and DTC, refer to BR-44, "DTC Index".

LIGHTING CONDITION

When any of the condition listed below is satisfied while the power switch ON:

- Brake fluid level switch ON.
- Parking switch ON.

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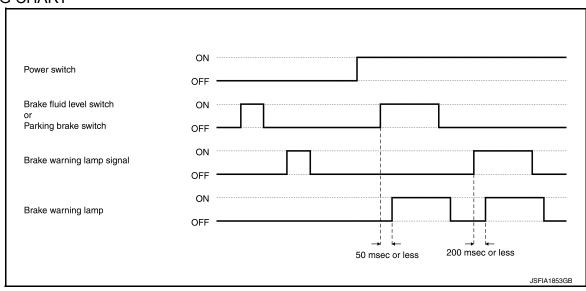
< SYSTEM DESCRIPTION >

- A malfunction is detected in the EBD function of the ABS actuator and electric unit (control unit).
- A malfunction is detected in the electrically-driven intelligent brake unit.
- For the relationship between warning lamp and DTC, refer to <u>BR-44, "DTC Index"</u> (electrically-driven intelligent brake unit) or <u>BRC-57, "DTC Index"</u> [ABS actuator and electric unit (control unit)].

SHUTOFF CONDITION

- When the condition listed below is satisfied while the power switch ON:
- Brake fluid level switch is OFF.
- Parking brake switch is OFF.
- Erase DTC
- · Power switch OFF

TIMING CHART



DIAGNOSIS SYSTEM (ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT)

CONSULT Function INFOID:0000000008746725

APPLICATION ITEM

CONSULT can display each diagnostic item using the diagnostic test modes as follows.

Mode	Function description
ECU identification	Parts number of electrically-driven intelligent brake unit can be read.
Self Diagnostic Results	Self-diagnostic results and freeze frame data can be read and erased quickly.*
DATA MONITOR	Input/Output data in the electrically-driven intelligent brake unit can be read.
Work Support	Components can be quickly and accurately adjusted.

^{*:} The following diagnosis information is erased by erasing.

CAUTION:

After erasing self-diagnosis results, turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Never operate the vehicle and CONSULT while waiting.

- DTC
- Freeze frame data (FFD)

ECU IDENTIFICATION

Electrically-driven intelligent brake unit part number can be read.

SELF DIAGNOSTIC RESULT

Refer to BR-44, "DTC Index".

When "CRNT" is displayed on self-diagnosis result

The system is presently malfunctioning.

When "PAST" is displayed on self-diagnosis result

System malfunction in the past is detected, but the system is presently normal.

Freeze frame data (FFD)

When DTC is detected, a vehicle state shown below is recorded and displayed on CONSULT.

Item name	Display item		
IGN counter (0 – 39)	 The number of times that power switch is ON after the DTC is detected is displayed. When "0" is displayed: It indicates that the system is presently malfunctioning. When except "0" is displayed: It indicates that system malfunction in the past is detected, but the system is presently normal. NOTE: Each time when power switch is turned OFF to ON, numerical number increases in 1 → 2 → 338 → 39. When the operation number of times exceeds 39, the number do not increase and "39" is displayed until self-diagnosis is erased. 		
PEDAL STROKE VALUE	Displays the brake pedal stroke at the time the malfunction is detected.		
MASTER CYL PRESSURE	Displays the brake fluid pressure generated in the master cylinder at the time the malfunction is detected.		
CONTROL MODULE TEMP	Displays the temperature of the control module that is integrated with the electrically-driven intelligent brake unit at the time the malfunction is detected.		
MOTOR POWER SUPPLY	Displays the power voltage of the motor inside the electrically-driven intelligent brake unit at the time the malfunction is detected.		
CONTROL MODULE POWER	Displays the power voltage of the control module that is integrated with the electrically-driven intelligent brake unit at the time the malfunction is detected.		
Q axis current	Displays the current at the motor inside the electrically-driven intelligent brake unit at the time the malfunction is detected.		
VEHICLE SPEED	Displays the vehicle speed at the time the malfunction is detected.		

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DIAGNOSIS SYSTEM (ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT)

< SYSTEM DESCRIPTION >

Item name	Display item		
DECEL G SENSOR	Displays the decel G at the time the malfunction is detected.		
ACTUAL GEAR POSITION	Displays the shift position at the time the malfunction is detected.		
MILEAGE	Displays the mileage at the time the malfunction is detected.		
SYSTEM OPERATING TIME (msec)	Time between the start of the electrically-driven intelligent brake unit and DTC detection is displayed by "msec".		
SYSTEM OPERATING TIME (min)	Time between the start of the electrically-driven intelligent brake unit and DTC detection is displayed by "min".		
BACKUP UNIT OUT VOLT	Displays the power voltage of the brake power supply backup unit at the time the malfunction is detected.		
WAKEUP SIGNAL STATUS	IGN ON	Displayed if the power switch is ON when DTC is detected.	
	IGN OFF	Displayed if the power switch is in a state other than ON when DTC is detected.	
	STOP LAMP SW ON	Displayed if the brake pedal is depressed when DTC is detected.	
	STOP LAMP SW OFF	Displayed if the brake pedal is not depressed when DTC is detected.	
	DOOR OPEN	Displayed if the driver's door is open when DTC is detected.	
	DOOR CLOSE	Displayed if the driver's door is close when DTC is detected.	
	SLEEP	Displayed if the electrically-driven intelligent brake unit is not active when DTC is detected.	
	WAKE UP	Displayed if the electrically-driven intelligent brake unit is active when DTC is detected.	
	READY ON	Displayed if the vehicle is in READY state when DTC is detected.	
	READY OFF	Displayed if the vehicle is in a state other than READY state when DTC is detected.	
	CAN COMM ON	Displayed if CAN communication is performed when DTC is detected.	
	CAN COMM OFF	Displayed if CAN communication is not performed when DTC is detected.	
IGNITION SIGNAL	Displays the status of ignition switch at the time a DTC is detected.		
STATUS STOP LAMP SW	Displays the status of brake pedal position at the time a DTC is detected.		
DOOR SWITCH	 Displays the status of driver's door at the time a DTC detected.*1 (Type 1) Displays the status of all doors (including back door) at the time a DTC is detected.*2 (Type 2) 		
COMMAND WAKE UP SLEEP	Displays the status of the wake up permit of the electrically-driven intelligent brake unit at the time a DTC is detected.		
STATUS READY	Displays the status of READY where a DTC is detected.		
CONDITION CAN DIAG PERMIS	Displays the status of the CAN communication diagnosis permit at the time a DTC is detected.		

^{*1:} When the driver's door is open: "DOOR OPEN" is displayed. When the driver's door is closed: "DOOR CLOSE" is displayed.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

^{*2:} When one or more doors including the back door are open: "DOOR OPEN" is displayed. When all doors including the back door are closed: "DOOR CLOSE" is displayed.

DIAGNOSIS SYSTEM (ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT)

< SYSTEM DESCRIPTION >

Item (Unit)	Note:
MASTER CYL PRESSURE (V)	Master cylinder pressure sensor voltage is displayed.
MASTER CYL PRES (VDC) (MPa)	Displays the fluid pressure of master cylinder part.
MOTOR TEMPERATURE (°F)	Displays the temperature of the motor inside the electrically-driven intelligent brake unit.
CONTROL MODULE TEMP (°F)	Displays the temperature of the control module that is integrated with the electrically-driven intelligent brake unit.
MST CYL PRES POWER VOLT (V)	Master cylinder pressure sensor power supply is displayed
STROKE SEN 1 POWERT VOLT (V)	Stroke sensor 1* output power supply is displayed
MOTOR POWER SUPPLY (V)	Displays the power supply voltage of the motor inside the electrically-driven intelligent brake unit.
CONTROL MODULE POWER (V)	Displays the power supply voltage of the control module that is integrated with the electrically-driven intelligent brake unit.
STROKE SEN 1 LEARN VALUE (deg)	Displays the stroke sensor 1* learning value.
STROKE SEN 2 LEARN VALUE (deg)	Displays the stroke sensor 2* learning value.
STROKE SEN 1 OUTPUT VOLT (V)	Displays the stroke sensor 1* output voltage.
ALL SENSOR LEARNING (INCOMP/COMP)	Displays the learning values of stroke sensor 1*, stroke sensor 2*, and master cylinder pressure.
STEERING ANGLE SENSOR (deg)	Displays the steering angle.
DECEL G SENSOR (G)	Displays the decel G.
SIDE G SENSOR (G)	Displays the side G.
YAW RATE SENSOR SIGNAL (deg/s)	Displays the yaw rate.
WHEEL SENSOR FRONT RH (rpm)	Displays the front RH wheel speed.
WHEEL SENSOR FRONT LH (rpm)	Displays the front LH wheel speed.
WHEEL SENSOR REAR RH (rpm)	Displays the rear RH wheel speed.
WHEEL SENSOR REAR LH (rpm)	Displays the rear LH wheel speed.
VEHICLE SPEED (km/h)	Displays the vehicle speed.
ACTUAL GEAR POSITION [D/R/(N/P)]	Displays the shift position.
BRAKE SWITCH (On/Off)	Displays the operating status of stop lamp switch.
COMMAND WAKE UP SLEEP (SLEEP/WAKEUP)	Displays the wake up status.
DOOR SWITCH (CLOSE/OPEN)	Displays the status of door.
IGNITION SIGNAL (On/Off)	Displays the status of power switch.

DIAGNOSIS SYSTEM (ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT)

< SYSTEM DESCRIPTION >

Item (Unit)	Note:
VCM STATUS (On/Off)	Displays the VCM status.
BACKUP UINT DIAG RESULT (NORMAL/ERR1/ERR2/ERR3/ERR4/ ERR5/ERR6/ERR7/ERR8/ERR9/ERR10/ ERR11/ERR12/ERR13/ERR14/ERR15)	Displays the diagnosis results for the brake power supply backup unit.
BACKUP UNIT MODE (On/Off)	Displays the operating status of the brake power supply backup unit.
BACKUP UNIT CHG STATUS (CHG1/CHG2/FULL)	Displays the charge status of the brake power supply backup unit.
DRV TRQ CTRL VAL (Nm)	Displays a correction value for minutely increasing/decreasing the drive torque.
DRV TRQ CTRL MODE (NOMAL/ERR1/ERR2/ERR3)	Displays a correction state of minutely increasing/decreasing the drive torque.
DRV TRQ CTRL STP FLAG (PERMIS/CANCEL)	Displays the permission/cancellation to a correction for minutely increasing/decreasing the drive torque.

^{*:} The stroke sensor is composed of two circuits: stroke sensor 1 and stroke sensor 2.

WORK SUPPORT

Item	Description
STROKE SENSOR 0 POINT LEARNING	Perform stroke sensor learning.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Reference Value

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CONSULT DATA MONITOR STANDARD VALUE

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Condition	Reference values in normal operation	D	
MASTER CYL PRESSURE	Gradually depress the brake pedal	Increases between 0.5 – 4.5 V according to the depth of brake pedal depression.	_	
MASTER CYL PRES (VDC)	Gradually depress the brake pedal	Increases between 0 – 25.6 MPa according to the depth of brake pedal depression.	E	
MOTOR TEMPERATURE	Always	239°F (115 °C) or less	BR	
CONTROL MODULE TEMP	Always	302°F (150 °C) or less	DI	
MST CYL PRES POWER VOLT	Always	4.75 – 5.25 V		
STROKE SEN 1 POWER VOLT	Always	4.75 – 5.25 V	(
MOTOR POWER SUPPLY	Always	9 – 16 V		
CONTROL MODULE POWER	Always	9 – 16 V		
STROKE SEN 1 LEARN VALUE*1	Always	43.32 – 64.76 deg	-	
STROKE SEN 2 LEARN VALUE*1	Always	(-2.37) - 20.74 deg		
STROKE SEN 1 OUTPUT VOLT*1	Gradually depress the brake pedal	Increases between 0.51 – 4.59 V according to the depth of brake pedal depression.		
ALL SENSOR LEARNING*2	Learning not completed	INCOMP		
ALL SENSOR LEARNING 2	Learning completed	COMP		
	When driving straight	0±3.5°		
STEERING ANGLE SENSOR	When steering wheel is steered to LH by 90°	Approx. –90°	k	
	When steering wheel is steered to RH by 90°	Approx. +90°		
	Vehicle stopped	Approx. 0 G	L	
DECEL G SENSOR	During acceleration	Positive value		
	During deceleration	Negative value		
	Vehicle stopped	Approx. 0 G		
SIDE G SENSOR	Right turn	Negative value		
	Left turn	Positive value	N	
	Vehicle stopped	Approx. 0 deg/s		
YAW RATE SENSOR SIGNAL	Right turn	Negative value		
	Left turn	Positive value		
WHEEL CENICOR EDON'T DIL	Vehicle stopped	0 rpm		
WHEEL SENSOR FRONT RH	Driving*3	Increases according to vehicle speed.	F	
WHEEL SENSOD EDON'T LLL	Vehicle stopped	0 rpm		
WHEEL SENSOR FRONT LH	Driving*3	Increases according to vehicle speed.		
WHEEL CENCOR DEAD DIT	Vehicle stopped	0 rpm		
WHEEL SENSOR REAR RH	Driving*3	Increases according to vehicle speed.		

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< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition	Reference values in normal operation
WHEEL CENCOR READ III	Vehicle stopped	0 rpm
WHEEL SENSOR REAR LH	Driving*3	Increases according to vehicle speed.
	Vehicle stopped	0.00 km/h (0.00 MPH)
HEEL SENSOR REAR LH HICLE SPEED TUAL GEAR POSITION AKE SWITCH MMAND WAKE UP SLEEP OOR SWITCH WITION SIGNAL M STATUS CKUP UNIT DIAG RESULT CKUP UNIT MODE	Driving ^{*3}	Almost same reading as speedometer (within $\pm 10\%$)
	D position	1 – 8
ACTUAL GEAR POSITION	R position	R
Monitor item HEEL SENSOR REAR LH HICLE SPEED TUAL GEAR POSITION AKE SWITCH MMAND WAKE UP SLEEP FOR SWITCH WITION SIGNAL M STATUS CKUP UNIT DIAG RESULT CKUP UNIT MODE	N or P position	N/P
DDAKE SWITCH	Brake pedal is depressed.	On
BRAKE SWITCH	Brake pedal is not depressed.	Off
COMMAND WAKE UP SLEEP	When command is not input from BCM.	SLEEP
Monitor item HEEL SENSOR REAR LH HICLE SPEED TUAL GEAR POSITION TAKE SWITCH OMMAND WAKE UP SLEEP OOR SWITCH WITION SIGNAL TO STATUS CKUP UNIT DIAG RESULT CKUP UNIT MODE	When command is input from BCM.	WAKEUP
DOOR SWITCH	After the all door is closed, 20 seconds later from room lamp OFF	CLOSE
	Any door is open	OPEN
JONETION GLOVAL	Power switch ON	On
IGNITION SIGNAL	Power switch other than ON	Off
NOM OTATIO	Active	On
VCM STATUS	In active	Off
	Normal	NORMAL
	Overvoltage	ERR1
	Communications malfunction	ERR2
	Charging circuit malfunction	ERR3
	Discharge circuit open	ERR4
	Discharge circuit shorted	ERR5
	Cell malfunction	ERR6
AKE SWITCH DMMAND WAKE UP SLEEP DOR SWITCH NITION SIGNAL M STATUS CKUP UNIT DIAG RESULT	Backup power circuit malfunction	ERR7
DACKUD LINUT DIAC DECULIT	Start signal malfunction	ERR8
WHEEL SENSOR REAR LH ZEHICLE SPEED ACTUAL GEAR POSITION RAKE SWITCH COMMAND WAKE UP SLEEP COOR SWITCH COM STATUS CACKUP UNIT DIAG RESULT CACKUP UNIT MODE	The control part is in abnormal condition	ERR9
	Monitor circuit malfunction	ERR10
	Insulation malfunction	ERR11
	Output circuit malfunction (other than discharge circuit)	ERR12
	Temperature detection circuit mal- function	ERR13
	Deteriorated	ERR14
	Outside the reference voltage	ERR15
	Backup power supply mode is active	On
BACKUP UNIT MODE	Backup power supply mode is not activated	Off
	80% or less (backup power supply not possible)	CHRG1
BACKUP UNIT CHG STATUS	80 – 99%(backup power supply possible)	CHRG2
	100% (backup power supply possible)	FULL

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< ECU DIAGNOSIS INFORMATION >

Monitor item	Condition	Reference values in normal operation Changes according to correction value of drive torque.		
DRV TRQ CTRL VAL	Driving			
	Driving	NOMAL		
	When drive torque control malfunction	ERR1		
	 Any condition listed below: Vehicle stopped. Malfunction in ABS actuator and electric unit (control unit), VCM or electrically-driven intelligent brake unit. Activation of VDC function, TCS function, ABS function or EBD function. 	ERR2		
	Drive torque control is deactivated.	ERR3		
	Drive torque correction permission.	PERMIS		
JRV IRQ CIRL SIP FLAG	Drive torque correction cancellation.	CANCEL		

^{*1:} The stroke sensor contains two circuits: stroke sensor 1 and stroke sensor 2.

Fail-Safe

 When there is a malfunction in the power system of the electrically-driven intelligent brake unit (no voltage is generated), voltage is temporarily supplied to the electrically-driven intelligent brake unit from the brake power supply backup unit. At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON and the buzzer sounds.

• When a malfunction occurs in the electrically-driven intelligent brake unit, the VDC function performs control (boost operation).

When a malfunction occurs in the PDM (Power Delivery Module) and 12V battery, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, brake warning lamp (red) and the brake system warning lamp (yellow) turn ON.

 When a malfunction occurs in the brake power supply backup unit, the brake system warning lamp (yellow) turn ON

• When a malfunction occurs in the electrically-driven intelligent brake and in the VDC function, the braking force is determined by the force pressing on the brake pedal (no boost operation). At the same time, the brake warning lamp (red) and brake system warning lamp (yellow) turn ON.

• When a malfunction occurs in the electrically-driven intelligent brake, VDC function, and power system, cooperative regenerative brake control is not performed.

DTC	Vehicle condition	M
C1A60	The following functions are suspended.	
C1A61	Boost operation by the electrically-driven intelligent brake Cooperative regenerative brake control	
C1A62	Power supply from the brake power supply backup unit	Ν
C1A63	The following function is suspended. • Power supply from the brake power supply backup unit	-
C1A65	The following functions are suspended. • Boost operation by the electrically-driven intelligent brake • Cooperative regenerative brake control • Power supply from the brake power supply backup unit	O P
C1A67	Normal control	-
C1A69	The following functions are suspended. • Boost operation by the electrically-driven intelligent brake • Cooperative regenerative brake control • Power supply from the brake power supply backup unit	-

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^{*2:} Learning for stroke sensor 1, stroke sensor 2, and master cylinder fluid pressure.

^{*3:} Check tire pressure under normal conditions.

< ECU DIAGNOSIS INFORMATION >

DTC	Vehicle condition
C1A6B	
C1A6C	The following function is suspended. • Backup power supply from the brake power supply backup unit
C1A6D	Backap power suppry from the brake power suppry backap unit
C1A6E	The following function is suspended. Cooperative regenerative brake control hill start assist function
C1A6F	The following function is suspended. • hill start assist function
C1A70	The following function is suspended.
C1A74	Cooperative regenerative brake control hill start assist function
C1A80	
C1A81	
C1A82	
C1A83	
C1A84	
C1A85	The following functions are suspended.
C1A86	Boost operation by the electrically-driven intelligent brake Connective regenerative brake control.
C1A87	Cooperative regenerative brake control Power supply from the brake power supply backup unit
C1A88	
C1A89	
C1A8A	
C1A8B	
C1A90	
C1A91	The following function is suspended. Cooperative regenerative brake control hill start assist function
C1A98	
C1A99	The following function is suspended.
C1A9A	Power supply from the brake power supply backup unit
C1AA0	
C1AA1	 The following functions are suspended. Boost operation by the electrically-driven intelligent brake
C1AA2	 Boost operation by the electrically-driven intelligent brake Cooperative regenerative brake control
C1AA3	Power supply from the brake power supply backup unit
C1AA9	The following function is suspended.
C1AB8	Cooperative regenerative brake control
C1AB9	hill start assist function The following functions are suspended.
C1ABA	Boost operation by the electrically-driven intelligent brake Cooperative regenerative brake control Power supply from the brake power supply backup unit
C1AC0	The following function is suspended. • Cooperative regenerative brake control
C1AC1	The following functions are suspended. • Boost operation by the electrically-driven intelligent brake
C1AC8	Named andrei
C1AD0	Normal control

< ECU DIAGNOSIS INFORMATION >

DTC	Vehicle condition					
U1000	The following function is suspended.					
U1010	Cooperative regenerative brake control					
U1510	hill start assist function					
U1511	The following functions are suspended. • Power supply from the brake power supply backup unit					

DTC Inspection Priority Chart

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When multiple DTCs are displayed simultaneously, check them one by one according to the following priority list.

Priority Detected item (DTC) Е U1000 CAN COMM CIRCUIT U1010 CONTROL UNIT (CAN) 1 U1510 BRAKE CONTROL COMMUNICATION U1511 POWER SUPPLY BACKUP UNIT COMM BR C1A60 CONTROL MODULE C1A6B POWER SUPPLY BACKUP UNIT C1A80 CONTROL MODULE-2 C1A81 CONTROL MODULE-3 C1A82 CONTROL MODULE-4 C1A83 CONTROL MODULE-5 C1A84 CONTROL MODULE-6 Н 2 C1A85 CONTROL MODULE-7 C1A86 CONTROL MODULE-8 C1A87 CONTROL MODULE-9 C1A88 CONTROL MODULE-10 C1A89 CONTROL MODULE-11 C1A8A CONTROL MODULE-12 C1A8B CONTROL MODULE-13 C1AC8 POWER SUPPLY BACKUP UNIT-2 C1A6E EV/HEV SYSTEM C1A6F TCM/VCM SYSTEM 3 C1A70 BRAKE CONTROL SYSTEM K · C1A74 ST ANG SEN CIRCUIT C1A61 MOTOR POWER SUPPLY C1A62 CONTROL MODULE POWER SUPPLY C1A63 BACKUP POWER SUPPLY C1A6C POWER SUPPLY BACKUP UNIT VOLT C1A90 POWER SUPPLY MODE C1A91 IGNITION POWER SUPPLY C1A98 BACKUP POWER SUPPLY-2 C1A99 BACKUP POWER SUPPLY-3 C1A9A BACKUP POWER SUPPLY-4 C1AD0 POWER SUP BACKUP UNIT VOLT-2 Ν C1A65 STROKE SENSOR SET C1A67 STOP LAMP SWITCH C1A69 MOTOR C1A6D POWER SUPPLY BACKUP UNIT OUTPUT C1AA0 STROKE SENSOR-2 C1AA1 STROKE SENSOR-3 C1AA2 STROKE SENSOR-4 5 Р C1AA3 STROKE SENSOR-5 C1AA9 PRESSURE SENSOR C1AB8 MOTOR-2 C1AB9 MOTOR-3 C1ABA MOTOR-4 C1AC0 CONTROL MODULE TEMP-2 C1AC1 CONTROL MODULE TEMP-3

< ECU DIAGNOSIS INFORMATION >

DTC Index

DTC	Display item	Brake warning lamp	Brake system warning lamp	Refer to
C1A60	CONTROL MODULE	ON	ON	BR-79, "DTC Logic"
C1A61	MOTOR POWER SUPPLY	ON	ON	BR-87, "DTC Logic"
C1A62	CONTROL MODULE POWER SUPPLY	ON	ON	BR-95, "DTC Logic"
C1A63	BACKUP POWER SUPPLY	OFF	ON	BR-104, "DTC Logic"
C1A65	STROKE SENSOR SET	ON	ON	BR-113, "DTC Logic"
C1A67	STOP LAMP SWITCH	OFF	ON	BR-125, "DTC Logic"
C1A69	MOTOR	ON	ON	BR-137, "DTC Logic"
C1A6B	POWER SUPPLY BACKUP UNIT	OFF	ON	BR-146, "DTC Logic"
C1A6C	POWER SUPPLY BACKUP UNIT VOLT	OFF	ON	BR-156, "DTC Logic"
C1A6D	POWER SUPPLY BACKUP UNIT OUTPUT	OFF	OFF	BR-165, "DTC Logic"
C1A6E	EV/HEV SYSTEM	OFF	ON	BR-173, "DTC Logic"
C1A6F	TCM/VCM SYSTEM	OFF	ON	BR-182, "DTC Logic"
C1A70	BRAKE CONTROL SYSTEM	OFF	ON	BR-191, "DTC Logic"
C1A74	ST ANG SEN CIRCUIT	OFF	ON	BR-200, "DTC Logic"
C1A80	CONTROL MODULE-2	ON	ON	BR-208, "DTC Logic"
C1A81	CONTROL MODULE-3	ON	ON	BR-216, "DTC Logic"
C1A82	CONTROL MODULE-4	ON	ON	BR-224, "DTC Logic"
C1A83	CONTROL MODULE-5	ON	ON	BR-232, "DTC Logic"
C1A84	CONTROL MODULE-6	ON	ON	BR-240, "DTC Logic"
C1A85	CONTROL MODULE-7	ON	ON	BR-248, "DTC Logic"
C1A86	CONTROL MODULE-8	ON	ON	BR-256, "DTC Logic"
C1A87	CONTROL MODULE-9	ON	ON	BR-264, "DTC Logic"
C1A88	CONTROL MODULE-10	ON	ON	BR-272, "DTC Logic"
C1A89	CONTROL MODULE-11	ON	ON	BR-280, "DTC Logic"
C1A8A	CONTROL MODULE-12	ON	ON	BR-288, "DTC Logic"
C1A8B	CONTROL MODULE-13	OFF	ON	BR-296, "DTC Logic"
C1A90	POWER SUPPLY MODE	OFF	OFF	BR-304, "DTC Logic"
C1A91	IGNITION POWER SUPPLY	OFF	ON	BR-313, "DTC Logic"
C1A98	BACKUP POWER SUPPLY-2	OFF	ON	BR-322, "DTC Logic"
C1A99	BACKUP POWER SUPPLY-3	OFF	ON	BR-331, "DTC Logic"
C1A9A	BACKUP POWER SUPPLY-4	OFF	ON	BR-340, "DTC Logic"
C1AA0	STROKE SENSOR-2	ON	ON	BR-349, "DTC Logic"
C1AA1	STROKE SENSOR-3	ON	ON	BR-361, "DTC Logic"
C1AA2	STROKE SENSOR-4	ON	ON	BR-373, "DTC Logic"
C1AA3	STROKE SENSOR-5	ON	ON	BR-385, "DTC Logic"
C1AA9	PRESSURE SENSOR	OFF	ON	BR-397, "DTC Logic"
C1AB8	MOTOR-2	OFF	ON	BR-407, "DTC Logic"
C1AB9	MOTOR-3	ON	ON	BR-416, "DTC Logic"
C1ABA	MOTOR-4	ON	ON	BR-425, "DTC Logic"
C1AC0	CONTROL MODULE TEMP-2	OFF	ON	BR-434, "DTC Logic"
C1AC1	CONTROL MODULE TEMP-3	ON	ON	BR-443, "DTC Logic"

< ECU DIAGNOSIS INFORMATION >

DTC	Display item	Brake warning lamp	Brake system warning lamp	Refer to
C1AC8	POWER SUPPLY BACKUP UNIT-2	OFF	OFF	BR-452, "DTC Logic"
C1AD0	POWER SUP BACKUP UNIT VOLT-2	OFF	OFF	BR-462, "DTC Logic"
U1000	CAN COMM CIRCUIT	OFF	ON	BR-471, "DTC Logic"
U1010	CONTROL UNIT (CAN)	OFF	ON	BR-473, "DTC Logic"
U1510	BRAKE CONTROL COMMUNICATION	OFF	ON	BR-475, "DTC Logic"
U1511	POWER SUPPLY BACKUP UNIT COMM	OFF	ON	BR-483, "DTC Logic"

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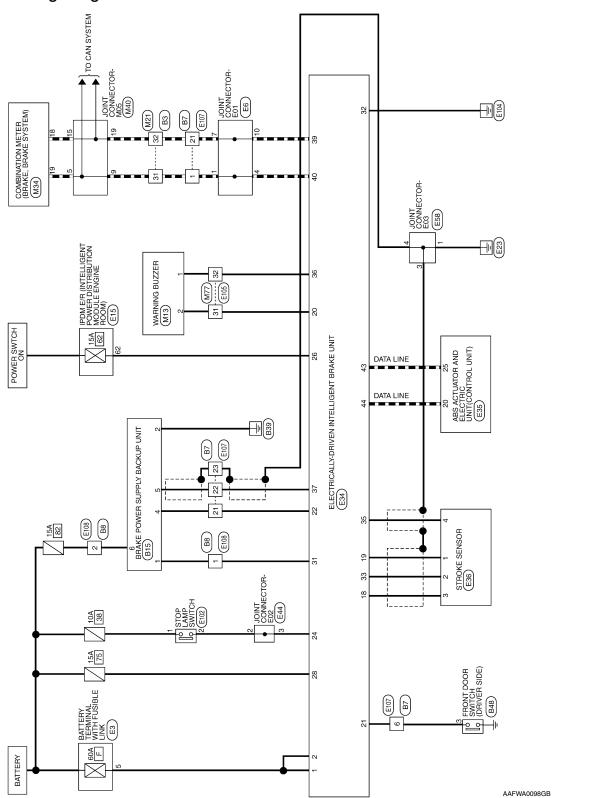
WIRING DIAGRAM

BRAKE SYSTEM

TYPE 1

BRAKE SYSTEM

TYPE 1: Wiring Diagram



Signal Name	I	ı	1	-	ı	ı	I	I	ı	ı	ı
Color of Wire	ı	ı	1	-	ı	1	ı	ı	1	-	ı
Terminal No. Wire	9	7	8	6	10	11	12	13	14	15	46

M20 WIRE TO WIRE	1 E	13 12 11 10 9 8	Signal Name	-	-	_	-	_
<u>e</u>	lor WHITE	7 6 5 4 16 15 14 13	Color of Wire	1	_	ı	ı	-
Connector No.	Connector Color	(中)	Terminal No.	٢	2	င	4	5

<u>a</u>	Signal Name	ı	1
	Color of Wire	M	В
H.S.	Terminal No. Wire	-	2

Signal Name	I	ı	ı	ı	ı	1	ı	1	1	ı	I	ı
Color of Wire	_	1	-	8	В	Μ	>	_	Μ	٦	T	Ь
Terminal No. Wire	21	22	23	24	25	56	27	28	59	30	31	32

Signal Name	ı	ı	ı	ı	1	1	ı	ı	1	ı	1	1
Color of Wire	Œ	SB	Ь	>	GR	Ь	٦	G	-	1	1	ı
Terminal No. Wire	6	10	11	12	13	14	15	16	41	18	19	50

				1	18 17									
	WIRE TO WIRE	ITE		12 11 10 9 8 7 6 5 4 3	28 27 26 25 24 23 22 21 20 19	Signal Name	-	1	_	-	_	_	-	_
- - - -	me WIF	lor WHITE		14 13	31 30 29	Color of Wire	1	ı	1	I	ı	I	В	SHIELD
Connector No.	Connector Name	Connector Color		η 9	8	Terminal No.	1	2	3	4	9	9	2	8

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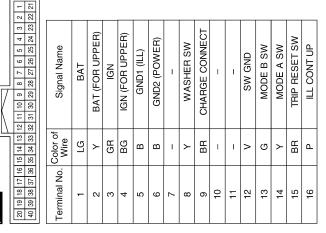
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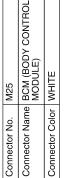
BRAKE SYSTEM - CONNECTORS Connector No. M13
Connector Name WARNING BUZZER
Connector Color BROWN

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Terminal No.	Color of Wire	Signal Name
17	G	UPPER ILL CONT
18	Ь	CAN-H
19	٦	CAN-L
20	ГG	AS SEATBELT W/L
21	_	1
22	GR	GND (FOR UPPER)
23	1	ı
24	BG	PKB SW
25	SB	BRAKE OIL
26	В	ILL CONT OUT
27	В	A/BAG WARN
28	В	SECURITY
29	_	-
30	GR	8 P/R O/P
31	_	ı
32	Μ	SDA (12C)
33	G	SCL (12C)
34	L	CHARGE LAMP
35	-	-
36	ı	ı
37	_	1
38	>	LED H LAMP R
39	LG	LED H LAMP L
40	M	BUCKLE SW FR DR

Connector No.	M34
Connector Name	Connector Name COMBINATION METER
Connector Color WHITE	WHITE









Terminal No.	Color of Wire	Signal Name
99	ГG	BATTERY SAVER OUTPUT
57	Р	BATTERY (FUSE)
58	_	_
69	ГС	DOOR UNLOCK OUTPUT (AS)
09	۸	FLASHER OUTPUT (LEFT)
61	В	FLASHER OUTPUT (RIGHT)
62	_	_
63	BR	ROOM LAMP OUTPUT
64	_	1
99	۸	DOOR LOCK OUTPUT
99	G	DOOR UNLOCK COMMON (DR)
67	В	GND
89	Г	POWER WINDOW POWER SUPPLY (RAP)
69	В	POWER WINDOW POWER SUPPLY (BATTERY)
70	Υ	BATTERY (F/L)

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Connector Name JOINT CONNECTOR-M05	ρ		Ļ	S	Ž	Ě	ᄓ	Ö	7-	MO	5
Connector Color BLUE	面	∃	ш								
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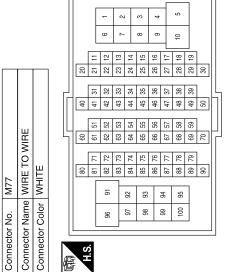
Signal Name	ı	I	ı	ı	I	ı	ı	ı	ı	ı	ı	I	ı	I	ı	ı	ı	ı	ı	ı
Color of Wire	٦	Γ	BR	GR	Γ	_	٦	٦	_	٦	LG	ГG	Γ	В	Ь	Ь	Ь	Ь	Ь	Ь
Terminal No.	-	2	8	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20

M40

Connector No.

Signal Name	ı	1	-	ı	1	_	1	1	1	1	ı	ı	1	ı	ı	1	ı	I	1	ı	1	ı	ı	ı	ı	1	ı	ı	1	ı	ı	ı	1	
Color of Wire	GR	8	BR	SHIELD	Μ	LG	В	G	BG	GR	Œ	æ	В	8	٦	>	LG	GR	٦	>	SB	Œ	ŋ	SHIELD	>	BR	8	۵	٦	۵	ŋ	>	LG	Ж
Terminal No.	61	62	63	64	92	99	29	89	69	70	71	72	73	74	9/	80	81	83	84	85	98	88	68	06	91	92	93	94	96	96	26	86	66	100

Signal Name	ı	1	1	-	I	ı	1	1	1	ı	ı	I	ı	ı	1	1	ı	_	1	1	-	-	1	_	_	_	_	1	I	_	I	I	ı	ı	1
Color of Wire	BG	В	Μ	В	В	В	В	Я	×	GR	BR	BR	Μ	٦	FG	SB	>	Ь	SB	G	LG	У	В	W	Γ	G	L	SB	_	В	В	>	У	_	>
Terminal No.	23	24	25	56	22	28	29	31	32	33	34	35	98	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	24	22	99	25	28	09



Signal Name	1	ı	ı	1	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	1
Color of Wire	æ	_	>	P	Ь	GR	g	_	_	>	>	Ж	g	>	В	g	Μ	GR	Д	В
Terminal No.	-	2	က	4	9	7	6	10	1	12	13	14	15	16	17	18	19	20	21	22

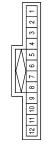
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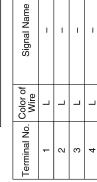
Signal Name	ı	-	ı	ı	-	ı	I	_
Color of Wire	1	٦	Ь	Ь	Ь	Ь	ı	Ь
Terminal No. Color of Wire	5	9	7	8	6	10	11	12

Connector Name JOINT	Connector Name JOINT CONNECTOR-E01 Connector Color BLUE
H.S. 112	12 11 10 9 8 7 6 5 4 4 3 2 1

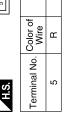
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Connector No.





Connector No.	E3
Connector Name	Connector Name BATTERY TERMINAL WITH FUSIBLE LINK
Connector Color BLACK	BLACK
语 H.S.	(L)



Signal Name

Signal Name	H/LAMP LO LH	H/LAMP LO RH	I	I	FAST CHARGE	ı	VCM IGN	REVERSE LAMP IGN	ABS ECU IGN	F/S RLY CONT	ı	E-CACT/HAS IGN
Color of Wire	٦	۵	1	-	LG	1	ш	0	BR	GR	1	^
Ferminal No.	51	52	53	54	55	99	22	58	59	09	61	62

E15 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) WHITE	Connector No. E15 Connector Name POWEI MODUI Connector Color WHITE
WHITE	Connector Color
	Connector Name
E15	Connector No.





Signal Name	ı	-	H/LAMP HI RH	H/LAMP HI LH
Color of Wire	-	1	Y	G
Terminal No. Color of Wire	47	48	49	20

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Signal Name		IGN SWITCH SIGNAL		ECU CONROL SYSTEM POWER			DLC BACKUP POWER	GND	STROKE SENSOR1 SIGNAL		STROKE SENSOR2 SIGNAL	BUZZER SIGNAL	DLC COMMUNICATION		CAN-L	CAN-H			CAN-L	CAN-H		
Color of Wire	ı	^	1	Г	1	1	Μ	В	Š	1	В	Ν	W	1	Ь	_	1	ı	W	L	ı	ı
Terminal No.	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46

Signal Name												STROKE SENSOR POWER	STROKE SENSOR GND	BUZZER POWER	DOOR SWITCH SIGNAL	DLC WAKE-UP		
Color of Wire	1	1	ı	1	ı	ı	ı	ı	1	1	_	M/L	0/1	В	GR	0	ı	
Terminal No.	7	8	6	10	#	12	13	14	15	16	17	18	19	20	21	22	23	

Connector No.	<u>0</u>	E34	4								
Connector Name	lame	_	ELECTRICALLY-CDRIVEN INTELLIGENT BRAKE UNIT	[변화	일照	 	H X	浜美	≗⊒	[뉴트	
Connector Color	olor	В	BLACK	~							
用S.											
		느			l	Г					1
31 32	33 34 35 36 37 38 39 40 41 42 43 44 45 46	36	37	38	೫	4	11 42	43	4	45	(\$
	17 18 19 20 21 22	19	2	22	83	24	24 25 26 27 28 29 30	27	58	53	8
	3 4	9	7	80	6	10	10 11 12 13 14 15 16	13	14	15	16

Signal Name	MOTOR POWER	MOTOR POWER	_	1	ı	-
Color of Wire	\	>	-	ı	ı	-
Terminal No. Wire	1	2	3	4	5	9

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Connector No. E36

Connector Name STROKE SENSOR

Connector Color BLACK





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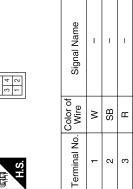
Terminal No.	Color of Wire	Signal Name
13	ß	G SENSOR POWER SUPPLY
14	В	G SENSOR SIGNAL (+)
15	ÐП	RR RH WHEEL SENSOR SIGNAL
16	>	POWER SWITCH ON
17	ı	
18	ı	
19	-	
20	٦	CAN2-H
21	В	FR RH WHEEL SENSOR POWER SUPPLY
22	Τ	CAN-H
23	Ж	FR LH WHEEL SENSOR POWER SUPPLY
24	-	
25	W	CAN2-L
26	В	RR LH WHEEL SENSOR POWER SUPPLY
27	\	FR LH WHEEL SENSOR SIGNAL
28	В	G SENSOR GND
29	Υ	G SENSOR SIGNAL (-)
30	G	RR LH WHEEL SENSOR SIGNAL
31	ı	
32	0/1	PRESS SENSOR GND

Connector No.	E35
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color BLACK	BLACK
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	5 5 7 8 9 10 11 12 13 14 15 16 17 18 9 10 11 12 12 12 12 12 12

Signal Name	MOTOR BATTERY	VALVE BATTERY	GROUND	GROUND	ESP OFF SW SIGNAL	BRAKE SW SIGNAL	PRESS SENSOR SIGNAL	STOP LAMP SW SIGNAL	CAN-L	PRESS SENSOR POWER SUPPLY	RR RH WHEEL SENSOR POWER SUPPLY	FR RH WHEEL SENSOR SIGNAL
Color of Wire	g	н	В	В	Ь	0	ΓV	SB	Р	W/L	BR	W
Terminal No. Color of Wire	٢	2	3	4	5	9	7	8	6	10	11	12

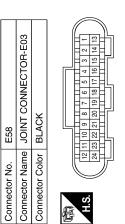
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	MP SWITCH		
E102	STOP LA	WHITE	
Connector No.	Connector Name STOP LAMP SWITCH	Connector Color WHITE	

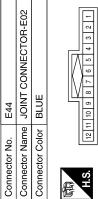


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Signal Name	ı	ı	I	-	I	I	1	ı	ı	1	ı	I	-	ı	I	ı	I	1	1	ı	1	ı	I	I
Color of Wire	B/B	SHIELD	SHIELD	SHIELD	ı	ı	1	1	1	B/R	SHIELD	SHIELD	W	W	Μ	Μ	8	Μ	В	g	_	>	>	>
Terminal No.		2	3	4	5	9	7	8	6	10	Ξ	12	13	14	15	16	17	18	19	20	21	22	23	24



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Signal Name	_	I	I	ı	ı	I	ı	ı	I	ı	ı	I
Color of Wire	SB	SB	SB	SB	1	SB	0	0	0	0	0	1
Terminal No. Color of Wire	1	2	3	4	5	9	2	8	6	10	11	12

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WHE TOWNE	Connector No.	lo. E105)5		20	BR	I	28	_	ı
	Connector N		RE TO WIRE		21	Ж	1	09	re	ı
	Connector C		ITE		22	В	ı	61	GR	ı
				1	23	LG	ı	62	8	ı
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	5	\vdash	31 41 51	8 3	25	W	ı	64	SHIELD	
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1 1 1 1 1 1 1 1 1 1			26 36 46 56	98 5	59	M	-	89	В	_
			38 48 58	; z	31	æ	ı	69	В	ı
Signat Name		-	39 49 59	3 8	32	W	1	70	BR	-
Signal Name Signal Name			20	06	33	G	ı	71	LG	ı
Color of Wire Wire Wire Wire Lab Signat Name 35 V — 74 O D L — 37 L — 77 Y C L P L L C L<					34	BR	1	72	н	-
Wire Wire 36 0 - 74 0 L L - 37 L - 77 Y BW FRONTFOGLAMPS) 40 Y - 81 SB R HEADLAMPS) 41 O - 83 GR BW HEADLAMPS) 42 Y - 84 L BW -WITHOUT ED 42 Y - 84 L BW -WITHOUT ED 43 BR - 84 BR BW -WITHOUT ED 44 W - 86 BR BW - 45 G - 96 BR C - - </td <td>Terminal No.</td> <td>Color of</td> <td></td> <td></td> <td>35</td> <td>٧</td> <td>1</td> <td>73</td> <td>В</td> <td>1</td>	Terminal No.	Color of			35	٧	1	73	В	1
H	,	Wire			36	0	1	74	0	1
L L	-	r.	1		37	L	-	9/	٦	1
BW FROWTHOUN 39 P - 80 P LG -(WTM LED) 40 V - 81 SB LG -(WTM LED) 41 O - 83 GR B/W -(WTM LED) 42 Y - 84 L B/W -(WTM LED) 43 BR - 86 BR B/W -(WTM LED) 43 BR - 86 BR L B/W -(WTM CLED) 44 W - 86 BR L B/W -(WTM CLED) 44 W - 86 BR BR W - 44 W - 86 W BR B/W - 44 W - 86 W BR C - - 44 W - 86 W W - - 44 B - 9	2	-	1		38	SB	ı	77	>	I
R HEADLAMPS)	က	BW	- (WITHOUT FRONT FOG LAMPS)		39	Ь	ı	80	۵	1
I.G HEADLAMPS) 41 O — 83 GR I.G —WITH EDD 43 BR — 84 L B/N —(WITH OUT FRONT FRON		٥	– (WITH LED		40	>	1	81	SB	ı
LG —(MTH LED) 42 Y — 84 L L L L ES L ES L ES L	7)	r	HEADLAMPS)		41	0	-	83	GR	_
B/W - (WTHOUT FRONT FRONT FOLD) 44 W	4	re	- (WITH LED HEADI AMBS)		42	Υ	1	84	٦	1
B/W YEGGLAMPS) 44 W - 86 BR B/R - 46 P - 88 B W - 46 P - 89 W G - 47 LG - 90 SHELD 47 LG - 91 Y 48 B - 91 Y 48 B - 91 Y 49 L - 92 BR 50 C - 93 O 50 C - 93 O 50 C - 94 R 50 C - 95 V 6 C - 95 V 6 C - 95 V 8 C - 95 V 8 C - 95 V <t< td=""><td></td><td></td><td>- WITHOLIT FBONT</td><td></td><td>43</td><td>BR</td><td>1</td><td>85</td><td>0</td><td>1</td></t<>			- WITHOLIT FBONT		43	BR	1	85	0	1
B/R - 45 G - 88 B W - 46 P - 89 W G - 47 LG - 90 SHELD H - - 90 SHELD W H - - 91 Y R H - - 91 Y R H - - 93 N R H - - 94 R	4	B/W	FOG LAMPS)		44	W	1	98	BR	1
W - 46 P - 89 W G - 47 LG - 90 SHELD H - 47 R - 91 Y H - 48 B - 91 Y H - 48 B - 93 B H - - 93 D B H - - - 93 D B H - - - - 93 D B H - - - - - - - - - - - - -	9	B/R	1		45	G	-	88	В	-
G 47 LG 90 SHELD R 47 R 91 Y R 48 B 92 BR Y R Y 49 L 93 O R R Y 51 W 94 R R R 0 0 94 R R R 0 0 94 R R R 0 0 94 R R R 0 94 R	7	M	ı		46	Ь	1	68	Μ	1
R 47 R 91 Y I L 92 BR I Y 93 O BR I W 94 R R I G 95 Y R I G I I I I I I G I I I <	တ	თ	ı		47	ГG	ı	06	SHIELD	
L - 48 B - 92 BR Y - 49 L - 93 O P M - 50 G - 94 R P S G - 94 R P P P S G - 95 O P P P S G - - 95 P P P M F F F P P P P M F F F P P P P M F F F F P P P M F F F F P P P M F F F F P P P P M F F F F P P <td< td=""><td>10</td><td>æ</td><td>ı</td><td></td><td>47</td><td>Ж</td><td>1</td><td>91</td><td>\</td><td>ı</td></td<>	10	æ	ı		47	Ж	1	91	\	ı
Y 49 L 94 R W 50 G 94 R F 51 W 95 V G 52 O 96 P G 54 B 97 G F 55 R 99 W W 57 Y 99 O	11	٦	ı		48	В	I	92	BR	-
W - 50 G - 94 R R - 51 W - 95 V R G - 52 O - 96 P R R - - 96 P R<	12	>	ı		49	٦	ı	93	0	1
R C	13	>	ı		20	უ	ı	94	œ	ı
G - 52 O - 96 P P G - 54 B - 97 G W B - 97 G W W W W W B - 97 Y - 99 Y W W W - 57 Y - 100 SB W	14	Ж	-		51	M	-	96	^	-
G - 54 B - 97 G B - 55 B - 98 W O - 56 Y - 99 O WL - 57 Y - 100 SB	15	Э	-		52	0	-	96	Ь	-
R - 55 R - 98 W O - 56 Y - 99 O W/L - 57 Y - 100 SB	16	უ	ı		54	В	1	26	ტ	_
0 - 99 0 W/L - 57 Y - 100 SB	17	Œ	1		55	В	1	86	*	ı
W/L	18	0	1		26	Υ	1	66	0	1
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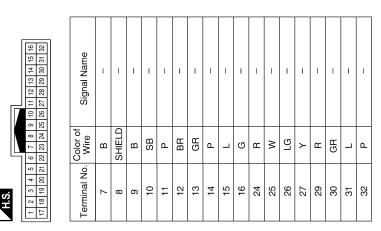
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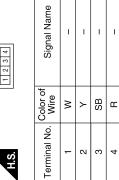
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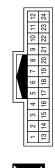
Connector No.	B3
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE











Connector Name | WIRE TO WIRE Connector Color WHITE

E107

Connector No.

		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	_		
	Signal Name	ı	-	-	1	1	-	1	ı	ı	I	1	I	_	I	Ι	I	_	_	-	_	-	_	_	-
	Color of Wire	>	>	SB	Œ	1	GR	1	۵	BR	>	۳	В	១	В	LG	BR	В	В	>	Я	0	Μ	SHIELD	_
J	Terminal No.	-	2	3	4	2	9	7	80	6	10	=	12	13	14	15	16	41	18	19	50	21	22	23	24

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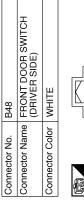
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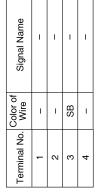
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B7	Signal Name	Wire		─	Connector No. Connector Colar H.S. H.S. Terminal No. 2 2 3 3 4	Signal I	
Terminal No. Wire Signal Name Terminal No. Wire Signal Name Terminal No. Wire Signal Name Terminal No. Wire Signal Name Terminal No. Color of					- LS 0	1 1	-
Terminal No. Oldro of Signal Name Connector Name Signal Name Connector Name Name Name Connector Name Name Connector Name Nam				1	4	-	\
Terminal No. Wire Signal Name WHITE Connector Name Connector Nam	ı	-	Ω		ဧ	1	1
Terminal No. Wire Signal Name Connector No. Base Connector No. C			2 4		7		<u>—</u>
Terminal No. Wire Signal Name Terminal No. Wire Terminal No. Termi		1	15		-		<u>_</u>
Note	I	1	14				2 6
Note Signal Name Signal	1	ı	13			Signal Name	Color of Wire
MINETOWINE Signal Name Connector Name WIRE TO WINE	-	1	12	-			
WHETO WIRE Windle Signal Name Connector Color Windle Signal Name Connector Name Connecto	I	1	11				·]
Name		T	2 :	8 10 11 21 11 01 8		1 0	3 4
WHITE TO WIRE WIRE TO WIRE WHITE TO WIRE	1	1	10	9 10 11 12 13 14 15			E
Name		BB	6	2 3 4 5 6			
Name	I	ı	8	-			-
Number To Wine Signat Name Connector Name Wine Signat Name Connector Name Wine Signat Name Connector Color Winter	ı	ı	7		Connector Col		-
Name		wire		۰	Connector Nar		
Note	Signal Name	14/5			Connector No.	E POWER SUPPLY JP UNIT	
Mile		Solor of				E POWER SUPPLY JP UNIT	
Note Connector Name Note Note		Color of		B26 WIRE TO WIRE	24	E POWER SUPPLY	
Note Connector Name Wife Signal Name Connector Name WHETT		Color of		ELD - B26 WIRE TO WIRE		E POWER SUPPLY	
WRE TO WIRE Terminal No. Wire Signal Name Connector Name WIRE TO WIRE WHITE 8 P - Connector Name WIRE TO W		Color of		M ELD - B26 NIRE NIRE		E POWER SUPPLY	
Note Connector Name Wife Signal Name Connector Name Wife Signal Name Connector Name Wife Mile Mile		Solor of		Y N ELD ELD ESSE NIME NIME		- - E POWER SUPPLY	
Note Connector Name Wire Signal Name Connector Color WHITE		Color of		R Y Y W ELD ELD ESSE WIRE WIRE		- - - E POWER SUPPLY	
Note Connector Name Wife Signal Name Connector Name Wife Signal Name Connector Name Wife Connector Name Connector Name Wife Connector Name Connector N	ı	R Color of		R K K K K K K K K K K K K K K K K K K K			
Name	1 1	R R Oolor of		B B B W W W B E D W W B E D W W B E D		=	
Name	1 1 1	No N		B B K K K K K K K K K K K K K K K K K K			
Name	1 1 1 1	Solor of		BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB			
WHE TO WIRE WHITE WHITE WHITE WHO S I S I S I S I S I S I S I S I S I S	Signal Name	Nire Barrell B		GS SS S		Signal Name	
WHE TO WIRE WHITE WHITE WHITE WHO S S T S S 4 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Signal Name	Wire of Mine o		B B B B B B B B B B B B B B B B B B B		Signal Name	
WIRE TO WIRE WHITE WHITE WHO S 7 5 5 4 3 2 1 1 11 L	Signal Name	Wire Name of N		S S S S S S S S S S S S S S S S S S S		Signal Name	
WIRE TO WIRE WHITE 9 V - 10 Y - 10 Y	Signal Name	Octor of R R R R R R R R R R R R R R R R R R		B B B B B B B B B B B B B B B B B B B		Signal Name	
Name		Oolor of R R R R R R R R R R R R R R R R R R	minal No.	B B B B B B B B B B B B B B B B B B B		Signal Name	
WIRE TO WIRE 8 P – AMHTE		Solor of R R R R R R R R R R R R R R R R R R	min al No.	A Y Y B B B B B B B B B B B B B B B B B		19 18 17 16 15 14 13	
Wine TO Wine Signal Name Signal Name		·	Terminal No. (V Y Y Y B B B B B B B B B B B B B B B B		19 18 17 16 15 14 13	⊣ II———————————————————————————————————
	Signal Name	Notice of the second of the se	Connector Col	A Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y		Signal Name	

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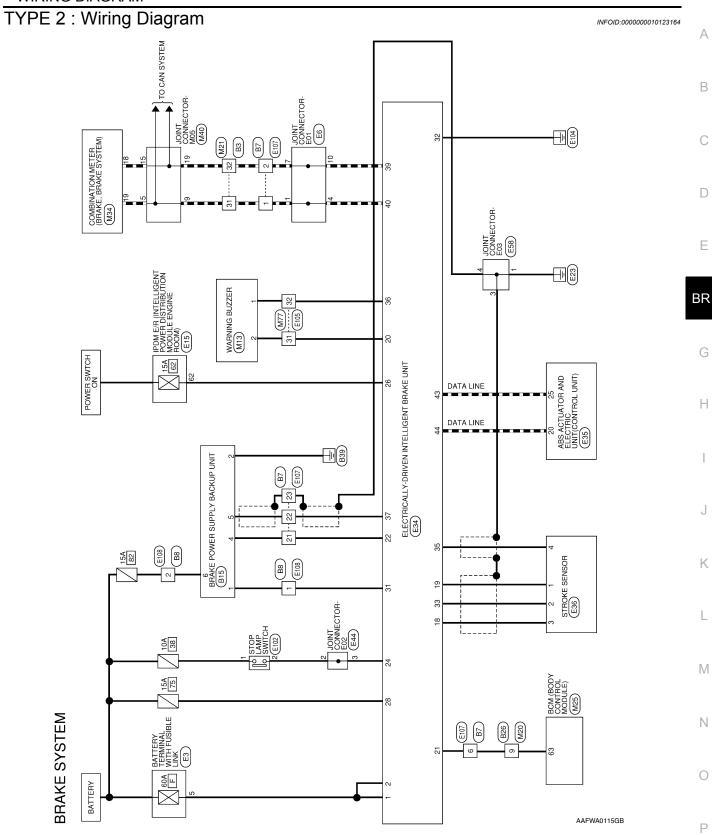






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TYPE 2



Signal Name

Terminal No.

Signal Name

Terminal No.

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BRAKE SYSTEM - CONNECTORS

	NG BUZZER	
M13	WARNIN	BROWN
Connector No.	Connector Name WARNING BUZZER	Connector Color

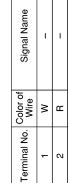
M13	Connector Name WARNING BUZZER	BROWN	
Connector No.	Connector Name	Connector Color BROWN	

Connector Name | WIRE TO WIRE Connector Color WHITE

M20

Connector No.





Signal Name	ı	ı	ı	_	ı	ı	ı	1	ı	_	ı
Color of Wire	ı	ı	1	1	1	1	1	1	1	1	1
Terminal No. Color of Wire	9	7	8	6	10	11	12	13	14	15	16

Signal Name	ı	ı	ı	ı	ı	
Color of Wire	ı	ı	ı	ı	ı	
Ferminal No. Wire	1	2	3	4	5	

Signal Name	ı	_	ı	ı	-
Color of Wire	ı	ı	ı	ı	-
Terminal No. Wire	-	2	က	4	2

M21	WIRE TO WIRE	WHITE	
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	

က	19	
4	20	
2	12	
9	22	
7	23	
8	24	
9	25	
10	26	
1	27	
12	28	
13 12	29	
14	30	
15	31	
16	32	
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Signal Name	ı	-	ı	-	-	ı	-	ı
Color of Wire	ı	-	ı	_	-	ı	В	SHIELD
Terminal No. Wire	1	2	3	4	2	9	2	8

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Signal Name	UPPER ILL CONT	CAN-H	CAN-L	AS SEATBELT W/L	1	GND (FOR UPPER)	1	PKB SW	BRAKE OIL	ILL CONT OUT	A/BAG WARN	SECURITY	=	8 P/R O/P	1	SDA (12C)	SCL (12C)	CHARGE LAMP	_	-	_	LED H LAMP R	LED H LAMP L	BUCKLE SW FR DR
Color of Wire	ß	Ь	٦	LG	-	GR	-	BG	SB	В	В	В	_	GR	1	W	g	L	_	-	_	۸	ГG	W
Terminal No.	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Connector No	M34	
Connector Name	9	COMBINATION METER
	-	
Connector Color	olor WHITE	TE
£		
6.0		
20 19 18 17 16 40 39 38 37 36	15 14 13 1 35 34 33 3	12 11 10 9 8 7 6 5 4 3 2 1 32 31 30 29 28 27 26 25 24 23 22 21
Terminal No.	Color of Wire	Signal Name
-	LG	BAT
2	Υ	BAT (FOR UPPER)
ဇ	GR	IGN
4	BG	IGN (FOR UPPER)
5	В	GND1 (ILL)
9	В	GND2 (POWER)
2	-	ı
8	Υ	WASHER SW
6	BR	CHARGE CONNECT
10	_	ı
11	_	ı
12	>	SW GND
13	g	MODE B SW
14	Υ	MODE A SW
15	BR	TRIP RESET SW
16	Ь	ILL CONT UP

	BCM (BODY CONTROL MODULE)	ΠE	68 69 70	Signal Name	BATTERY SAVER OUTPUT	BATTERY (FUSE)	-	DOOR UNLOCK OUTPUT (AS)	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	ı	ROOM LAMP OUTPUT	1	DOOR LOCK OUTPUT	DOOR UNLOCK COMMON (DR)	GND	POWER WINDOW POWER SUPPLY (RAP)	POWER WINDOW POWER SUPPLY (BATTERY)	BATTERY (F/L)
. M25		lor WHITE	56 57 58 59 60 61 65 66 67 68	Color of Wire	ГС	Ь	_	LG	۸	æ	1	BR	_	٧	G	В	L	В	>
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	56	22	58	59	09	61	62	63	64	65	99	29	89	69	70

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Signal Name	ı	I	ı	ı	ı	ı	ı	ı	ı	ı	I	ı	ı	I	ı	ı	ı	_	ı	-
Color of Wire	_	٦	BR	GR	_	_	_	_	_	_	ГG	LG	٦	В	Ь	Ь	Ь	Ь	Ь	Ь
Ferminal No.	-	2	က	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20

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Signal Name	1	1	1	1	1	1	_	1	1	_	1	1	1	1	ı	1	ı	I	1	ı	1	ı	ı	1	ı	ı	1	1	ı	1	ı	_	1	-
Color of Wire	GR	W	BR	SHIELD	W	LG	В	G	BG	GR	В	В	В	8	٦	8	LG	GR	Г	¥	SB	ш	G	SHIELD	Υ	BR	W	Р	Г	Ь	G	٧	ГG	Œ
Terminal No.	61	62	63	64	65	99	29	89	69	20	71	72	73	74	9/	80	81	83	84	85	98	88	68	06	91	92	63	94	92	96	26	86	66	100

Signal Name	ı	1	ı	-	I	ı	ı	ı	ı	1	1	ı	1	ı	1	1	ı	1	1	1	ı	1	1	1	ı	I	1	1	1	1	ı	ı	1	ı	_
Color of Wire	BG	В	×	В	В	В	В	Ж	*	GR	BR	BR	*	_	ГС	SB	>	Ь	SB	ŋ	ГG	>	æ	M	٦	ŋ	Т	SB	Г	В	œ	>	У	٦	Υ
Terminal No.	23	24	25	56	27	28	29	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	20	51	52	54	55	56	25	28	09

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			9	7		ω	6		10				
		_		_	_			L			,		
		=	12	13	4	12	9	17	200	19			
	2	21	22	23	24	25	56	27	28	29	99		
		_									,		
	Ш	31	32	33	34	35	98	37	88	39		14	
	4	4	42	43	44	45	46	47	48	49	22		
											_		١.
		5	25	23	54	55	29	22	28	29		Ш	3
M77 WIRE TO WIRE WHITE	8	19	62	63	64	99	99	29	89	69	2	R	١.
		_		_	_						,		;
		7	72	73	74	75	92	22	28	6/			
WIRE 1	8	81	82	83	84	85	98	28	88	68	90		
M W W		Г		┐		_		_		_			1
			91		8	83		85	92				Color of
Connector No. Connector Name Connector Color			96		97	88		66	9				ပိ
Connector No. Connector Nan Connector Colc		L		╧						_			1 -
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Signal Name	1	ı	I	ı	ı	I	ı	ı	I	ı	I	ı	I	I	I	ı	ı	ı	ı	I	
Color of Wire	Œ	7	>	ГG	۵	GR	5	_	7	>	>	В	ŋ	8	В	g	×	GR	Д	В	
Terminal No.	-	2	3	4	9	7	6	10	11	12	13	14	15	16	17	18	19	20	21	22	

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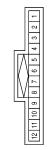
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Signal Name	ı	ı	ı	ı	ı	ı	ı	ı
Color of Wire	1	٦	Ь	Ь	Ь	Ь	ı	Ь
Terminal No.	5	9	2	8	6	10	11	12





Signal Name	ı	_
Color of Wire	Т	Т
Terminal No. Color of Wire	٦	2

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Connector No.	E3
nector Name	Connector Name BATTERY TERMINAL WITH FUSIBLE LINK
Connector Color BLACK	BLACK
H.S.	[o
Terminal No. Wire	color of Signal Name Wire

Terminal No. Color of Wire 51 L L 52 P S3 - 255 LG 55 C G S5 S6 S6 GG GG S6 GG S6 GG S6 S6 GG S6	Color of Wire	Signal Name H/LAMP LO LH H/LAMP LO RH FAST CHARGE VCM IGN REVERSE LAMP IGN ABS ECU IGN F/S RLY CONT
61	ı	_
62	۸	E-CACT/HAS IGN

Connector No.	E15
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Color WHITE	WHITE





Signal Name	1	1	H/LAMP HI RH	H/LAMP HI LH
Color of Wire	1	-	Y	9
Terminal No. Wire	47	48	49	20

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																						$\overline{}$
Signal Name		IGN SWITCH SIGNAL		ECU CONROL SYSTEM POWER			DLC BACKUP POWER	GND	STROKE SENSOR1 SIGNAL		STROKE SENSOR2 SIGNAL	BUZZER SIGNAL	DLC COMMUNICATION		CAN-L	CAN-H			CAN-L	CAN-H		
Color of Wire	1	۸	_	Г	-	1	W	В	\sim	_	В	W	W	_	Р	Γ	_	ı	W	Γ	_	ı
Terminal No.	25	56	27	28	59	08	31	32	33	34	35	36	37	38	68	40	41	42	43	44	45	46

Signal Name												STROKE SENSOR POWER	STROKE SENSOR GND	BUZZER POWER	DOOR SWITCH SIGNAL	DLC WAKE-UP		STOP LAMP SW
Color of Wire	ı	1	1	1	ı	ı	ı	-	1	1	1	M/L	0/7	В	GR	0	1	SB
Ferminal No.	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

	ELECTRICALLY-CDRIVEN INTELLIGENT BRAKE UNIT	X		38 39 40 41 42 43 44 45 46	21 22 23 24 25 26 27 28 29 30 7 8 9 10 11 12 13 14 15 16	Signal Name	MOTOR POWER	MOTOR POWER	ı	1	ı	1
E34		or BLACK		33 34 35 36 37	18 19 20 21 4 5 6 7	Color of Wire	>	>	-	ı	-	1
Connector No.	Connector Name	Connector Color	SH SH	31 32 33	1 2 17	Terminal No.	-	2	3	4	2	9

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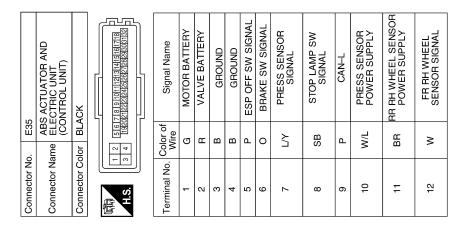
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Connector No.	E36
Connector Name	Connector Name STROKE SENSOR
Connector Color BLACK	BLACK





Terminal No.	Color of Wire	Signal Name
13	g	G SENSOR POWER SUPPLY
14	В	G SENSOR SIGNAL (+)
15	97	RR RH WHEEL SENSOR SIGNAL
16	>	POWER SWITCH ON
17	1	
18	1	
19	-	
20	_	CAN2-H
21	В	FR RH WHEEL SENSOR POWER SUPPLY
22	_	CAN-H
23	Œ	FR LH WHEEL SENSOR POWER SUPPLY
24	-	
25	Μ	CAN2-L
26	В	RR LH WHEEL SENSOR POWER SUPPLY
27	>	FR LH WHEEL SENSOR SIGNAL
28	æ	G SENSOR GND
29	\	G SENSOR SIGNAL (-)
30	ŋ	RR LH WHEEL SENSOR SIGNAL
31	I	
32	9	PRESS SENSOR GND



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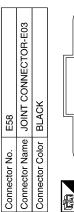
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Connector No.). E102	20
Connector Name		STOP LAMP SWITCH
Connector Color	_	WHITE
唇		3 4
H.S.		1 2
Terminal No.	Color of Wire	Signal Name
-	>	ı
2	SB	ı
3	ш	ı
5	Д	1







	Signal Name	I	ı	I	ı	ı	ı	1	ı	I	1	ı	-	1	-	-	-	I	-	1	I	I	1	ı	I
Color of	Wire	B/R	SHIELD	SHIELD	SHIELD	1	ı	1	1	1	B/R	SHIELD	SHIELD	×	W	W	W	W	W	G	G	ı	>	^	^
	l erminal No.	-	2	3	4	2	9	7	8	6	10	1	12	13	14	15	16	17	18	19	20	12	22	23	24

Connector No.	E44
Connector Name	Connector Name JOINT CONNECTOR-E02
Connector Color BLUE	BLUE
H.S.	12 11 10 9 8 7 6 5 4 3 2 1



Signal Name	1	1	ı	ı	1	ı	ı	1	ı	ı	1	ı
Color of Wire	SB	SB	SB	SB	1	SB	0	0	0	0	0	_
Terminal No.	-	2	3	4	2	9	7	80	6	10	Ξ	12

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Connector No.	o. E105			20	BB	I	28	_	ı
Connector Name WIRE TO WIRE	ame WIRE	TO WIRE		21	Ж	I	09	LG	ı
Connector Color	olor WHITE			22	В	ı	61	GR	ı
				23	LG	-	62	Μ	-
U	Į	9		24	В	1	63	SB	1
2	= =	31 41 51 61 71		22	8	-	64	SHIELD	1
	0	12 22 32 42 52 62 72 82 13 23 43 53 63 73 83	96	56	W	_	99	M	-
	_	24 44 54 64 74	92 97	27	В	ı	99	ŋ	ı
	3 8	35 45 55 65 75	93 88	28	O/L	ı	29	>	ı
	4 9 16	16 26 36 46 56 66 76 86	96 89	59	W	1	89	В	I
	5 10 18	28 38 48 58 68 78	g	31	В	1	69	В	-
		29 49	3	32	*	ı	70	BR	ı
		30 50 70 90		33	σ	ı	71	១	I
				34	BR	-	72	Ж	ı
Terminal No.	Color of	Signal Name		35	>	ı	73	В	I
,	Wire			36	0	1	74	0	ı
- (r .	1		37	_	ı	9/	_	I
N	_	1		38	SB	I	22	>	I
ო	BW	- (WIIHOU! RONT FOG LAMPS)		39	Ь	1	80	Ъ	I
c	٥	– (WITH LED		40	>	ı	81	SB	I
n		HEADLAMPS)		41	0	ı	83	GR	ı
4	PC	– (WITH LED HFADI AMPS)		42	Υ	I	84	7	I
		- (WITHOLIT FRONT		43	BR	I	82	0	I
4	B/W	FOG LAMPS)		44	≯	ı	98	BB	ı
9	B/B	1		45	თ	ı	88	В	I
7	Μ	-		46	Ь	_	89	W	-
6	ŋ	1		47	LG	ı	90	SHIELD	ı
10	В	_		47	В	-	91	\	ı
11	L	1		48	В	-	92	BR	1
12	\	-		49	٦	1	93	0	1
13	Μ	ı		20	g	ı	94	œ	I
14	æ	ı		51	*	ı	92	>	ı
15	В	1		52	0	-	96	Ь	-
16	G	1		54	В	ı	26	g	1
17	В	1		22	Я	ı	86	Μ	ı
18	0	-		26	Υ	1	66	0	ı
19	M/L	ı		22	>	I	100	SB	ı

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IE TO WIRE		25 26 27 28 29 30 31 32	Signal Name	ı	I	-	ı	I	I	-	-	-	_	_	1	-	I	1	1	I	ı
	<u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	22 23 24 2	Color of Wire	В	SHIELD	В	SB	Д	BR	GR	Р	L	G	В	Ν	LG	\	В	GR	Γ	Ь
Connector No. Connector Name	S S	1 2 3 4 5 17 18 19 20 21	Terminal No.	7	8	6	10	11	12	13	14	15	16	24	25	26	27	29	30	31	32

98	WIRE TO WIRE	WHITE	1234	Signal Name	ı	-	_	_
. E108		_		Color of Wire	>	>	SB	æ
Connector No.	Connector Name	Connector Color	雨 H.S.	Terminal No. Wire	-	2	3	4

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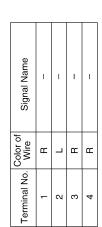
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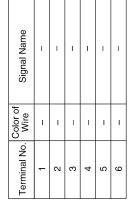
Connector No.	B8
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE



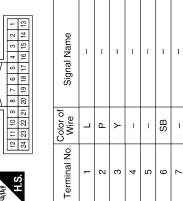
Signal Name	ı	ı	ı	ı	I	_	I	ı	_	I
Color of Wire	ı	1	BR	ı	ı	_	-	ı	_	-
Terminal No. Wire	7	80	6	10	=	12	13	14	15	16

Signal Name	1	1	1	1	-	1	1	ı	1	1	-	1	1	ı	1	1	-
Color of Wire	Ь	۸	\	Г	G	G	В	ГG	BR	G	В	\	В	Υ	M	SHIELD	_
Terminal No.	8	6	10	11	12	13	14	15	16	17	18	19	20	17	22	23	24

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	⋝		5	4
	0		4	13
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B26	WIRE TO WIRE	≥	က	
		7	2	6
o.	am	응	-	∞
or No.	or Name	or Color		



Connector No.	<u>.</u>		B7										
Connector Name WIRE TO WIRE	lam	Ф	≥	<u> </u>	-	0	Ī	<u> </u>	١				
Connector Color WHITE	용	_	∣≥	≒	쁘								
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Connector Name BRAKE POWER SUPPI BACKUP UNIT Connector Color WHITE	Connector No. B	B15
Connector Color WHITE	Connector Name B	BRAKE POWER SUPPI SACKUP UNIT
	Connector Color M	VHITE

	BRAKE POWER SUPPLY BACKUP UNIT	IIE	6 6 2	Signal Name	ı	1	ı	ı	1	I
		lor WH		Color of Wire	ш	В	ı	>	8	٦
Confrector No.	Connector Name	Connector Color WHITE	「所 H.S.	Terminal No.	-	2	3	4	5	9

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Signal Name	_	I	ı	_
Color of Wire	-	-	SB	-
Terminal No.	1	2	က	4

Revision: October 2013

ABFIA0807GB

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

DETAILS OF TROUBLE DIAGNOSIS FLOWCHART

1. COLLECT THE INFORMATION FROM THE CUSTOMER

It is also important to clarify customer concerns before starting the inspection. First of all, perform an interview utilizing <u>BR-73</u>, "<u>Diagnostic Work Sheet</u>" and reproduce the symptom as well as fully understand it. Depending on the situations, drive the vehicle with the customer and check the symptom.

CAUTION:

Customers are not professional. Never guess easily like "maybe the customer means that...," or "maybe the customer mentions this symptom".

>> GO TO 2.

2.CHECK SYMPTOM

Reproduce the symptom that is indicated by the customer, based on the information from the customer obtained by the interview. Also check that the symptom is not caused by fail-safe mode. Refer to BR-19. "Fail-Safe".

CAUTION:

When the symptom is caused by normal operation, fully inspect each portion and obtain the understanding of customer that the symptom is not caused by a malfunction.

>> GO TO 3.

3.perform self-diagnosis (1)

(P)With CONSULT

Perform self-diagnosis.

Is DTC detected?

YES >> Record or print self-diagnosis results and freeze frame data (FFD). GO TO 4.

NO >> GO TO 7.

4.PERFORM SELF-DIAGNOSIS (2)

(I) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION > Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. Α 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC detected? В YES >> Record or print self-diagnosis results. GO TO 5. NO >> GO TO 7. $\mathbf{5}.\mathsf{RECHECK}$ SYMPTOM (P)With CONSULT 1. Erase self-diagnosis results from the memory. D Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Е Never operate the vehicle and CONSULT while waiting. Perform DTC reproduction procedures for the system that is malfunctioning. NOTE: BR When multiple DTCs are detected, refer to BR-43, "DTC Inspection Priority Chart" and then determine the order for performing the diagnosis. Is DTC detected? YES >> GO TO 6. NO >> Check harness and connectors based on the information obtained by the interview. Refer to GI-53, "Intermittent Incident". Н 6.REPAIR OR REPLACE ERROR-DETECTED PART Repair or replace the part that is malfunctioning. Reconnect part or connector after repairing or replacing. Erase DTC from the memory when DTC is detected. Turn the power switch OFF to exit CONSULT. 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. >> GO TO 7. K 7.IDENTIFY ERROR-DETECTED SYSTEM BY SYMPTOM DIAGNOSIS Estimate which system is malfunctioning according to the possible symptoms based on symptom diagnosis and perform check. Can the malfunctioning part be identified? YES >> GO TO 8. M >> Check harness and connectors based on the information obtained by the interview. Refer to GI-NO 53. "Intermittent Incident". 8. FINAL CHECK Ν With CONSULT 1. Check the reference value for "BRAKE". Refer to BR-39, "Reference Value". 2. Perform the operation check. Check that the symptom is not reproduced under the same conditions as when the symptom is reproduced before.

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INFOID:0000000009256186

Is the symptom reproduced?

YES >> GO TO 3.

NO >> INSPECTION END

Diagnostic Work Sheet

Description

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

- In general, customers have their own criteria for a symptom. Therefore, it is important to understand the symptom and status well enough by interviewing the customer about the symptom carefully. To systemize all the information for the diagnosis, prepare the interview sheet referring to the interview points.
- In some cases, multiple conditions that appear simultaneously may cause a DTC to be detected.

INTERVIEW SHEET SAMPLE

Interview sheet									
Customer	MR/MS	Registration number				Initial year registration			
name		Vehicle type				VIN			
Storage date		Traction mo- tor				Mileage	km	(Mile)
		☐ Does not o	perate () fu	nction
		☐ Warning lar	mp for () turn	ns ON.
Symptom		☐ Noise				□ Vibration	1		
		☐ Other ()
First occurren	ce	☐ Recently	□ Oth	ner ()
Frequency of	occurrence	☐ Always	□ Unc	der a certai	n condition	s of So	metimes (time(s	s)/day)
		☐ Irrelevant							
Climate con-	Weather	□ Fine □	Cloud	□ Ra	in 🗆	Snow □ Ot	thers ()
ditions	Temperature	□ Hot □V	Varm	□ Cool	☐ Cold	☐ Temper	rature [Approx.	°C (°F)]
	Relative humidity	□ High		Moderate		□ Low			
Road conditio	ns	☐ Urban area ☐ Suburb area ☐ Highway ☐ Mountainous road (uphill or downhill) ☐ Rough road							
Operating condition, etc.		□Irrelevant □When tractic □ During drivi □ During decc □ During corr □ When steel	ng eleration nering (ri	☐ During ght curve o		on □ At o	constant speed o	driving	
Other conditions									
Memo									

ADDITIONAL SERVICE WHEN REPLACING ELECTRICALLY-DRIVEN INTELLI-GENT BRAKE UNIT

< BASIC INSPECTION >

ADDITIONAL SERVICE WHEN REPLACING ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Description INFOID:0000000009256187

When the electrically-driven intelligent brake unit was replaced, perform stroke sensor 0 point learning. <u>BR-76</u>, "Work Procedure".

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STROKE SENSOR 0 POINT LEARNING

< BASIC INSPECTION >

STROKE SENSOR 0 POINT LEARNING

Description INFOID:000000009256188

CAUTION:

Always perform stroke sensor 0 point learning before driving after any of the following operations is performed.

x: Necessary, -: Not necessary

Procedure	Stroke sensor 0 point learning
Removing/installing electrically-driven intelligent brake unit	×
Replacing electrically-driven intelligent brake unit	×
Removing/installing stroke sensor	×
Replacing stroke sensor	×
Removing/installing brake pedal	×
Replacing brake pedal	×
Adjusting brake pedal each height	×

Work Procedure

CAUTION:

Make sure to use CONSULT when performing stroke sensor 0 point learning. (It cannot be performed by any means other than CONSULT.)

1. VEHICLE CONDITION

- 1. Stop the vehicle.
- 2. Turn the power switch OFF to exit CONSULT.

>> GO TO 2.

2. CHECK 12V BATTERY

Check the 12V battery. Refer to PG-59, "Work Flow".

Is the inspection result normal?

YES >> GO TO 3.

NO

>> Charge or replace the 12V battery. Refer to <u>PG-59</u>, "How to Handle 12V Battery" or <u>PG-65</u>, "Removal and Installation". GO TO 3.

$\overline{3}$.checking installation conditions of brake components

Check the installation conditions of brake components.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts and GO TO 4.

4.CHECK BRAKE PEDAL

Check each brake pedal height. Refer to BR-514, "Inspection and Adjustment".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust each brake pedal height. Refer to <u>BR-514, "Inspection and Adjustment"</u>. GO TO 5.

5. PERFORM SELF-DIAGNOSIS

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

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STROKE SENSOR 0 POINT LEARNING < BASIC INSPECTION > Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. В 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. D **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. Е **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. BR 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is a malfunction detected? YES >> Check the DTC. Refer to BR-44, "DTC Index". GO TO 6. NO >> GO TO 6. O.PERFORM PEDAL STROKE SENSOR 0 POINT LEARNING With CONSULT Turn the power switch OFF to exit CONSULT and wait for 10 seconds or more. 2. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Start CONSULT and select "BRAKE", "WORK SUPPORT" and "STROKE SENSOR 0 POINT LEARNING" according to this order. **CAUTION:** Never depress brake pedal. Touch "START". Is either "COMPLETED" or "The operation is incomplete. Try again after confirming the operation condition." displayed? "COMPLETED">>Touch the "END". GO TO 7. "The operation is incomplete. Try again after confirming the operation condition.">>GO TO 2. .CHECK DATA MONITOR With CONSULT M Select "BRAKE", "DATA MONITOR" and "STROKE SEN 1 OUTPUT VOLT" according to this order. Check that this signal is within the specified value.

STROKE SEN 1 OUTPUT VOLT : 0.84 – 2.38 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 1.

Ö.ERASE SELF-DIAGNOSIS MEMORY

(P)With CONSULT

1. Turn the power switch OFF to exit CONSULT and wait for 10 seconds or more.

CAUTION:

Be sure to perform the operation above.

Turn the power switch ON without depressing the brake pedal. CAUTION:

OAUTION.

Never set the vehicle to READY.

3. Start CONSULT and erase self-diagnosis result of "BRAKE".

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STROKE SENSOR 0 POINT LEARNING

< BASIC INSPECTION >

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Are the memories erased?

YES >> INSPECTION END

NO >> Check the items indicated by the self-diagnosis.

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

C1A60 CONTROL MODULE

DTC Logic INFOID:0000000009256190

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A60	CONTROL MODULE	A malfunction is detected in the control module of electrically-driven intelligent brake unit (mismatch in comparison with internal power supply voltage).	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A60" detected?

YES >> Proceed to BR-79, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1.CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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INFOID:0000000009256191

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "Work Flow".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A60" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A60" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5.CHECK POWER SWITCH ON POWER SUPPLY

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage	
Connector Terminal			(Approx.)	
E34	26	Ground	0 V	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit	_	Voltage	
Connector Terminal			(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 8.

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< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDI	Continuity	
Connector Terminal		Connector	Connector Terminal	
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit		Continuity
Connector Terminal		_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A60" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)	
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)	
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

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< DTC/CIRCUIT DIAGNOSIS >

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A60" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	n intelligent brake unit	_	Continuity	
Connector Terminal		_	Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS > Never set the vehicle to READY. 4. Repeat step 3 two or more times. Α **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. D Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for Е 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. BR CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A60" detected? Н YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". Is the inspection result normal? YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) Ν (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Р Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A60" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A61 MOTOR

DTC Logic INFOID:0000000009256192

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1A61	MOTOR POWER SUPPLY	Power voltage of motor inside electrically-driven intelligent brake unit is as shown below. • Motor power voltage: 9 V ≥ Motor power voltage • Motor power voltage: 16 V ≥ Motor power voltage	Connector or harness Electrically-driven intelligent brake unit	

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1161" detected?

YES >> Proceed to BR-87, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

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INFOID:0000000009256193

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A61" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.

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< DTC/CIRCUIT DIAGNOSIS >

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A61" detected?

YES >> GO TO 5.

NO >> INSPECTION END

${f 5}$.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage	
Connector Terminal			(Approx.)	
E34	26	Ground	0 V	

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage	
Connector	Terminal		(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6. BR

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< DTC/CIRCUIT DIAGNOSIS >

6. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDM E/R		— Continuity	
Connector	Terminal	Connector Terminal		Continuity	
E34	26	E15	62	Existed	

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity	
Connector	Terminal		Continuity	
E34	26	Ground	Not existed	

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A61" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals

Electrically-driver	Voltage	
Connector	Terminal (Approx.	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-TERY POWER SUPPLY -".</u>
- NO >> Repair or replace error-detected parts and GO TO 10.

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10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A61" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery".</u>
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity	
Connector	Terminal	_	Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

C1A61 MOTOR < DTC/CIRCUIT DIAGNOSIS > Never set the vehicle to READY. 4. Repeat step 3 two or more times. Α **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. D Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for Е 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. BR CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A61" detected? Н YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39. "Reference Value". Is the inspection result normal? YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) Ν (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Р

Be sure to wait for 5 seconds or more after turning the power switch OFF.

3. Turn the power switch OFF to exit CONSULT.

 Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A61" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.
- NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A62 CONTROL MODULE

DTC Logic INFOID:0000000009256194

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1A62	CONTROL MODULE POWER SUPPLY	 Power voltage of control module that is integrated with electrically-driven intelligent brake unit is as shown below. Control module power voltage: 9 V ≥ Control module power voltage Control module power voltage: 16 V ≤ Control module power voltage After turning the power switch OFF, 12V battery terminals are disconnected with any door open (including back door). After turning the power switch OFF, 12V battery terminals are disconnected without waiting for 3 minutes or more after closing all doors (including back door). 	Harness or connector Electrically-driven intelligent brake unit	

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> Proceed to BR-95, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1.PERFORM SELF-DIAGNOSIS (1)

With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

Start CONSULT and perform "BRAKE" self-diagnosis.

"PAST" or "CRNT" shown in self-diagnosis results ("C1A62")?

YES ("PAST")>>GO TO 2.

YES ("CRNT")>>GO TO 6. >> INSPECTION END NO

2.INTERVIEW FROM THE CUSTOMER (1)

Check to see if there is a removal history of 12V battery or 12V battery terminals.

Is there a removal history of 12V battery or 12V battery terminals?

YES >> GO TO 3.

NO >> GO TO 6.

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${f 3.}$ INTERVIEW FROM THE CUSTOMER (2)

Check to see if there is a lighting history of the brake system warning lamp (yellow).

Is there a lighting history of the brake system warning lamp (yellow)?

YES >> GO TO 6. NO >> GO TO 4.

4.INTERVIEW FROM THE CUSTOMER (3)

Check to see if the customer has an experience of feeling unusual braking force (brake pedal operation).

Does the customer have an experience of feeling unusual braking force?

YES >> GO TO 6. NO >> GO TO 5.

5.PERFORM SELF-DIAGNOSIS (2)

With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> GO TO 6.

NO >> INSPECTION END [DTC "C1A62" is detected when12V battery terminals are disconnected after turning the power switch OFF with any door open (including back door) or without waiting 3 minutes after closing all doors (including back door).]

6.CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts and GO TO 7.

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< DTC/CIRCUIT DIAGNOSIS > 7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT 1. Connect 12V battery cable to negative terminal.

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK CONNECTOR TERMINALS

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts and GO TO 9.

9. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

5. Turn the power switch OFF to exit CONSULT.

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6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> GO TO 10.

NO >> INSPECTION END

10. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage	
Connector	Terminal		(Approx.)	
E34	26	Ground	0 V	

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage	
Connector	Terminal		(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 13. NO >> GO TO 11.

11. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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3.	Disconnect 12V battery cable from negative terminal. Refe	r to <u>BR-7</u>	, "Precaution f	or Removing	12V	Bat-
	tery".			_		

Check the 15A fuse (#62).

- Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	Electrically-driven intelligent brake unit		IPDM E/R		
Connector	Terminal	Connector Terminal		Continuity	
E34	26	E15	62	Existed	

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13.CHECK 12V BATTERY POWER SUPPLY

Turn the power switch OFF to exit CONSULT.

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2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage (Approx.)
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 14.

14. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 15.

15. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:

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Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> GO TO 16.

NO >> INSPECTION END

16.CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YFS >> GO TO 18.

NO >> Repair or replace error-detected parts and GO TO 17.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A62" detected?

YES >> GO TO 18.

NO >> INSPECTION END

18. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

19. PERFORM SELF-DIAGNOSIS (8)

(I) With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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< DTC/CIRCUIT DIAGNOSIS > Turn the power switch ON without depressing the brake pedal. **CAUTION:** Α Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. В 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A62" detected? YES >> GO TO 20. NO >> INSPECTION END 20.CHECK BCM SYSTEM D (P)With CONSULT Perform self-diagnosis for "BCM". Refer to BCS-23, "BCM: CONSULT Function (BCM - BCM)". Is any DTC detected? Е YES >> Check the DTC. Refer to BCS-48, "DTC Index". GO TO 21. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 21. PERFORM SELF-DIAGNOSIS (9) BR With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Н 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** L Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. N Is DTC "C1A62" detected? YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1A63 BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A63	BACKUP POWER SUPPLY	 A open is detected in the circuit between electrically-driven intelligent brake unit and brake power supply backup unit. A short circuit is detected in the circuit between electrically-driven intelligent brake unit and brake power supply backup unit. A short to power supply circuit is detected in the circuit between electrically-driven intelligent brake unit and brake power supply backup unit. 	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A63" detected?

YES >> Proceed to BR-105, "Diagnosis Procedure".

NO >> INSPECTION END

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terminals and connections.

Diagnosis Procedure INFOID:0000000009256197 Α 1. CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". D Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. Е 2.PERFORM SELF-DIAGNOSIS (1) With CONSULT BR 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Н 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A63" detected? N YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS 0 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-

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4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin

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5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A63" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery"</u>
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	<u>—</u>	(Approx.)
E34	26	Ground	0 V

< DTC/CIRCUIT DIAGNOSIS >

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	Electrically-driven intelligent brake unit		M E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	— — Continuity	
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A63" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage (Approx.)
Connector Terminal		
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).

< DTC/CIRCUIT DIAGNOSIS > Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F). Α 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F). 7. Check the 15A fuse (#75). 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75). Is the inspection result normal? YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -". NO >> Repair or replace error-detected parts and GO TO 10. D 10.perform self-diagnosis (4) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Е Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Н CAUTION: Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. K 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A63" detected? YES >> GO TO 11. NO >> INSPECTION END N 11. CHECK GROUND CIRCUIT Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

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< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A63" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference Value".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

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14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A63", "C1A6B", "C1A6C", "C1A6D", "C1AC8" or "C1AD0" detected?

YES (C1A63)>>GO TO 15.

- YES (C1A6B)>>Refer to BR-146, "Diagnosis Procedure".
- YES (C1A6C)>>Refer to BR-157, "Diagnosis Procedure".
- YES (C1A6D)>>Refer to BR-165, "Diagnosis Procedure".
- YES (C1AC8)>>Refer to BR-452, "Diagnosis Procedure". YES (C1AD0)>>Refer to BR-463, "Diagnosis Procedure".
- >> INSPECTION END NO

15. CHECK CIRCUIT BETWEEN ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT AND BRAKE POWER SUPPLY BACKUP UNIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	31	Ground	Not existed

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< DTC/CIRCUIT DIAGNOSIS >

- 7. Disconnect the brake power supply backup unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	Electrically-driven intelligent brake unit Brake		pply backup unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	31	B15	1	Existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace error-detected parts and GO TO 16.

16.CHECK BRAKE POWER SUPPLY BACKUP UNIT GROUND CIRCUIT

Check the continuity between brake power supply backup unit and ground.

Brake power supply backup unit			Continuity
Connector	Terminal		Continuity
B15	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace error-detected parts and GO TO 17.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A63" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A65 INCOMPLETE STROKE SENSOR

DTC Logic INFOID:0000000009256200

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A65	STROKE SENSOR SET	Stroke sensor 0 point learning has not been completed.	Stroke sensor 0 point learning has not been performed.

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check DTC DETECTION

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

(I) With CONSULT

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> Proceed to BR-113, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

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- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Disconnect the stroke sensor harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- Connect stroke sensor harness connector.

< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 5.

NO >> INSPECTION END

${f 5}.$ CHECK POWER SWITCH ON POWER SUPPLY

- Connect stroke sensor harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.

< DTC/CIRCUIT DIAGNOSIS >

15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
·	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
•	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

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NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	Electrically-driven intelligent brake unit		Continuity
Connector	Connector Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

C1A65 INCOMPLETE STROKE SENSOR < DTC/CIRCUIT DIAGNOSIS > **CAUTION:** Never set the vehicle to READY. Α Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. В 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** D Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. BR 11. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A65" detected? Н YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER. Refer to BR-39, "Reference Value". M Is the inspection result normal? YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation" Ν 14. PERFORM SELF-DIAGNOSIS (6) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. 0 CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.stroke sensor 0 point learning (1)

(E)With CONSULT

Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure".

<u>Is either "COMPLETED" or "The operation is incomplete. Try again after confirming the operation condition."</u> displayed?

"COMPLETED">>GO TO 16.

"The operation is incomplete. Try again after confirming the operation condition.">>GO TO 17.

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 17.

NO >> INSPECTION END

17. VISUALLY CHECK STROKE SENSOR

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< DTC/CIRCUIT DIAGNOSIS > Check the stroke sensor for damage. Α Is the inspection result normal? YES >> GO TO 18. NO >> Repair or replace error-detected parts and GO TO 21. 18. CHECK STROKE SENSOR INSTALLATION В Check the stroke sensor for looseness and disconnection. Is the inspection result normal? YES >> GO TO 19. NO >> Repair or replace error-detected parts and GO TO 21. 19. CHECK BRAKE PEDAL HEIGHT D Check each brake pedal height. Refer to BR-514, "Inspection and Adjustment". Is the inspection result normal? Е YES >> GO TO 20. >> Adjust each height. Refer to BR-514, "Inspection and Adjustment". GO TO 21. NO 20.STROKE SENOR $_{ m 0}$ POINT LEARNING (2) BR Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure". >> GO TO 21. 21.PERFORM SELF-DIAGNOSIS (8) (P)With CONSULT Н Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. N 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A65" detected? Р YES >> GO TO 22. NO >> INSPECTION END 22. CHECK STROKE SENSOR CIRCUIT (1) Turn the power switch OFF to exit CONSULT.

- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery".</u>
- 4. Disconnect the stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor harness connector and electrically-driven intelligent brake unit

Stroke s	sensor	Electrically-driven in	ntelligent brake unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		18	Existed
•	3		33	Not existed
•	3		19	Not existed
	3		35	Not existed
	2		18	Not existed
	2		33	Existed
	2		19	Not existed
E36	2	F24	35	Not existed
⊏30	1	E34	18	Not existed
	1	1	33	Not existed
	1		19	Existed
	1		35	Not existed
	4		18	Not existed
	4		33	Not existed
	4		19	Not existed
	4		35	Existed

Is the inspection result normal?

YES >> GO TO 23.

NO >> Repair or replace error-detected parts and GO TO 28.

23. CHECK STROKE SENSOR POWER SUPPLY

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

4. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Check the stroke sensor power voltage.

Stroke sensor		_	Voltage
Connector	Terminal		(Approx.)
E36	3	Ground	4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace error-detected parts and GO TO 24.

24. CHECK STROKE SENSOR CIRCUIT (2)

1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS >

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect stroke sensor harness connector.
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor and ground.

Stroke sensor			Continuity	
Connector	Terminal	_	Continuity	
E36	4	Ground	Not existed	

Is the inspection result normal?

YES >> GO TO 25.

NO >> Repair or replace error-detected parts and GO TO 25.

25. CHECK STROKE SENSOR RESISTANCE

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Connect stroke sensor harness connector.
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the resistance between stroke sensor connector pin terminals.

Electrically-driven intelligent brake unit Connector Terminal		Condition	Resistance	
		Condition		
E34	33 – 19	Gradually depress	Resistance value increases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	
L3 4	35 – 19	the brake pedal.	Resistance value decreases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	

Is the inspection result normal?

YES >> GO TO 28.

NO >> GO TO 26.

26.replace stroke sensor

Replace the stroke sensor. Refer to BR-523, "Removal and Installation".

>> GO TO 27.

27.stroke senor 0 point learning (3)

- Connect the electrically-driven intelligent brake unit harness connector.
- Perform stroke sensor 0 point learning. Refer to <u>BR-76</u>, "Work <u>Procedure"</u>.

>> GO TO 28.

28. PERFORM SELF-DIAGNOSIS (9)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A65" detected?

YES >> GO TO 22.

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A67 STOP LAMP SWITCH

DTC Logic INFOID:0000000009256204

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1A67	STOP LAMP SWITCH	Stop lamp switch signal is not input when brake pedal operates.	Harness or connector Stop lamp switch Electrically-driven intelligent brake unit	(

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

With CONSULT

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A67" detected?

YES >> Proceed to BR-125, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

${f 1}$.CHECK STOP LAMP FOR ILLUMINATION (1)

Depress the brake pedal to a depth of 100 mm (3.94 in) or more and maintain the brake depression for 5 seconds or more to check that the stop lamp turns ON.

Is the inspection result normal?

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INFOID:0000000009256205

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 4.

2.CHECK STOP LAMP SWITCH CIRCUIT (1)

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Test condition	Voltage
Connector	Terminal		rest condition	(Approx.)
E34	E34 24	Ground	Brake pedal is depressed.	10 – 16 V
	<u> </u>	Sibulia	Brake pedal is not depressed.	0 V

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	Electrically-driven intelligent brake unit		Test condition	Voltage
Connector	Terminal	_	rest condition	(Approx.)
E34	E34 24 Grou	Ground	Brake pedal is depressed.	10 – 16 V
LJ T	24	Ground	Brake pedal is not depressed.	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK STOP LAMP SWITCH CIRCUIT (2)

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect stop lamp switch harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and stop lamp switch harness connector.

Electrically-driven intelligent brake unit		Stop lamp switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	24	E102	2	Existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 4.

4.CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

C1A67 STOP LAMP SWITCH < DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". Is the inspection result normal? YES >> GO TO 5. NO >> Repair or replace error-detected parts and GO TO 5. 5.PERFORM SELF-DIAGNOSIS (1) D (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. Е **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. BR **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Н 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal.

- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A67" detected?

YES >> GO TO 6.

NO >> INSPECTION END

$oldsymbol{6}$.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Check that there is no malfunction in pin terminals and connection of stop lamp switch harness connector.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts and GO TO 7.

.PERFORM SELF-DIAGNOSIS (2)

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< DTC/CIRCUIT DIAGNOSIS >

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect stop lamp switch harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A67" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect stop lamp switch harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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Is the inspection result normal?

YES >> GO TO 11. NO >> GO TO 9.

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9.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	Electrically-driven intelligent brake unit		IPDM E/R	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10.perform self-diagnosis (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect stop lamp switch harness connector.
- 4. Connect 12V battery cable to negative terminal.
- 5. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

6. Repeat step 5 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 11. Turn the power switch OFF to exit CONSULT.

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< DTC/CIRCUIT DIAGNOSIS >

12. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

13. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 14. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A67" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11.CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 15.

NO >> GO TO 12.

12. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-YES TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 13.

13. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A67" detected?

YES >> GO TO 14.

NO >> INSPECTION END

14. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

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Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace error-detected parts and GO TO 15.

15. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A67" detected?

YES >> GO TO 16.

NO >> INSPECTION END

16. CHECK DATA MONITOR

With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 17.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

17. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

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Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. Α 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** В Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Е 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. BR 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A67" detected? YES >> GO TO 18. NO >> INSPECTION END 18. VISUALLY CHECK STOP LAMP SWITCH Check the stop lamp switch for damage. Is the inspection result normal? YES >> GO TO 19. NO >> Repair or replace error-detected parts and GO TO 28. 19. CHECK STOP LAMP SWITCH INSTALLATION Check the stop lamp switch for looseness and disconnection. Is the inspection result normal? YES >> GO TO 20. K NO >> Correct stop lamp switch installation or replace stop lamp switch. GO TO 28. 20.CHECK BRAKE PEDAL HEIGHT Check the each brake pedal height. Refer to BR-514, "Inspection and Adjustment". Is the inspection result normal? YES >> GO TO 21. NO >> Adjust each brake pedal height. Refer to BR-514, "Inspection and Adjustment". GO TO 28. $21.\mathsf{stroke}$ senor 0 point learning Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure". N >> GO TO 22. 0 22.CHECK STOP LAMP FOR ILLUMINATION (2) Depress the brake pedal to a depth of 100 mm (3.94 in) or more and maintain the brake depression for 5 seconds or more to check that the stop lamp turns ON. Р Is the inspection result normal? YES >> Repair or replace error-detected parts and GO TO 28. NO >> GO TO 23. 23.check stop lamp switch clearance

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Check the stop lamp clearance. Refer to BR-514, "Inspection and Adjustment".

Turn the power switch OFF to exit CONSULT.

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Is the inspection result normal?

YES >> GO TO 24.

NO >> Adjust stop lamp switch clearance. Refer to <u>BR-514</u>, "Inspection and Adjustment". GO TO 28.

24. CHECK STOP LAMP SWITCH CIRCUIT (3)

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Test condition	Voltage
Connector	Terminal	— Test condition		(Approx.)
E34 24		Ground	Brake pedal is depressed.	10 – 16 V
	24 Glound		Brake pedal is not depressed.	0 V

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit	_	Test condition	Voltage	
Connector	Terminal	_	rest condition	(Approx.)	
E34 24		Ground	Brake pedal is depressed.	10 – 16 V	
LJ4	24	Ground	Brake pedal is not depressed.	0 V	

Is the inspection result normal?

YES >> GO TO 26.

NO >> GO TO 25.

25. CHECK STOP LAMP SWITCH CIRCUIT (4)

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect stop lamp switch harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and stop lamp switch harness connector.

Electrically-driven in	Electrically-driven intelligent brake unit		Stop lamp switch	
Connector	Terminal	Connector Terminal		Continuity
E34	24	E102	2	Existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 26.

26. CHECK STOP LAMP SWITCH

Check the stop lamp switch. Refer to <u>BR-135</u>, "Component Inspection".

< DTC/CIRCUIT DIAGNOSIS > Is the inspection result normal? Α YES >> GO TO 27. NO >> Replace the stop lamp switch. Refer to BR-523, "Removal and Installation". GO TO 28. 27. CHECK STOP LAMP FOR ILLUMINATION (3) В Connect stop lamp switch harness connector. 2. Connect 12V battery cable to negative terminal. 3. Depress the brake pedal to a depth of 100 mm (3.94 in) or more and maintain the brake depression for 5 seconds or more to check that the stop lamp turns ON. Is the inspection result normal? YES >> GO TO 28. D NO >> Repair or replace error-detected parts and GO TO 28. 28. PERFORM SELF-DIAGNOSIS (7) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. BR Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Н Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. K 9. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A67" detected? YES >> GO TO 24. >> INSPECTION END NO Component Inspection Ν INFOID:0000000009256206 1. CHECK STOP LAMP SWITCH Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Р Never operate the vehicle and CONSULT while waiting. 3. Disconnect stop lamp switch harness connector.

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4. Check the continuity when stop lamp switch is operated.

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Stop lamp switch	Test condition	Continuity	
Terminal	rest condition	Continuity	
1 – 2	When stop lamp switch is released (when brake pedal is depressed)	Existed	
	When stop lamp switch is pressed (when brake pedal is released)	Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the stop lamp switch. Refer to <u>BR-523</u>, "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

C1A69 MOTOR

DTC Logic INFOID:000000009256207

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A69	MOTOR	The occurrence of abnormality in motor current (Q-axis current) of the electrically-driven intelligent brake unit.	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A69" detected?

YES >> Proceed to BR-137, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected part and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(II) With CONSULT

- Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A69" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3. CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected part and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A69" detected?

YES >> GO TO 5.

NO >> INSPECTION END

CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

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6. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	Electrically-driven intelligent brake unit		IPDM E/R	
Connector	Terminal	Connector Terminal		Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected part and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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Is DTC "C1A69" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace the error-detected parts and GO TO 10.

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10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A69" detected?

YES >> GO TO 4.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery".</u>
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace the error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:

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C1A69 MOTOR < DTC/CIRCUIT DIAGNOSIS > Never set the vehicle to READY. 4. Repeat step 3 two or more times. Α **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. D Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for Е 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. BR CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A69" detected? Н YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (1) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". Is the inspection result normal? YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) Ν (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Р Be sure to wait for 5 seconds or more after turning the power switch OFF.

Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal.

Turn the power switch OFF to exit CONSULT.

3 minutes or more with all doors closed.

CAUTION:

CAUTION:

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A69" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK DATA MONITOR (2)

(I) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order.
- Check the "MOTOR TEMPERATURE". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

"MOTOR TEMPERATURE" is 125 °C (257 °F) or more?

YES >> GO TO 16.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

16. CHECK MOTOR ROOM

Check for any locations of abnormal heating around the electrically-driven intelligent brake unit.

Are there any heated locations?

YES >> Perform diagnosis of the heated locations, and wait for the temperature to fall. GO TO 17.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

17.perform self-diagnosis (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

C1A69 MOTOR

< DTC/CIRCUIT DIAGNOSIS >	
9. Turn the power switch ON without depressing the brake pedal.	
CAUTION: Never set the vehicle to READY.	F
10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
11. Release brake pedal.	-
12. Start CONSULT and perform "BRAKE" self-diagnosis.	
<u>Is DTC "C1A69" detected?</u> YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u> , "Removal and installation".	
NO >> INSPECTION END	(
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< DTC/CIRCUIT DIAGNOSIS >

C1A6B BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A6B	POWER SUPPLY BACKUP UNIT	 Reception/transmission of an unspecified signal for 2 consecutive seconds or more via brake power supply backup communication line. Occurrence of a open in the wake up signal circuit of brake power supply backup unit. 	 Harness or connector Fuse Brake power supply backup unit Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> Proceed to <u>BR-146</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009256212

1. CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". 4. Check the 12V battery. Refer to PG-59, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4. BR

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< DTC/CIRCUIT DIAGNOSIS >

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery".</u>
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven in	telligent brake unit		Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

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6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	Electrically-driven intelligent brake unit		Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF. 6. Turn the power switch OFF to exit CONSULT.

7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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- Check the 15A fuse (#75).
- Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	n intelligent brake unit		Continuity	
Connector	Terminal	_	Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

>> GO TO 13.

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NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE", "DATE MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>. "Reference <u>Value"</u>.

Is the inspection result normal?

YES >> GO TO 14

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6B" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK BRAKE POWER SUPPLY BACKUP UNIT CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Disconnect the brake power supply backup unit harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven ir	elligent brake unit Brake power supply backup unit		Brake power supply backup unit		
Connector	Terminal	Connector	Terminal	Continuity	
	31	B15	1	Existed	
E34			4	Not existed	
E34		БЮ	5	Not existed	
			6	Not existed	

Check the continuity between brake power supply backup unit and ground.

Brake power	Brake power supply backup unit		Continuity
Connector	Terminal	_	Continuity
B15	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace error-detected parts and GO TO 16.

16. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- Check the voltage between brake power supply backup unit and ground.

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Brake power	supply backup unit		Voltage
Connector	Terminal	_	(Approx.)
B15	6	Ground	9 – 16 V

3. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Check the voltage between brake power supply backup unit and ground.

Brake power supply backup unit		_	Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 18.

NO >> GO TO 17.

17. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 15A fuse (#82).
- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Check the continuity and for short circuit between harness connector terminal 6 of brake power supply backup unit and 15A fuse (#82).

Is the inspection result normal?

YES >> GO TO 18.

NO >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

18. CHECK BRAKE POWER SUPPLY BACKUP UNIT COMMUNICATION CIRCUIT

Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven intelligent brake unit		Brake power supply backup unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	E34 37	B15	1	Not existed
E3/I			4	Not existed
⊏34			5	Existed
			6	Not existed

2. Check the continuity between brake power supply backup unit and ground.

Brake power supply backup unit		_	Continuity
Connector	Terminal	_	Continuity
B15	5	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 19.

NO >> Repair or replace error-detected parts. GO TO 19.

19. CHECK BRAKE POWER SUPPLY BACKUP UNIT WAKE UP CIRCUIT

1. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

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Electrically-driven intelligent brake unit		Brake power supply backup unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	4 22 B15	B15	1	Not existed
E34			4	Existed
E3 4			5	Not existed
			6	Not existed

2. Check the continuity between brake power supply backup unit and ground.

Brake power supply backup unit			Continuity
Connector	Terminal	_	Continuity
B15	4	Ground	Not existed

Is the inspection result normal?

YES >> Replace the brake power supply backup unit. Refer to <u>BR-536</u>, "Removal and Installation".

NO >> Repair or replace error-detected parts.

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< DTC/CIRCUIT DIAGNOSIS >

C1A6C BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A6C	POWER SUPPLY BACKUP UNIT VOLT	 No battery charge for 150 seconds or more after bringing the vehicle into READY state. Power voltage of brake power supply backup unit is as shown below. Power voltage of brake power supply backup unit: 9 V ≥ Power voltage of brake power supply backup unit Power voltage of brake power supply backup unit: 16 V ≤ Power voltage of brake power supply backup unit 	 Harness or connector Fuse Brake power supply backup unit Electrically-driven intelligent brake unit 12V battery is low

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6C" detected?

YES >> Proceed to BR-157, "Diagnosis Procedure".

NO >> INSPECTION END

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terminals and connections.

Diagnosis Procedure INFOID:0000000009256214 Α 1. CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". D Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. Е 2.PERFORM SELF-DIAGNOSIS (1) With CONSULT BR 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Н 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6C" detected? N YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS 0 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-

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4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin

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5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6C" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- Connect the brake power supply backup unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

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Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 15A fuse (#62).
- Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDN	M E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6C" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11. NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery"</u>.
- 4. Check the 60A fusible link (#F).

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- Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F). Α 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F). 7. Check the 15A fuse (#75). 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75). Is the inspection result normal? YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -". NO >> Repair or replace error-detected parts and GO TO 10. D 10.perform self-diagnosis (4) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Е Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Н CAUTION: Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. K 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6C" detected? YES >> GO TO 11. NO >> INSPECTION END N 11. CHECK GROUND CIRCUIT Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting.
- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

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< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Continuity
Connector Terminal		_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6C" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE", "DATE MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference <u>Value"</u>.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

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14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6C" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY

Connect 12V battery cable to negative terminal.

Check the voltage between brake power supply backup unit and ground.

Brake power supply backup unit		_	Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	9 – 16 V

3. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Check the voltage between brake power supply backup unit and ground.

Brake power supply backup unit		_	Voltage
Connector Terminal			(Approx.)
B15	6	Ground	9 – 16 V

Is the inspection result normal?

YES >> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation"</u>.

NO >> GO TO 16.

16. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

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Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fusible link (#82).
- 5. Check the continuity and for short circuit between harness connector terminal 6 of brake power supply backup unit and 15A fuse (#82).

Is the inspection result normal?

- YES >> Replace the brake power supply backup unit. Refer to <u>BR-536</u>, "Removal and Installation".
- NO >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-TERY POWER SUPPLY -"</u>.

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C1A6D BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic INFOID:0000000009256215

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A6D	POWER SUPPLY BACKUP UNIT OUTPUT	An internal malfunction (abnormal output circuit) is detected in brake power supply backup unit.	Harness or connector Brake power supply backup unit Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6D" detected?

YES >> Proceed to BR-165, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK 12V BATTERY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "Work Flow".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2. PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6D" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

f 4.PERFORM SELF-DIAGNOSIS (2)

< D	OTC/CIRCUIT DIAGNOSIS >	
<u>(P)</u>	With CONSULT	
1.		Α
2.	Connect the brake power supply backup unit harness connector.	
3. 4.	Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal.	
₹.	CAUTION:	В
	Never set the vehicle to READY.	
5.	Repeat step 4 two or more times.	
	CAUTION:	С
6	Be sure to wait for 5 seconds or more after turning the power switch OFF.	
6. 7.	Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
٠.	3 minutes or more with all doors closed.	D
	CAUTION:	
_	Never operate the vehicle and CONSULT while waiting.	_
8.	Turn the power switch ON without depressing the brake pedal.	Е
	CAUTION: Never set the vehicle to READY.	
9.	A A.A A	BR
	Turn the power switch OFF to exit CONSULT.	DΓ
	Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
	3 minutes or more with all doors closed.	G
	CAUTION: Never energies the vehicle and CONSULT while weiting	G
12	Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal.	
12.	CAUTION:	Н
	Never set the vehicle to READY.	
	Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
	Release brake pedal.	
	Start CONSULT and perform "BRAKE" self-diagnosis.	
	DTC "C1A6D" detected?	
	ES >> GO TO 5. O >> INSPECTION END	J
_		
<u>J.</u>	CHECK POWER SWITCH ON POWER SUPPLY	
1.	Connect the brake power supply backup unit harness connector.	K
	Connect 12V battery cable to negative terminal.	
3. 4.	Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
4.	3 minutes or more with all doors closed.	L
	CAUTION:	
	Never operate the vehicle and CONSULT while waiting.	
5.	Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-	M
e	tery".	
6. 7.	Disconnect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal.	
7. 8.	Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.	Ν
	G	

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Voltage
Connector	Connector Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6D" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

1. Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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< DTC/CIRCUIT DIAGNOSIS >

- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6D" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

< DTC/CIRCUIT DIAGNOSIS > NO >> Repair or replace error-detected parts and GO TO 12. 12. PERFORM SELF-DIAGNOSIS (5) Α (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. В Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е CAUTION: Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Н 11. Turn the power switch ON without depressing the brake pedal. Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6D" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR K With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. N 5. Start CONSULT and select "BRAKE", "DATE MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference Value". 0 Is the inspection result normal? YES NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY.

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2. Repeat step 1 two or more times.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6D" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK BRAKE POWER SUPPLY BACKUP UNIT CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Disconnect the brake power supply backup unit harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven i	ntelligent brake unit	Brake power supply backup unit		- Continuity	
Connector	Terminal	Connector Terminal			
E34		31		1	Existed
	31	B15	4	Not existed	
	31		5	Not existed	
	31		6	Not existed	

Check the continuity between brake power supply backup unit and ground.

Brake power	Brake power supply backup unit Connector Terminal		Continuity
Connector			Continuity
B15	1	Ground	Not existed

Is the inspection result normal?

YES >> Replace the brake power supply backup unit. Refer to BR-536, "Removal and Installation".

NO >> Repair or replace error-detected parts.

C1A6E EV SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

C1A6E EV SYSTEM

DTC Logic INFOID:000000009256217

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A6E	EV/HEV SYSTEM	Malfunction is detected in the VCM system.	Harness or connector VCM Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6E" detected?

YES >> Proceed to BR-173, "Diagnosis Procedure".

NO >> INSPECTION END

1.PERFORM VCM SELF DIAGNOSIS

Diagnosis Procedure

Is any DTC detected?

Start CONSULT and perform self-diagnosis for "EV/HEV". Refer to EVC-73, "CONSULT Function".

YES >> Check the DTC. Refer to EVC-102, "DTC Index".

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C1A6E EV SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2.

2.perform self-diagnosis (1)

(II) With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6E" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

C1A6E EV SYSTEM < DTC/CIRCUIT DIAGNOSIS > Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". В 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. **CAUTION:** D Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. Е 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6E" detected? YES >> GO TO 5. BR NO >> INSPECTION END ${f 5.}$ CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Н Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections. Is the inspection result normal? YES >> GO TO 7. NO >> Repair or replace error-detected parts and GO TO 6. **6.**PERFORM SELF-DIAGNOSIS (3) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

C1A6E EV SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6E" detected?

YES >> GO TO 7.

NO >> INSPECTION END

7.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	ntelligent brake unit	_	Voltage
Connector Terminal			(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 8.

8.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

C1A6E EV SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

	Electrically-driven in	telligent brake unit		Continuity	
	Connector	Terminal	_	Continuity	
	E34	26	Ground	Not existed	
	e inspection resul				
YE.	POWER S	rouble diagnosis for <u>SUPPLY -"</u> . replace error-detecte		upply. Refer to PG-30, "Wiring 9.	<u>Diagram - ON</u>
9. P	ERFORM SELF-	DIAGNOSIS (4)			
	ith CONSULT				
Ĭ.	Connect the elect	rically-driven intellige		s connector.	
		R harness connector. ery cable to negative			
١. '	Turn the power sv	vitch OFF to ON with		orake pedal.	
	CAUTION: Never set the vel	sials to DEADV			
	Repeat step 4 two				
	CAUTION:				
		or 5 seconds or mo vitch OFF to exit CON		power switch OFF.	
				lamp is OFF, get out of the vehic	le, and wait for
		with all doors closed	d.		
	CAUTION: Never operate th	e vehicle and CONS	SIII T while waiting		
	Turn the power sv	vitch ON without dep			
	CAUTION:	ciale to DEADV			
	Never set the vel Start CONSULT a	nd erase self-diagno	sis result of "BRAKE	-n	
0.	Turn the power sv	vitch OFF to exit CON	NSULT.		
		cluding back door), c with all doors closed		lamp is OFF, get out of the vehic	le, and wait for
	CAUTION:	with all doors closed	۵.		
		e vehicle and CONS			
	Turn the power sv CAUTION:	vitch ON without dep	ressing the brake pe	edal.	
	Never set the vel				
			in) or more, and ho	ld the position for 5 seconds or n	nore.
	Release brake pe Start CONSULT a	uai. nd perform "BRAKE"	self-diagnosis.		
	TC "C1A6E" detec	•	Ü		
YΕ					
NO					
U	CHECK 12V BAT	TERY POWER SUP	PLY		
		vitch OFF to exit COI		leave in OFF and a defilier while	1
		e with all doors closed		lamp is OFF, get out of the vehic	ie, and wait for
	Never operate th	e vehicle and CONS	SULT while waiting		- do - 401/ 5 /
	Disconnect 12V b <u>terv"</u> .	attery cable from neg	gative terminal. Ref	er to BR-7, "Precaution for Remo	oving 12V Bat-
	Disconnect the ele	ectrically-driven intell		ness connector.	
j	Connect 12V batte	anı aabla ta naqatiya	A =		

Electrically-drive	Voltage (Approx.)	
Connector Terminal		
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector Terminal		(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 11.

11. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

C1A6E EV SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6E" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK GROUND CIRCUIT

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector Terminal		_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace error-detected parts and GO TO 14.

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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C1A6E EV SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6E" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6E" or "U1000" detected?

YES ("C1A6E")>>GO TO 1.

C1A6E EV SYSTEM

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YES ("U1000")>>Refer to <u>BR-472</u>, "<u>Diagnosis Procedure</u>". NO >> INSPECTION END

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DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A6F	TCM/VCM SYSTEM	Malfunction is detected in the VCM system.	Harness or connector VCM Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6F" detected?

YES >> Proceed to BR-182, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009256220

1.PERFORM VCM SELF DIAGNOSIS

Start CONSULT and perform self-diagnosis for "EV/HEV". Refer to <u>EVC-73</u>, "CONSULT Function". Is any DTC detected?

YES >> Check the DTC. Refer to EVC-102, "DTC Index".

< DTC/CIRCUIT DIAGNOSIS > NO >> GO TO 2. 2.perform self-diagnosis (1) Α (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. В CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Е 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". BR 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Н Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6F" detected? YES >> GO TO 3. NO >> INSPECTION END 3. CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. L Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". 4. Check the 12V battery. Refer to PG-59, "Work Flow". Is the inspection result normal? YES >> GO TO 4. N NO >> Repair or replace error-detected parts and GO TO 4. 4.PERFORM SELF-DIAGNOSIS (2) (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Р Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for

3 minutes or more with all doors closed.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6F" detected?

YES >> GO TO 5.

NO >> INSPECTION END

CHECK CONNECTOR TERMINALS

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts and GO TO 6.

6.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6F" detected?

YES >> GO TO 7.

NO >> INSPECTION END

7.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit	_	Voltage
Connector Terminal			(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit	_	Voltage	
Connector Terminal			(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 8.

8. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery".</u>
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

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< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Continuity
Connector	Connector Terminal		
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. <u>PG-30, "Wiring Diagram ON POWER SUPPLY -".</u>
- NO >> Repair or replace error-detected parts GO TO 9.

9.PERFORM SELF-DIAGNOSIS (4)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6F" detected?

YES >> GO TO 10.

NO >> INSPECTION END

10.CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Voltage		
Connector Terminal		(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage		
Connector Terminal		(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 11.

11. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".

Check the 60A fusible link (#F).

- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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< DTC/CIRCUIT DIAGNOSIS >

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A6F" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	n intelligent brake unit		Continuity	
Connector Terminal		_	Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace error-detected parts and GO TO 14.

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

< DTC/CIRCUIT DIAGNOSIS > **CAUTION:** Never operate the vehicle and CONSULT while waiting. Α 11. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6F" detected? YES >> GO TO 15. NO >> INSPECTION END D 15.CHECK DATA MONITOR (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Е Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". Н Is the inspection result normal? YES >> GO TO 16. NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>. 16. PERFORM SELF-DIAGNOSIS (7) With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. N Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. Р **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A6F" or "U1000" detected?

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YES ("C1A6F")>>GO TO 1.

< DTC/CIRCUIT DIAGNOSIS >

YES ("U1000")>>Refer to <u>BR-472, "Diagnosis Procedure"</u>. NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A70 BRAKE CONTROL SYSTEM

DTC Logic INFOID:000000009256221

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A70	BRAKE CONTROL SYSTEM	Malfunction is detected in ABS actuator and electric unit (control unit) system.	Harness or connector ABS actuator and electric unit (control unit) Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A70" detected?

YES >> Proceed to BR-191, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

${f 1}$.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND CONTROL UNIT

Start CONSULT and perform self-diagnosis for "ABS". Refer to BRC-47, "CONSULT Function". Is any DTC detected?

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INFOID:0000000009256222

< DTC/CIRCUIT DIAGNOSIS >

YES >> Check the DTC. Refer to BRC-57, "DTC Index".

NO >> GO TO 2.

2.perform self-diagnosis (1)

(I) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A70" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "Work Flow".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

C1A70 BRAKE CONTROL SYSTEM < DTC/CIRCUIT DIAGNOSIS > **CAUTION:** Never operate the vehicle and CONSULT while waiting. Α 6. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. В Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. D **CAUTION:** Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. Е 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A70" detected? BR YES >> GO TO 5. NO >> INSPECTION END ${f 5.}$ CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Н **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections. Is the inspection result normal? YES >> GO TO 7. NO >> Repair or replace error-detected parts and GO TO 6. **6.**PERFORM SELF-DIAGNOSIS (3) K (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Ν 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Р

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A70" detected?

YES >> GO TO 7.

NO >> INSPECTION END

7.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit	_	Voltage
Connector Terminal			(Approx.)
E34	26	Ground	0 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Voltage
Connector Terminal			(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 8.

f 8.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 15A fuse (#62).
- Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIA	<u>CITOCIO '</u>			
Electrically-driven ir	ntelligent brake unit		Continuit	
Connector	Terminal		Continuity	
E34	26	Ground	Not existed	
s the inspection resul	t normal?			
	rouble diagnosis for SUPPLY -".	power ON power s	upply. Refer to PG-30, "W	
	replace error-detecte	ed parts and GO TO	9.	
PERFORM SELF-I		- · · · · · · ·		
With CONSULT	(.)			
	rically-driven intellige	ent brake unit harnes	s connector.	
 Connect IPDM E/ 	R harness connector			
	ery cable to negative witch OFF to ON with		oraka nadal	
CAUTION:	WILCIT OF T TO ON WILL	lout depressing the t	nake pedal.	_
Never set the ve				
Repeat step 4 two CAUTION:	o or more times.			
	or 5 seconds or mo	re after turning the	power switch OFF.	
	witch OFF to exit CO			. 1. 2. 1
	ncluding back door), (e with all doors close		amp is OFF, get out of the	venicle, and wait for
CAUTION:	with all doors close	u.		
	e vehicle and CON			
Turn the power sy CAUTION:	witch ON without dep	ressing the brake pe	edal.	
Never set the ve	hicle to READY.			
	and erase self-diagno			
 Turn the power sy Close all doors (ir 			amp is OFF, get out of the	vehicle, and wait for
	e with all doors close		amp is or it, get out or the	vernole, and wait for
CAUTION:		a		
2. Turn the power sw	ne vehicle and CONS			
CAUTION:	witch ON without dep	ressing the brake pe	dai.	
Never set the ve				
 Depress brake pe Release brake pe 		in) or more, and ho	ld the position for 5 second	is or more.
5. Start CONSULT a		' self-diagnosis.		
s DTC "C1A70" detec	-	_		
YES >> GO TO 10				
NO >> INSPECT				
$10.$ CHECK 12V BA $^{-}$	TTERY POWER SUF	PPLY		
	witch OFF to exit CO			
	ncluding back door), (e with all doors close		lamp is OFF, get out of the	vehicle, and wait for
CAUTION:	S WILL ALL GOOLS CIOSE	u.		
Never operate th	e vehicle and CON			D
 Disconnect 12V by tery". 	pattery cable from ne	gative terminal. Refe	er to BR-7, "Precaution for	Removing 12V Bat-
	ectrically-driven intell	igent brake unit harr	ness connector.	
Connect 12V batt	ery cable to negative	terminal.		
 Check the voltage 	e between the electric	cally-driven intelliger	t brake unit harness conne	ector terminals.

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< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 13. >> GO TO 11. NO

11. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A70" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK GROUND CIRCUIT

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace error-detected parts and GO TO 14.

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A70" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A70" or "U1000" detected?

YES ("C1A70")>>GO TO 1.

< DTC/CIRCUIT DIAGNOSIS >

YES ("U1000")>>Refer to <u>BR-472</u>, "<u>Diagnosis Procedure</u>". NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1A74 STEERING ANGLE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A74	ST ANG SEN CIRCUIT	Malfunction is detected in the steering angle sensor system.	 Harness or connector ABS actuator and electric unit (control unit) Steering angle sensor Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A74" detected?

YES >> Proceed to BR-200, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009256224

1. CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. 2.perform self-diagnosis (1) D (P)With CONSULT 1. Connect 12V battery cable to negative terminal. 2. Turn the power switch OFF to ON without depressing the brake pedal. Е **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. BR **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Н 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A74" detected? YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

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< DTC/CIRCUIT DIAGNOSIS >

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A74" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDN	/I E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A74" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES	>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-
	TERY POWER SUPPLY -"

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A74" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A74" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable from negative terminal
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

C1A74 STEERING ANGLE SENSOR < DTC/CIRCUIT DIAGNOSIS > Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". В 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** D Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. Е 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A74" or "U1000" detected? YES ("C1A74")>>GO TO 15. BR YES ("U1000")>>Refer to BR-472, "Diagnosis Procedure". NO >> INSPECTION END 15. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND CONTROL UNIT Start CONSULT and perform self-diagnosis for "ABS". Refer to BRC-47, "CONSULT Function". Is any DTC detected? YES >> Check the DTC. Refer to BRC-57, "DTC Index". GO TO 16. Н NO >> GO TO 16. 16. PERFORM SELF-DIAGNOSIS (7) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. K 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** L Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** M Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A74" detected?

YES >> GO TO 15.

NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1A80 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A80	CONTROL MODULE-2	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Sum of 3-phase current values is excessively large.) A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Sum of 3-phase current values is excessively small.)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A80" detected?

YES >> Proceed to BR-208, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282379

1. CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". Is the inspection result normal? >> GO TO 2. YES NO >> Repair or replace error-detected parts and GO TO 2. 2.perform self-diagnosis (1) D (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. Е **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. BR **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Н 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A80" detected? YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin

Is the inspection result normal?

terminals and connections.

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

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< DTC/CIRCUIT DIAGNOSIS >

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A80" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDN	/I E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	Electrically-driven intelligent brake unit		Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A80" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Electrically-driven intelligent brake unit Voltage	
Connector Terminal		(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11. NO >> GO TO 9.

9.check 12V battery power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES	>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-
	TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A80" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A80" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

C1A80 CONTROL MODULE	
< DTC/CIRCUIT DIAGNOSIS >	
Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. CAUTION:	Α
 Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: 	В
Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. CAUTION:	С
Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal.	D
12. Start CONSULT and perform "BRAKE" self-diagnosis.	Е
Is DTC "C1A80" detected? YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". NO >> INSPECTION END	BR
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< DTC/CIRCUIT DIAGNOSIS >

C1A81 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A81	CONTROL MODULE-3	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Power supply current is excessively large.) A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Power supply current is excessively small.)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A81" detected?

YES >> Proceed to <u>BR-216</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282328

1. CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. 2.perform self-diagnosis (1) D (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. Е **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. BR **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Н 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A81" detected? YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

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< DTC/CIRCUIT DIAGNOSIS >

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A81" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector Terminal			(Approx.)
E34	26	Ground	10 – 16 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDI	M E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Connector Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A81" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit Connector Terminal		Voltage	
		(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector Terminal		(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES	>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-
	TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A81" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit Connector Terminal		_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A81" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

C1A81 CONTROL MODULE	
< DTC/CIRCUIT DIAGNOSIS >	
Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. CAUTION:	Α
 Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. 	В
CAUTION: Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION:	С
Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal.	D
12. Start CONSULT and perform "BRAKE" self-diagnosis.	Е
Is DTC "C1A81" detected? YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". NO >> INSPECTION END	BR
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< DTC/CIRCUIT DIAGNOSIS >

C1A82 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A82	CONTROL MODULE-4	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal EEP-ROM)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A82" detected?

YES >> Proceed to BR-224, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282330

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Α Check the 12V battery. Refer to PG-59, "Work Flow". Is the inspection result normal? YES >> GO TO 2. В NO >> Repair or replace error-detected parts and GO TO 2. 2.PERFORM SELF-DIAGNOSIS (1) (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. D **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Е Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for BR 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Н 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A82" detected? YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. M Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Ν Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections. Is the inspection result normal? YES >> GO TO 5. Р NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A82" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit Connector Terminal		_	Voltage
		_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit Connector Terminal		_	Voltage
			(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A82" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A82" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A82" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A82" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.
- NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1A83 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A83	CONTROL MODULE-5	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal power supply in main CPU)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A83" detected?

YES >> Proceed to <u>BR-232</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282332

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and	
PG-59, "Work Flow". 4. Check the 12V battery. Refer to PG-59, "Work Flow".	Α
Is the inspection result normal?	
YES >> GO TO 2.	В
NO >> Repair or replace error-detected parts and GO TO 2.	Ь
2.PERFORM SELF-DIAGNOSIS (1)	
With CONSULT	С
1. Connect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal.	
CAUTION: Never set the vehicle to READY.	D
3. Repeat step 2 two or more times.	
CAUTION:	Е
Be sure to wait for 5 seconds or more after turning the power switch OFF.	
 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 	
3 minutes or more with all doors closed.	BR
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	G
Never set the vehicle to READY.	
 Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. 	Н
9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION: Nover apprate the vehicle and CONSULT while waiting	
Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	J
Never set the vehicle to READY.	0
11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.12. Release brake pedal.	
13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A83" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3.CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	M
Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.	
CAUTION:	
Never operate the vehicle and CONSULT while waiting.	Ν
3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-	
tery". 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	\circ
terminals and connections.	
Is the inspection result normal?	
YES >> GO TO 5.	Р
NO >> Repair or replace error-detected parts and GO TO 4.	

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.

4. PERFORM SELF-DIAGNOSIS (2)

3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A83" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7.perform self-diagnosis (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A83" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Electrically-driven intelligent brake unit	
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A83" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector Terminal			Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A83" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A83" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.
- NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1A84 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A84	CONTROL MODULE-6	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal power supply in sub CPU)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A84" detected?

YES >> Proceed to <u>BR-240</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282334

1.CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".	А
4. Check the 12V battery. Refer to PG-59, "Work Flow".	
Is the inspection result normal?	
YES >> GO TO 2.	В
NO >> Repair or replace error-detected parts and GO TO 2.	
2.PERFORM SELF-DIAGNOSIS (1)	
With CONSULT	C
1. Connect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal.	D
CAUTION:	D
Never set the vehicle to READY. 3. Repeat step 2 two or more times.	
CAUTION:	_
Be sure to wait for 5 seconds or more after turning the power switch OFF.	Е
4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	DD
3 minutes or more with all doors closed.	BR
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	G
Never set the vehicle to READY.	
7. Start CONSULT and erase self-diagnosis result of "BRAKE".	
8. Turn the power switch OFF to exit CONSULT.	Н
9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION: Never energies the vehicle and CONSULT while weiting	
Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	
Never set the vehicle to READY.	J
11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.	
13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A84" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3.CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	D. //
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	M
3 minutes or more with all doors closed.	
CAUTION:	h.1
Never operate the vehicle and CONSULT while waiting.	Ν
3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u> , " <u>Precaution for Removing 12V Bat-</u>	
tery". 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	
terminals and connections.	0
Is the inspection result normal?	
YES >> GO TO 5.	
NO >> Repair or replace error-detected parts and GO TO 4.	Р
Topan or replace offer activated parts and Go To T.	

(E)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.

4.PERFORM SELF-DIAGNOSIS (2)

3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A84" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	<u>—</u>	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7.perform self-diagnosis (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A84" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Electrically-driven intelligent brake unit	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Electrically-driven intelligent brake unit	
Connector Terminal		(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A84" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector Terminal			Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A84" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference</u> Value".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(E)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A84" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.
- NO >> INSPECTION END

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DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A85	CONTROL MODULE-7	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Malfunction in internal power supply circuit of Main CPU) A malfunction is detected in the control module of electrically-driven intelligent brake unit. [Abnormal analog-digital converter (AD converter) of main CPU] A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal RAM of main CPU) A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal ROM of main CPU)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A85" detected?

YES >> Proceed to BR-249, "Diagnosis Procedure".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure INFOID:0000000009282336 Α 1. CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". D Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. Е 2.PERFORM SELF-DIAGNOSIS (1) With CONSULT BR Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Н 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A85" detected? N YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS 0 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A85" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

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6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A85" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

< DTC/CIRCUIT DIAGNOSIS >

- Check the 15A fuse (#75).
- Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A85" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

>> GO TO 13.

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< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A85" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>. "Reference <u>Value"</u>.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A85" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".
- NO >> INSPECTION END

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DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A86	CONTROL MODULE-8	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Malfunction in internal power supply circuit of sub CPU) A malfunction is detected in the control module of electrically-driven intelligent brake unit. [Abnormal analog-digital converter (AD converter) of sub CPU] A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal RAM of sub CPU) A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal ROM of sub CPU)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A86" detected?

YES >> Proceed to BR-257, "Diagnosis Procedure".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

terminals and connections. Is the inspection result normal?

Diagnosis Procedure INFOID:0000000009282338 Α 1. CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". D Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. Е 2.PERFORM SELF-DIAGNOSIS (1) With CONSULT BR Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Н 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A86" detected? N YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS 0 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-

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Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A86" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

В

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Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

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6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDI	M E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A86" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

< DTC/CIRCUIT DIAGNOSIS >

- Check the 15A fuse (#75).
- Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A86" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

>> GO TO 13.

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NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A86" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>. "Reference <u>Value"</u>.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

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Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A86" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".
- NO >> INSPECTION END

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C1A87 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A87	CONTROL MODULE-9	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal sub CPU)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A87" detected?

YES >> Proceed to BR-264, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282341

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and	
PG-59, "Work Flow".	Α
4. Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u> .	
Is the inspection result normal? YES >> GO TO 2.	D
NO >> Repair or replace error-detected parts and GO TO 2.	В
2.PERFORM SELF-DIAGNOSIS (1)	
	С
With CONSULTConnect 12V battery cable to negative terminal.	
2. Turn the power switch OFF to ON without depressing the brake pedal.	
CAUTION:	D
Never set the vehicle to READY.	
 Repeat step 2 two or more times. CAUTION: 	_
Be sure to wait for 5 seconds or more after turning the power switch OFF.	Е
4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	BR
3 minutes or more with all doors closed. CAUTION:	DIX
Never operate the vehicle and CONSULT while waiting.	
6. Turn the power switch ON without depressing the brake pedal.	G
CAUTION:	
Never set the vehicle to READY. 7. Start CONSULT and erase self-diagnosis result of "BRAKE".	
8. Turn the power switch OFF to exit CONSULT.	Н
9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION: Never operate the vehicle and CONSULT while weiting	
Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	J
Never set the vehicle to READY.	J
11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A87" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3. CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	M
3 minutes or more with all doors closed.	
CAUTION:	Ν
 Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat- 	
tery".	
4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	0
terminals and connections.	
Is the inspection result normal?	

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A87" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Connector Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A87" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector Terminal		(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector Terminal		(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A87" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Connector Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A87" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(E)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A87" detected?

>> INSPECTION END

YES

NO

Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". Α Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. В **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. D 12. Start CONSULT and perform "BRAKE" self-diagnosis.

>> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

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< DTC/CIRCUIT DIAGNOSIS >

C1A88 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A88	CONTROL MODULE-10	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal main CPU)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A88" detected?

YES >> Proceed to BR-272, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282343

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".	Α
4. Check the 12V battery. Refer to PG-59, "Work Flow".	
Is the inspection result normal?	
YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2.	В
2.PERFORM SELF-DIAGNOSIS (1)	C
(a) With CONSULT	
 Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. 	
CAUTION:	D
Never set the vehicle to READY.	
 Repeat step 2 two or more times. CAUTION: 	Е
Be sure to wait for 5 seconds or more after turning the power switch OFF.	
4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.	BR
CAUTION:	
Never operate the vehicle and CONSULT while waiting.	
Turn the power switch ON without depressing the brake pedal.CAUTION:	G
Never set the vehicle to READY.	
7. Start CONSULT and erase self-diagnosis result of "BRAKE".	Н
 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 	
3 minutes or more with all doors closed.	
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	J
Never set the vehicle to READY.	J
 Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. Release brake pedal. 	
13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A88" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3. CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	M
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.	
CAUTION:	
Never operate the vehicle and CONSULT while waiting.	Ν
 Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>". 	
4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	\bigcirc
terminals and connections.	
Is the inspection result normal?	
YES >> GO TO 5.	Р
NO >> Repair or replace error-detected parts and GO TO 4.	
4 PERFORM SELF-DIAGNOSIS (2)	

4.PERFORM SELF-DIAGNOSIS (2)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A88" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	Electrically-driven intelligent brake unit		Voltage
Connector	Connector Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Connector Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A88" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A88" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit Connector Terminal		_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A88" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(E)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A88" detected?

>> INSPECTION END

YES

NO

Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". Α Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. В **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. D 12. Start CONSULT and perform "BRAKE" self-diagnosis.

>> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

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< DTC/CIRCUIT DIAGNOSIS >

C1A89 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A89	CONTROL MODULE-11	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal initial diagnosis) A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal motor current)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A89" detected?

YES >> Proceed to BR-280, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282345

1. CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. 2.perform self-diagnosis (1) D (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. Е **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. BR **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Н 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A89" detected? YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin

terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

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< DTC/CIRCUIT DIAGNOSIS >

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A89" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector Terminal			(Approx.)
E34	26	Ground	10 – 16 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDN	/I E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

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Never set the vehicle to READY.

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- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A89" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES	>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-
	TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A89" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A89" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

C1A89 CONTROL MODULE				
< [DTC/CIRCUIT DIAGNOSIS >			
5.	Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION:	А		
6. 7. 8.	Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT.	В		
9.	Never operate the vehicle and CONSULT while waiting.			
	Never set the vehicle to READY. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. Release brake pedal.	D		
12	Start CONSULT and perform "BRAKE" self-diagnosis.	Е		
Y	 DTC "C1A89" detected? 'ES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". INSPECTION END 	BR		
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C1A8A CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A8A	CONTROL MODULE-12	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal relay)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8A" detected?

YES >> Proceed to <u>BR-288</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282347

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".	А
4. Check the 12V battery. Refer to PG-59, "Work Flow".	
Is the inspection result normal?	
YES >> GO TO 2.	В
NO >> Repair or replace error-detected parts and GO TO 2.	
2.PERFORM SELF-DIAGNOSIS (1)	
With CONSULT	С
Connect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal.	D
Never set the vehicle to READY.	
Repeat step 2 two or more times.	
CAUTION: Be sure to wait for 5 accords or more after turning the newer switch OFF	Е
Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	DD
3 minutes of more with all doors closed.	BR
CAUTION: Never operate the vehicle and CONSULT while waiting.	
6. Turn the power switch ON without depressing the brake pedal.	G
CAUTION:	
Never set the vehicle to READY. 7. Start CONSULT and erase self-diagnosis result of "BRAKE".	
 Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. 	Н
9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION: Never operate the vehicle and CONSULT while waiting.	
10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	J
Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.	
13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A8A" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3.CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	M
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed. CAUTION:	
Never operate the vehicle and CONSULT while waiting.	Ν
3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-	
tery". 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	
4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.	0
Is the inspection result normal?	
YES >> GO TO 5.	Р
NO >> Repair or replace error-detected parts and GO TO 4.	'
4.PERFORM SELF-DIAGNOSIS (2)	

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8A" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit Connector Terminal			Voltage
		<u>—</u>	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDN	M E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	en intelligent brake unit — Continuity		
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7.perform self-diagnosis (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.

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15. Start CONSULT and perform "BRAKE" self-diagnosis.

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Is DTC "C1A8A" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Electrically-driven intelligent brake unit Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8A" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8A" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(E)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8A" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".
- NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1A8B CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A8B	CONTROL MODULE-13	A malfunction is detected in the control module of electrically-driven intelligent brake unit. (Abnormal CAN communication line)	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8B" detected?

YES >> Proceed to BR-296, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282349

1.CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".	А
4. Check the 12V battery. Refer to PG-59, "Work Flow".	, ,
Is the inspection result normal?	
YES >> GO TO 2.	В
NO >> Repair or replace error-detected parts and GO TO 2.	
2.PERFORM SELF-DIAGNOSIS (1)	
With CONSULT	C
1. Connect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:	D
Never set the vehicle to READY.	
3. Repeat step 2 two or more times.	
CAUTION:	Е
Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	BR
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal.	0
CAUTION:	G
Never set the vehicle to READY.	
 Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. 	Н
8. Turn the power switch OFF to exit CONSULT.9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	
Never set the vehicle to READY.	J
11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A8B" detected?	11
YES >> GO TO 3.	
NO >> INSPECTION END	L
3. CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	M
3 minutes or more with all doors closed.	
CAUTION:	Ν
Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u> , " <u>Precaution for Removing 12V Bat-</u>	14
tery".	
4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	0
terminals and connections.	
Is the inspection result normal?	
YES >> GO TO 5.	Р
NO >> Repair or replace error-detected parts and GO TO 4. 4. PERFORM SELE-DIAGNOSIS (2)	
+ PERFORM SELE-DIAGNOSIS (2)	

4.PERFORM SELF-DIAGNOSIS (2)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8B" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.check power switch on power supply circuit

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ectrically-driven intelligent brake unit IPDM E/R		IPDM E/R	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 7.

7.perform self-diagnosis (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1A8B" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-</u> TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8B" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8B" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(E)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY. Start CONSULT and erase self-dia

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A8B" detected?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".
- NO >> INSPECTION END

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C1A90 CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A90	POWER SUPPLY MODE	Power supply to the electrically-driven intelligent brake unit is switched from 12V battery to the brake power supply backup unit and the warning buzzer is activated.	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A90" detected?

YES >> Proceed to BR-304, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000009282380

1.PERFORM SELF-DIAGNOSIS (1)

With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Start CONSULT and perform "BRAKE" self-diagnosis.

"PAST" or "CRNT" shown in self-diagnosis results ("C1A90")?

YES ("PAST")>>GO TO 2.

YES ("CRNT")>>GO TO 6.

NO >> INSPECTION END

2.INTERVIEW FROM THE CUSTOMER (1)

Check to see if there is a removal history of 12V battery or 12V battery terminals.

Is there a removal history of 12V battery or 12V battery terminals?

YES >> GO TO 3.

NO >> GO TO 6.

${f 3}.$ INTERVIEW FROM THE CUSTOMER (2)

Check to see if there is a lighting history of the brake system warning lamp (yellow).

Is there a lighting history of the brake system warning lamp (yellow)?

YES >> GO TO 6.

NO >> GO TO 4.

4. INTERVIEW FROM THE CUSTOMER (3)

Check to see if the customer has an experience of feeling unusual braking force (brake pedal operation).

C1A90 CONTROL MODULE < DTC/CIRCUIT DIAGNOSIS > Does the customer have an experience of feeling unusual braking force? Α YES >> GO TO 6. NO >> GO TO 5. 5. PERFORM SELF-DIAGNOSIS (2) With CONSULT 1. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Н 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A90" detected? YES >> GO TO 6. NO >> INSPECTION END [DTC "C1A90" is detected when 12V battery terminals are disconnected after turning the power switch OFF with any door open (including back door) or without waiting 3 minutes after closing all doors (including back door).] **6.**CHECK 12V BATTERY 1. Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. M CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". N 4. Check the 12V battery. Refer to PG-59. "Work Flow". Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

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< DTC/CIRCUIT DIAGNOSIS >

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A90" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts and GO TO 9.

9. PERFORM SELF-DIAGNOSIS (4)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A90" detected?

YES >> GO TO 10.

NO >> INSPECTION END

10.CHECK POWER SWITCH ON POWER SUPPLY

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT. 2.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 11.

11. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven i	ally-driven intelligent brake unit IPDM E/R		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A90" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 14.

14. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".

Check the 60A fusible link (#F).

- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 15.

15. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A90" detected?

YES >> GO TO 16.

NO >> INSPECTION END

16. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity	
Connector	Terminal	<u>—</u>	Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace error-detected parts and GO TO 17.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

< DTC/CIRCUIT DIAGNOSIS > **CAUTION:** Never operate the vehicle and CONSULT while waiting. Α 11. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A90" detected? YES >> GO TO 18. NO >> INSPECTION END 18. CHECK DATA MONITOR D (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Е Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". Н Is the inspection result normal? YES >> GO TO 19. NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>. 19. PERFORM SELF-DIAGNOSIS (8) With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. N Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. Р **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A90" detected?

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YES

>> GO TO 20.

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NO >> INSPECTION END

20.CHECK BCM SYSTEM

(P)With CONSULT

Perform self-diagnosis for "BCM". Refer to BCS-23, "BCM: CONSULT Function (BCM - BCM)".

Is any DTC detected?

YES >> Check the DTC. Refer to BCS-48, "DTC Index". GO TO 21.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

21. PERFORM SELF-DIAGNOSIS (9)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- . Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A90" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A91 CONTROL MODULE

DTC Logic INFOID:0000000009282352

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1A91	IGNITION POWER SUPPLY	A power switch ON signal which is input from BCM via CAN communication is input without an input of a power switch ON signal which is directly input to the electrically-driven intelligent brake unit.	Flectrically-driven intelligent	

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check DTC DETECTION

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

(P)With CONSULT

Never set the vehicle to READY.

Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> Proceed to <u>BR-313</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

1.PERFORM SELF-DIAGNOSIS (1)

With CONSULT Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Start CONSULT and perform "BRAKE" self-diagnosis.

"PAST" or "CRNT" shown in self-diagnosis results ("C1A91")?

YES ("PAST")>>GO TO 2.

YES ("CRNT")>>GO TO 6.

>> INSPECTION END NO

2.INTERVIEW FROM THE CUSTOMER (1)

Check to see if there is a removal history of 12V battery or 12V battery terminals.

Is there a removal history of 12V battery or 12V battery terminals?

YES >> GO TO 3.

NO >> GO TO 6.

3.INTERVIEW FROM THE CUSTOMER (2)

Check to see if there is a lighting history of the brake system warning lamp (yellow).

Is there a lighting history of the brake system warning lamp (yellow)?

YES >> GO TO 6.

NO >> GO TO 4.

4.INTERVIEW FROM THE CUSTOMER (3)

Check to see if the customer has an experience of feeling unusual braking force (brake pedal operation).

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Does the customer have an experience of feeling unusual braking force?

YES >> GO TO 6. NO >> GO TO 5.

5. PERFORM SELF-DIAGNOSIS (2)

With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> GO TO 6.

NO >> INSPECTION END [DTC "C1A91" is detected when12V battery terminals are disconnected after turning the power switch OFF with any door open (including back door) or without waiting 3 minutes after closing all doors (including back door).]

6.CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK CONNECTOR TERMINALS

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts and GO TO 9.

9. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> GO TO 10.

NO >> INSPECTION END

10. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage	
Connector	Terminal		(Approx.)	
E34	26	Ground	0 V	

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage	
Connector	Terminal		(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 11.

11. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
E34	26	E15	62	Existed	

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Electrically-driven in		_	Continuity	
Connector	Terminal		<u> </u>	
E34	26	Ground	Not existed	
the inspection resul				
		power ON power s	upply.Refer to <u>PG-30, "Wiring Diagram - (</u>	<u>NC</u>
IO >> Repair or	<u>SUPPLY -"</u> . replace error-detecti	ed parts and GO TO	12	
2.PERFORM SEL		ca parto ana oo ro	12.	
	I -DIAGNOSIS (3)			
With CONSULT Connect the elect	2	(
	rically-driven intellige R harness connectol	ent brake unit harnes r	s connector.	
	ery cable to negative			
Turn the power sv		nout depressing the b	rake pedal.	
CAUTION:				
Never set the ve Repeat step 4 two				
Repeat step 4 two CAUTION:	of more times.			
	or 5 seconds or mo	ore after turning the	power switch OFF.	
Turn the power sv	witch OFF to exit CO	NSULT.		
			amp is OFF, get out of the vehicle, and wait	for
CAUTION:	e with all doors close	d.		
	e vehicle and CON	SULT while waiting		
		pressing the brake pe		
CAUTION:	·			
Never set the ve				
		osis result of "BRAKE	".	
	witch OFF to exit CO		amp is OFF, get out of the vehicle, and wait	for
	e with all doors close		amp to or 1, got out of the verticle, and wait	
CAUTION:				
		SULT while waiting		
CAUTION:	witch ON without dep	pressing the brake pe	dal.	
Never set the ve	hicle to READY.			
		in) or more, and ho	d the position for 5 seconds or more.	
. Release brake pe				
	and perform "BRAKE"	" selt-diagnosis.		
DTC "C1A91" detec	<u>-</u>			
'ES >> GO TO 1				
NO >> INSPECT				
3. CHECK 12V BA	TTERY POWER SUF	PPLY		
	witch OFF to exit CO			
			amp is OFF, get out of the vehicle, and wait	for
	e with all doors close	d.		
CAUTION: Never operate th	ne vehicle and CON	SULT while waiting		
			er to BR-7, "Precaution for Removing 12V B	at-
tery".	,	<u> </u>		
		ligent brake unit harr	ess connector.	
Connect 12V batt	ery cable to negative		t brake unit harness connector terminals	

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6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-drive	Electrically-driven intelligent brake unit	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 14.

14. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-TERY POWER SUPPLY -"</u>.
- NO >> Repair or replace error-detected parts and GO TO 15.

15. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> GO TO 16.

NO >> INSPECTION END

16.check ground circuit

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace error-detected parts and GO TO 17.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> GO TO 18.

NO >> INSPECTION END

18. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 19.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

19. PERFORM SELF-DIAGNOSIS (8)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A91" detected?

YES >> GO TO 20.

NO >> INSPECTION END 20.CHECK BCM SYSTEM (P)With CONSULT Perform self-diagnosis for "BCM". Refer to BCS-23. "BCM: CONSULT Function (BCM - BCM)". Is any DTC detected? YES >> Check the DTC. Refer to BCS-48. "DTC Index". GO TO 21. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533. "Removal and installation". 21.PERFORM SELF-DIAGNOSIS (9) (P)With CONSULT 1. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. CAUTION: 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle to READY. 5. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never set the vehicle to READY. 1. Unture power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 1. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 1. Londown and the vehicle of th	C1A91 CONTROL MODULE	
## Perform self-diagnosis for "BCM". Refer to BCS-23. "BCM: CONSULT Function (BCM - BCM)". Is any DTC detected? YES >> Check the DTC. Refer to BCS-48. "DTC Index". GO TO 21. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533. "Removal and installation". 21. PERFORM SELF-DIAGNOSIS (9) ## With CONSULT 1. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. CAUTION: Be sure to wait for 5 seconds or more after turning the power switch OFF. 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. Never set the vehicle and CONSULT while waiting. 9. Turn the power switch OFF to exit CONSULT. Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. CAUTION: Never set the vehicle to READY. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A91" detected? YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533. "Removal and installation". M	< DTC/CIRCUIT DIAGNOSIS >	
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BR-321 Revision: October 2013 2013 LEAF

C1A98 BRAKE POWER SUPPLY BACKUP UNIT

< DTC/CIRCUIT DIAGNOSIS >

C1A98 BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A98	BACKUP POWER SUPPLY-2	A malfunction is detected in the backup power supply circuit. (Abnormal relay in the control module of the electrically-driven intelligent brake unit)	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98" detected?

YES >> Proceed to <u>BR-322</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282381

1.CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

C1A98 BRAKE POWER SUPPLY BACKUP UNIT

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" at	nd
PG-59, "Work Flow". 4. Check the 12V battery. Refer to PG-59, "Work Flow".	Α
Is the inspection result normal?	
YES >> GO TO 2.	В
NO >> Repair or replace error-detected parts and GO TO 2.	
2.PERFORM SELF-DIAGNOSIS (1)	
With CONSULT	_ C
Connect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal.	Б
CAUTION: Never set the vehicle to READY.	D
3. Repeat step 2 two or more times.	
CAUTION:	Е
Be sure to wait for 5 seconds or more after turning the power switch OFF.	
4. Turn the power switch OFF to exit CONSULT.5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait to the complex of the vehicle.	or
3 minutes or more with all doors closed.	BR
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	G
Never set the vehicle to READY.	
7. Start CONSULT and erase self-diagnosis result of "BRAKE".	Н
8. Turn the power switch OFF to exit CONSULT.9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait to the complex personance of the complex personance.	
3 minutes or more with all doors closed.	O.
CAUTION:	
Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	
Never set the vehicle to READY.	J
11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A98" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3.CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait to	or
3 minutes or more with all doors closed. CAUTION:	
Never operate the vehicle and CONSULT while waiting.	Ν
3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery cable from negative terminal."	<u>at-</u>
tery".	in
 Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of preferring terminals and connections. 	oin O
 Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminal 	ıls
and connections.	Р
Is the inspection result normal?	1

YES >> GO TO 5.

>> Repair or replace error-detected parts and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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C1A98 BRAKE POWER SUPPLY BACKUP UNIT

< DTC/CIRCUIT DIAGNOSIS >

- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	<u>—</u>	(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11. NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES	>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-
	TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98", "C1A6B", "C1A6C", "C1A6D", "C1AC8" or "C1AD0" detected?

YES (C1A98)>>GO TO 15.

YES (C1A6B)>>Refer to BR-146, "Diagnosis Procedure".

YES (C1A6C)>>Refer to <u>BR-157</u>, "<u>Diagnosis Procedure</u>". YES (C1A6D)>>Refer to <u>BR-165</u>, "<u>Diagnosis Procedure</u>".

YES (C1AC8)>>Refer to BR-452, "Diagnosis Procedure".

YES (C1AD0)>>Refer to BR-463, "Diagnosis Procedure".

>> INSPECTION END

15.check circuit between electrically-driven intelligent brake unit and brake POWER SUPPLY BACKUP UNIT

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	n intelligent brake unit		Continuity	
Connector	Terminal		Continuity	
E34	32	Ground	Existed	

Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	31	Ground	Not existed

Disconnect the brake power supply backup unit harness connector.

Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	itelligent brake unit	Brake power supply backup unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	31	B15	1	Existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace error-detected parts and GO TO 16.

16.CHECK BRAKE POWER SUPPLY BACKUP UNIT GROUND CIRCUIT

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Check the continuity between brake power supply backup unit and ground.

Brake power supply backup unit			Continuity
Connector	Terminal		Continuity
B15	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace error-detected parts and GO TO 17.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A98" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1A99 BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic INFOID:000000009282357

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A99	BACKUP POWER SUPPLY-3	A malfunction is detected in the backup power supply circuit. (Abnormal diode in the control module of the electrically-driven intelligent brake unit)	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A99" detected?

YES >> Proceed to <u>BR-331</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A99" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A99" detected?

YFS >> GO TO 5.

NO >> INSPECTION END

$oldsymbol{5}$.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A99" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Electrically-driven intelligent brake unit	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
•	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Electrically-driven intelligent brake unit	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

$\mathbf{9}$.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A99" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	Electrically-driven intelligent brake unit		Continuity	
Connector	Terminal		Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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C1A99 BRAKE POWER SUPPLY BACKUP UNIT < DTC/CIRCUIT DIAGNOSIS > Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. В **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. D 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Е Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. BR CAUTION: Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. Н 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1A99" detected? YES >> GO TO 13. >> INSPECTION END NO 13. CHECK DATA MONITOR (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference M Value". Is the inspection result normal? Ν YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14.perform self-diagnosis (6) With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Р

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

<u>Is DTC "C1A99", "C1A6B", "C1A6C", "C1A6D", "C1AC8" or "C1AD0" detected?</u>

YES (C1A99)>>GO TO 15.

YES (C1A6B)>>Refer to BR-146, "Diagnosis Procedure".

YES (C1A6C)>>Refer to BR-157, "Diagnosis Procedure". YES (C1A6D)>>Refer to BR-165, "Diagnosis Procedure".

YES (C1AC8)>>Refer to BR-452, "Diagnosis Procedure".

YES (C1AD0)>>Refer to BR-463, "Diagnosis Procedure".

>> INSPECTION END

15. CHECK CIRCUIT BETWEEN ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT AND BRAKE POWER SUPPLY BACKUP UNIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-drive	Electrically-driven intelligent brake unit		Continuity
Connector	Terminal	_	Continuity
E34	31	Ground	Not existed

- Disconnect the brake power supply backup unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven intelligent brake unit		Brake power supply backup unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	31	B15	1	Existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace error-detected parts and GO TO 16.

16.CHECK BRAKE POWER SUPPLY BACKUP UNIT GROUND CIRCUIT

nook the continuity	between brake power	supply backup unit	and ground.	
Brake power su	pply backup unit		On ation site.	
Connector	Terminal	_	Continuity	
B15	2	Ground	Existed	
the inspection resures the inspection resures (YES >> GO TO 1 NO >> Repair of Perform SEL	7. r replace error-detecte	d parts and GO TO	17.	
Connect the brake Connect 12V bat	trically-driven intelligen te power supply backu tery cable to negative witch OFF to ON witho	p unit harness con terminal.	nector.	
Never set the verage Repeat step 4 two CAUTION: Be sure to wait	ehicle to READY. To or more times. For 5 seconds or more witch OFF to exit CON		e power switch OFF.	
Close all doors (i 3 minutes or mor CAUTION: Never operate t Turn the power s		heck that the room l. SULT while waiting		e vehicle, and wait for
Start CONSULT	ehicle to READY. and erase self-diagnos witch OFF to exit CON		≣".	
 Close all doors (i 		heck that the room	lamp is OFF, get out of the	e vehicle, and wait for
Never operate to 2. Turn the power sometimes CAUTION:	he vehicle and CONS witch ON without depr			
 Depress brake p Release brake p 		•	old the position for 5 secon	ds or more.
DTC "C1A99" dete	cted?	G	it. Refer to <u>BR-533, "Remo</u>	and installation"

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< DTC/CIRCUIT DIAGNOSIS >

C1A9A BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1A9A	BACKUP POWER SUPPLY-4	A malfunction is detected in the backup power supply circuit. (Abnormal initial diagnosis of the control module of the electrically-driven intelligent brake unit)	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A" detected?

YES >> Proceed to <u>BR-340</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282360

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".	А
4. Check the 12V battery. Refer to PG-59, "Work Flow".	\wedge
Is the inspection result normal?	
YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2.	В
2.PERFORM SELF-DIAGNOSIS (1)	
	С
With CONSULTConnect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal.	
CAUTION: Never set the vehicle to READY.	D
3. Repeat step 2 two or more times.	
CAUTION:	Е
Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	BR
3 minutes or more with all doors closed. CAUTION:	DI
Never operate the vehicle and CONSULT while waiting.	
Turn the power switch ON without depressing the brake pedal. CAUTION:	G
Never set the vehicle to READY.	
7. Start CONSULT and erase self-diagnosis result of "BRAKE".	Н
8. Turn the power switch OFF to exit CONSULT.9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION: Never operate the vehicle and CONSULT while waiting.	
10. Turn the power switch ON without depressing the brake pedal.	
CAUTION: Never set the vehicle to READY.	J
11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.	17
13. Start CONSULT and perform "BRAKE" self-diagnosis.	K
Is DTC "C1A9A" detected? YES >> GO TO 3.	
NO >> INSPECTION END	L
3.CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	M
2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.	
CAUTION:	
Never operate the vehicle and CONSULT while waiting.	Ν
3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u> , " <u>Precaution for Removing 12V Battery</u> ".	
4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.	0
 Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals 	
and connections.	Р
Is the inspection result normal?	
YES >> GO TO 5.	

YES >> GO TO 5. NO >> Repair or replace error-detected parts and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage (Approx.)
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11. NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES	>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-
	TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference <u>Value"</u>.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A", "C1A6B", "C1A6C", "C1A6D", "C1AC8" or "C1AD0" detected?

YES (C1A9A)>>GO TO 15.

YES (C1A6B)>>Refer to BR-146, "Diagnosis Procedure".

YES (C1A6C)>>Refer to <u>BR-157</u>, "<u>Diagnosis Procedure</u>". YES (C1A6D)>>Refer to <u>BR-165</u>, "<u>Diagnosis Procedure</u>".

YES (C1AC8)>>Refer to BR-452, "Diagnosis Procedure".

YES (C1AD0)>>Refer to BR-463, "Diagnosis Procedure".

>> INSPECTION END

15.check circuit between electrically-driven intelligent brake unit and brake POWER SUPPLY BACKUP UNIT

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	31	Ground	Not existed

Disconnect the brake power supply backup unit harness connector.

8. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	itelligent brake unit	Brake power supply backup unit		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	31	B15	1	Existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace error-detected parts and GO TO 16.

16.CHECK BRAKE POWER SUPPLY BACKUP UNIT GROUND CIRCUIT

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< DTC/CIRCUIT DIAGNOSIS >

Check the continuity between brake power supply backup unit and ground.

Brake power supply backup unit			Continuity
Connector	Terminal	_	Continuity
B15	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace error-detected parts and GO TO 17.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1A9A" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1AA0 STROKE SENSOR

DTC Logic INFOID:000000009256198

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1AA0	STROKE SENSOR-2	Open circuit is detected in stroke sensor circuit. Short circuit is detected in stroke sensor circuit. Malfunction is detected in stroke sensor circuit.	Harness or connector Stroke sensor Electrically-driven intelligent brake unit	C

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> Proceed to BR-349, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

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< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- Disconnect the stroke sensor harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect stroke sensor harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YFS >> GO TO 5.

NO >> INSPECTION END

$oldsymbol{5}$.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect stroke sensor harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
E34	26	E15	62	Existed	

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Continuity	
Connector	Terminal		Continuity	
E34	26	Ground	Not existed	

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)		
Connector	Connector Terminal		
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

$\mathbf{9}$.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	n intelligent brake unit		Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

C1AA0 STROKE SENSOR < DTC/CIRCUIT DIAGNOSIS > Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. В **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. D 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Е Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. BR CAUTION: Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. Н 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA0" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER. Refer to BR-39, "Reference M Value". Is the inspection result normal? Ν YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation" 14.perform self-diagnosis (6) With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.stroke sensor 0 point learning (1)

(P)With CONSULT

Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

<u>Is either "COMPLETED" or "The operation is incomplete. Try again after confirming the operation condition."</u> <u>displayed?</u>

"COMPLETED">>GO TO 16.

"The operation is incomplete. Try again after confirming the operation condition.">>GO TO 17.

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> GO TO 17.

NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS > 17. VISUALLY CHECK STROKE SENSOR Check the stroke sensor for damage. Is the inspection result normal? YES >> GO TO 18. В NO >> Repair or replace error-detected parts and GO TO 21. 18. CHECK STROKE SENSOR INSTALLATION Check the stroke sensor for looseness and disconnection. Is the inspection result normal? YES >> GO TO 19. D NO >> Repair or replace error-detected parts and GO TO 21. 19. CHECK BRAKE PEDAL HEIGHT Check each brake pedal height. Refer to BR-514, "Inspection and Adjustment". Is the inspection result normal? YES >> GO TO 20. BR >> Adjust each height. Refer to BR-514, "Inspection and Adjustment". GO TO 21. NO 20.stroke senor $_{ m 0}$ point learning (2) Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure". >> GO TO 21. 21. PERFORM SELF-DIAGNOSIS (8) Н (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. N **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. P 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA0" detected? YES >> GO TO 22. NO >> INSPECTION END

22.CHECK STROKE SENSOR CIRCUIT (1) Turn the power switch OFF to exit CONSULT.

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< DTC/CIRCUIT DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between stroke sensor harness connector and electrically-driven intelligent brake unit.

Stroke s	sensor	Electrically-driven in	ntelligent brake unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		18	Existed
•	3		33	Not existed
•	3		19	Not existed
	3		35	Not existed
	2		18	Not existed
	2	E34	33	Existed
	2		19	Not existed
E36	2		35	Not existed
E30	1		18	Not existed
	1		33	Not existed
	1		19	Existed
	1		35	Not existed
	4		18	Not existed
	4		33	Not existed
	4		19	Not existed
•	4		35	Existed

Is the inspection result normal?

YES >> GO TO 23.

NO >> Repair or replace error-detected parts and GO TO 28.

23. CHECK STROKE SENSOR POWER SUPPLY

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.
 CAUTION:

Never set the vehicle to READY.

5. Check the stroke sensor power voltage.

Strol	ke sensor	_	Voltage	
Connector	Terminal		(Approx.)	
E36	3	Ground	4.75 – 5.25 V	

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace error-detected parts and GO TO 24.

< DTC/CIRCUIT DIAGNOSIS >

$\overline{24}$.check stroke sensor circuit (2)

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor and ground.

Strok	ke sensor	_	Continuity
Connector	Terminal	_	
E36	4	Ground	Existed

Is the inspection result normal?

YES >> GO TO 25.

NO >> Repair or replace error-detected parts and GO TO 25.

25. CHECK STROKE SENSOR RESISTANCE

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Connect stroke sensor harness connector.
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the resistance between stroke sensor connector pin terminals.

Electrically-driven i	ntelligent brake unit	Condition	Resistance	
Connector	Terminal	Condition	Resistance	
E34	33 – 19	Gradually depress the brake pedal.	Resistance value increases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	
L0 4	35 – 19		Resistance value decreases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	

Is the inspection result normal?

YES >> GO TO 28.

NO >> GO TO 26.

26.REPLACE STROKE SENSOR

Replace the stroke sensor. Refer to BR-523, "Removal and Installation".

>> GO TO 27.

27.stroke senor 0 point learning (3)

- Connect the electrically-driven intelligent brake unit harness connector.
- Perform stroke sensor 0 point learning. Refer to <u>BR-76</u>, "Work <u>Procedure"</u>.

>> GO TO 28.

28.perform self-diagnosis (9)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA0" detected?

YES >> GO TO 22.

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1AA1 STROKE SENSOR

DTC Logic INFOID:0000000009282361

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1AA1	STROKE SENSOR-3	An internal malfunction is detected in the stroke sensor. (With fluctuations in output voltage of the stroke sensor)	Harness or connector Stroke sensor Electrically-driven intelligent brake unit	C

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

(P)With CONSULT

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

3. Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> Proceed to BR-361, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

${f 1}$.CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

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< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3. CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- Disconnect the stroke sensor harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect stroke sensor harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YFS >> GO TO 5.

NO >> INSPECTION END

$oldsymbol{5}$.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect stroke sensor harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage
Connector Terminal			(Approx.)
E34	26	Ground	0 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	telligent brake unit	IPDI	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit	_	Continuity
Connector	Terminal		Continuity
E34 26		Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage		
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	(Approx.)	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

$\mathbf{9}$.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-drive	n intelligent brake unit		Continuity
Connector	Terminal		Continuity
E34 32		Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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C1AA1 STROKE SENSOR < DTC/CIRCUIT DIAGNOSIS > Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. В **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. D 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Е Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. BR CAUTION: Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. Н 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA1" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER. Refer to BR-39, "Reference M Value". Is the inspection result normal? Ν YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation" 14.perform self-diagnosis (6)

With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.stroke sensor 0 point learning (1)

(P)With CONSULT

Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

<u>Is either "COMPLETED" or "The operation is incomplete. Try again after confirming the operation condition."</u>
<u>displayed?</u>

"COMPLETED">>GO TO 16.

"The operation is incomplete. Try again after confirming the operation condition.">>GO TO 17.

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> GO TO 17.

NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS > 17. VISUALLY CHECK STROKE SENSOR Check the stroke sensor for damage. Is the inspection result normal? YES >> GO TO 18. В NO >> Repair or replace error-detected parts and GO TO 21. 18. CHECK STROKE SENSOR INSTALLATION Check the stroke sensor for looseness and disconnection. Is the inspection result normal? YES >> GO TO 19. D NO >> Repair or replace error-detected parts and GO TO 21. 19. CHECK BRAKE PEDAL HEIGHT Check each brake pedal height. Refer to BR-514, "Inspection and Adjustment". Is the inspection result normal? YES >> GO TO 20. BR NO >> Adjust each height. Refer to BR-514, "Inspection and Adjustment". GO TO 21. 20.stroke senor $_{ m 0}$ point learning (2) Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure". >> GO TO 21. 21. PERFORM SELF-DIAGNOSIS (8) Н (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. N **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. P 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA1" detected? YES >> GO TO 22. NO >> INSPECTION END

22.CHECK STROKE SENSOR CIRCUIT (1)1. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between stroke sensor harness connector and electrically-driven intelligent brake unit.

Stroke s	ensor	Electrically-driven ir	ntelligent brake unit	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	3		18	Existed	
	3		33	Not existed	
	3		19	Not existed	
	3		35	Not existed	
	2		18	Not existed	
	2	E34	33	Existed	
	2		19	Not existed	
E36	2		35	Not existed	
E30	1		18	Not existed	
	1		33	Not existed	
	1		19	Existed	
	1		35	Not existed	
	4		18	Not existed	
	4		33	Not existed	
	4		19	Not existed	
	4		35	Existed	

Is the inspection result normal?

YES >> GO TO 23.

NO >> Repair or replace error-detected parts and GO TO 28.

23. CHECK STROKE SENSOR POWER SUPPLY

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.
 CAUTION:

Never set the vehicle to READY.

5. Check the stroke sensor power voltage.

Strol	ke sensor		Voltage
Connector	Terminal		(Approx.)
E36	3	Ground	4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace error-detected parts and GO TO 24.

< DTC/CIRCUIT DIAGNOSIS >

$\overline{24}$.check stroke sensor circuit (2)

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor and ground.

Strol	ke sensor		Continuity	
Connector	Terminal			
E36	4	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 25.

NO >> Repair or replace error-detected parts and GO TO 25.

25. CHECK STROKE SENSOR RESISTANCE

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Connect stroke sensor harness connector.
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the resistance between stroke sensor connector pin terminals.

Electrically-driven intelligent brake unit		Condition	Resistance	
Connector	Terminal	Condition	Resistance	
E34	33 – 19	Gradually depress the brake pedal.	Resistance value increases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	
L3 4	35 – 19		Resistance value decreases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	

Is the inspection result normal?

YES >> GO TO 28.

NO >> GO TO 26.

26.REPLACE STROKE SENSOR

Replace the stroke sensor. Refer to BR-523, "Removal and Installation".

>> GO TO 27.

27.stroke senor 0 point learning (3)

- Connect the electrically-driven intelligent brake unit harness connector.
- Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

>> GO TO 28.

28.perform self-diagnosis (9)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA1" detected?

YES >> GO TO 22.

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1AA2 STROKE SENSOR

DTC Logic INFOID:0000000009282363

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1AA2	STROKE SENSOR-4	An internal malfunction is detected in the stroke sensor. (Without fluctuations in output voltage of the stroke sensor)	Harness or connector Stroke sensor Electrically-driven intelligent brake unit	C

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

(P)With CONSULT

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

3. Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> Proceed to BR-373, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

${f 1}$.CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

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< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- Disconnect the stroke sensor harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect stroke sensor harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YFS >> GO TO 5.

NO >> INSPECTION END

$oldsymbol{5}$.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect stroke sensor harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage	
Connector	Connector Terminal		(Approx.)	
E34	26	Ground	0 V	

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Voltage
Connector Terminal		_	(Approx.)
E34	26	Ground	10 – 16 V

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< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	telligent brake unit	IPDI	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit	_	Continuity
Connector	Connector Terminal		Continuity
E34 26		Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
•	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage	
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

$\mathbf{9}$.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driver	n intelligent brake unit		Continuity
Connector Terminal		_	Continuity
E34 32		Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

C1AA2 STROKE SENSOR < DTC/CIRCUIT DIAGNOSIS > Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. В **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. D 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Е Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. BR CAUTION: Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. Н 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA2" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER. Refer to BR-39, "Reference M Value". Is the inspection result normal? Ν YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation" 14.perform self-diagnosis (6) With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.stroke sensor 0 point learning (1)

(P)With CONSULT

Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

<u>Is either "COMPLETED" or "The operation is incomplete. Try again after confirming the operation condition."</u> <u>displayed?</u>

"COMPLETED">>GO TO 16.

"The operation is incomplete. Try again after confirming the operation condition.">>GO TO 17.

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> GO TO 17.

NO >> INSPECTION END

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C1AA2 STROKE SENSOR < DTC/CIRCUIT DIAGNOSIS > 17. VISUALLY CHECK STROKE SENSOR Check the stroke sensor for damage. Is the inspection result normal? YES >> GO TO 18. В NO >> Repair or replace error-detected parts and GO TO 21. 18. CHECK STROKE SENSOR INSTALLATION Check the stroke sensor for looseness and disconnection. Is the inspection result normal? YES >> GO TO 19. D NO >> Repair or replace error-detected parts and GO TO 21. 19. CHECK BRAKE PEDAL HEIGHT Check each brake pedal height. Refer to BR-514, "Inspection and Adjustment". Is the inspection result normal? YES >> GO TO 20. BR >> Adjust each height. Refer to BR-514, "Inspection and Adjustment". GO TO 21. NO 20.stroke senor $_{ m 0}$ point learning (2) Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure". >> GO TO 21. 21. PERFORM SELF-DIAGNOSIS (8) Н (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. N **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. P 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA2" detected? YES >> GO TO 22.

22.CHECK STROKE SENSOR CIRCUIT (1)

1. Turn the power switch OFF to exit CONSULT.

>> INSPECTION END

NO

< DTC/CIRCUIT DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor harness connector and electrically-driven intelligent brake unit.

Stroke	sensor	Electrically-driven i	ntelligent brake unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	3		18	Existed
	3		33	Not existed
	3		19	Not existed
	3		35	Not existed
	2		18	Not existed
	2		33	Existed
	2		19	Not existed
E36	2	E34	35	Not existed
E30	1		18	Not existed
	1		33	Not existed
	1		19	Existed
	1 4 4		35	Not existed
			18	Not existed
			33	Not existed
	4		19	Not existed
	4		35	Existed

Is the inspection result normal?

YES >> GO TO 23.

NO >> Repair or replace error-detected parts and GO TO 28.

23. CHECK STROKE SENSOR POWER SUPPLY

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

4. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Check the stroke sensor power voltage.

Strol	ke sensor		Voltage
Connector	Terminal		(Approx.)
E36	3	Ground	4.75 – 5.25 V

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace error-detected parts and GO TO 24.

< DTC/CIRCUIT DIAGNOSIS >

$\overline{24}$.check stroke sensor circuit (2)

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor and ground.

Strok	ke sensor	_	Continuity
Connector	Terminal	_	
E36	4	Ground	Existed

Is the inspection result normal?

YES >> GO TO 25.

NO >> Repair or replace error-detected parts and GO TO 25.

25. CHECK STROKE SENSOR RESISTANCE

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Connect stroke sensor harness connector.
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the resistance between stroke sensor connector pin terminals.

Electrically-driven i	ntelligent brake unit	Condition	Resistance	
Connector	Terminal	Condition	Nesisiance	
E34	33 – 19	Gradually depress the brake pedal.	Resistance value increases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	
∟ 34	35 – 19		Resistance value decreases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	

BR-383

Is the inspection result normal?

YES >> GO TO 28.

NO >> GO TO 26.

26.REPLACE STROKE SENSOR

Replace the stroke sensor. Refer to BR-523, "Removal and Installation".

>> GO TO 27.

27.stroke senor 0 point learning (3)

- Connect the electrically-driven intelligent brake unit harness connector.
- Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

>> GO TO 28.

28.perform self-diagnosis (9)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA2" detected?

YES >> GO TO 22.

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1AA3 STROKE SENSOR

DTC Logic INFOID:0000000009282365

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1AA3	STROKE SENSOR-5	 An internal malfunction is detected in the stroke sensor. Poor installation is detected in the stroke sensor. 	Harness or connector Stroke sensor Electrically-driven intelligent brake unit	C

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

(P)With CONSULT

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

3. Turn the power switch OFF to exit CONSULT.

4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> Proceed to BR-385, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

 ${f 1}$.CHECK 12V BATTERY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

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Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- Disconnect the stroke sensor harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect stroke sensor harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YFS >> GO TO 5.

NO >> INSPECTION END

$oldsymbol{5}$.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect stroke sensor harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit	_	Continuity
Connector	Connector Terminal		Continuity
E34	E34 26		Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)		
Connector	Connector Terminal		
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)		
Connector	Connector Terminal		
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

$\mathbf{9}$.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

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< DTC/CIRCUIT DIAGNOSIS >

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-drive	n intelligent brake unit		Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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C1AA3 STROKE SENSOR < DTC/CIRCUIT DIAGNOSIS > Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. Α **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. В **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. D 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Е Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. BR CAUTION: Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. Н 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA3" detected? YES >> GO TO 13. >> INSPECTION END NO 13. CHECK DATA MONITOR (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER. Refer to BR-39, "Reference M Value". Is the inspection result normal? Ν YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation" 14.perform self-diagnosis (6) With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.stroke sensor 0 point learning (1)

(P)With CONSULT

Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

<u>Is either "COMPLETED" or "The operation is incomplete. Try again after confirming the operation condition."</u>
<u>displayed?</u>

"COMPLETED">>GO TO 16.

"The operation is incomplete. Try again after confirming the operation condition.">>GO TO 17.

16. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> GO TO 17.

NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS > 17. VISUALLY CHECK STROKE SENSOR Check the stroke sensor for damage. Is the inspection result normal? YES >> GO TO 18. В NO >> Repair or replace error-detected parts and GO TO 21. 18. CHECK STROKE SENSOR INSTALLATION Check the stroke sensor for looseness and disconnection. Is the inspection result normal? YES >> GO TO 19. D NO >> Repair or replace error-detected parts and GO TO 21. 19. CHECK BRAKE PEDAL HEIGHT Check each brake pedal height. Refer to BR-514, "Inspection and Adjustment". Is the inspection result normal? YES >> GO TO 20. BR >> Adjust each height. Refer to BR-514, "Inspection and Adjustment". GO TO 21. NO 20.stroke senor $_{ m 0}$ point learning (2) Perform stroke sensor 0 point learning. Refer to BR-76, "Work Procedure". >> GO TO 21. 21. PERFORM SELF-DIAGNOSIS (8) Н (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 6. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. N **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. P 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA3" detected? YES >> GO TO 22. NO >> INSPECTION END

22.CHECK STROKE SENSOR CIRCUIT (1)

Turn the power switch OFF to exit CONSULT.

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< DTC/CIRCUIT DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between stroke sensor harness connector and electrically-driven intelligent brake unit.

Stroke s	Stroke sensor		ntelligent brake unit	Continuit	
Connector	Terminal	Connector	Terminal	Continuity	
	3		18	Existed	
•	3		33	Not existed	
•	3		19	Not existed	
	3		35	Not existed	
	2		18	Not existed	
	2	E34 -	33	Existed	
	2		19	Not existed	
E36	2		35	Not existed	
⊏30	1		18	Not existed	
	1		33	Not existed	
	1		19	Existed	
	1		35	Not existed	
	4		18	Not existed	
•			33	Not existed	
	4		19	Not existed	
	4		35	Existed	

Is the inspection result normal?

YES >> GO TO 23.

NO >> Repair or replace error-detected parts and GO TO 28.

23.CHECK STROKE SENSOR POWER SUPPLY

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.
 CAUTION:

Never set the vehicle to READY.

5. Check the stroke sensor power voltage.

Strol	ke sensor	_	Voltage	
Connector	Terminal		(Approx.)	
E36	3	Ground	4.75 – 5.25 V	

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace error-detected parts and GO TO 24.

< DTC/CIRCUIT DIAGNOSIS >

24. CHECK STROKE SENSOR CIRCUIT (2)

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect stroke sensor harness connector.
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the continuity between stroke sensor and ground.

Strok	ke sensor	_	Continuity
Connector	Terminal	_	
E36	4	Ground	Existed

Is the inspection result normal?

YES >> GO TO 25.

NO >> Repair or replace error-detected parts and GO TO 25.

25. CHECK STROKE SENSOR RESISTANCE

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Connect stroke sensor harness connector.
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Check the resistance between stroke sensor connector pin terminals.

Electrically-driven i	ntelligent brake unit	Condition	Resistance	
Connector	Terminal	Condition	Resistance	
E34	33 – 19	Gradually depress	Resistance value increases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	
L0 4	35 – 19	the brake pedal.	Resistance value decreases between 0.1 – 1.33 k Ω , according to the depth of brake depression.	

Is the inspection result normal?

YES >> GO TO 28.

NO >> GO TO 26.

26. REPLACE STROKE SENSOR

Replace the stroke sensor. Refer to BR-523, "Removal and Installation".

>> GO TO 27.

27.STROKE SENOR 0 POINT LEARNING (3)

- Connect the electrically-driven intelligent brake unit harness connector.
- Perform stroke sensor 0 point learning. Refer to <u>BR-76, "Work Procedure"</u>.

>> GO TO 28.

28. PERFORM SELF-DIAGNOSIS (9)

(II) With CONSULT

1. Connect the electrically-driven intelligent brake unit harness connector.

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< DTC/CIRCUIT DIAGNOSIS >

- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA3" detected?

YES >> GO TO 22.

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1AA9 PRESSURE SENSOR

DTC Logic INFOID:0000000009256202

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1AA9	PRESSURE SENSOR	A malfunction is detected in the master cylinder pressure sensor.	Harness or connector Master cylinder pressure sensor improper installation Master cylinder pressure sensor Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2 .CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA9" detected?

YES >> Proceed to BR-397, "Diagnosis Procedure".

>> INSPECTION END

Diagnosis Procedure

1.CHECK 12V BATTERY

Turn the power switch OFF to exit CONSULT.

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< DTC/CIRCUIT DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "Work Flow".
- Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA9" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.check connector terminals

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- Check that there is no malfunction in pin terminals and connection of master cylinder pressure sensor harness connector.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

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< DTC/CIRCUIT DIAGNOSIS > 4. PERFORM SELF-DIAGNOSIS (2) With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect master cylinder pressure sensor harness connector. В Connect 12V battery cable to negative terminal. 4. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 5. Repeat step 4 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D 6. Turn the power switch OFF to exit CONSULT. 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е **CAUTION:** Never operate the vehicle and CONSULT while waiting. 8. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 9. Erase self-diagnosis result of "BRAKE". 10. Turn the power switch OFF to exit CONSULT. 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Н 12. Turn the power switch ON without depressing the brake pedal. Never set the vehicle to READY. 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 14. Release brake pedal. 15. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA9" detected? YES >> GO TO 5. NO >> INSPECTION END K ${f 5}$.CHECK POWER SWITCH ON POWER SUPPLY 1. Connect master cylinder pressure sensor harness connector. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. M **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-Ν 6. Disconnect the electrically-driven intelligent brake unit harness connector. 7. Connect 12V battery cable to negative terminal. 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit	_	Voltage (Approx.)
Connector	Terminal		
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven in	telligent brake unit	_	Voltage	
Connector	Terminal	_	(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit	_	Continuity
Connector	Connector Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect master cylinder pressure sensor harness connector.
- 3. Connect IPDM E/R harness connector.
- 4. Connect 12V battery cable to negative terminal.
- 5. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

6. Repeat step 5 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 11. Turn the power switch OFF to exit CONSULT.

< DTC/CIRCUIT DIAGNOSIS >

12. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

13. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 14. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 15. Release brake pedal.
- 16. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA9" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)		
Connector	Connector Terminal		
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)		
Connector	Connector Terminal		
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery"</u>.
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-TERY POWER SUPPLY -"</u>.
- NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA9" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-drive	n intelligent brake unit	_	Continuity
Connector	Terminal	_	
E34	32	Ground	Existed

< DTC/CIRCUIT DIAGNOSIS > Is the inspection result normal? Α YES >> GO TO 13. NO >> Repair or replace error-detected parts and GO TO 12. 12. PERFORM SELF-DIAGNOSIS (5) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. D **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** BR Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA9" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (1) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. N **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". Is the inspection result normal? Р YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14.perform self-diagnosis (6) (P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.
 CAUTION:

Never set the vehicle to READY.

< DTC/CIRCUIT DIAGNOSIS >

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA9" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK MASTER CYLINDER PRESSURE SENSOR INSTALLATION

- 1. Turn the power switch OFF to exit CONSULT.
- Check the master cylinder pressure sensor for looseness and disconnection. Refer to <u>BR-533</u>, "<u>Exploded View</u>".

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace error-detected parts and GO TO 16.

16. PERFORM SELF-DIAGNOSIS (7)

(E) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

C1AA9 PRESSURE SENSOR < DTC/CIRCUIT DIAGNOSIS > 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. Α 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AA9" detected? YES >> GO TO 17. В NO >> INSPECTION END 17.CHECK MASTER CYLINDER PRESSURE SENSOR CIRCUIT Turn the power switch OFF to exit CONSULT. Disconnect master cylinder pressure sensor harness connector. 3. Disconnect the ABS actuator and electric unit (control unit) harness connector. Check the continuity between master cylinder pressure sensor harness connector and ABS actuator and D electric unit (control unit) harness connector harness connector. Refer to BRC-122, "Diagnosis Procedure". Is the inspection result normal? Е YES >> GO TO 18. NO >> Repair or replace error-detected parts and GO TO 20. 18. CHECK MASTER CYLINDER PRESSURE SENSOR POWER CIRCUIT BR Check the master cylinder pressure sensor power voltage. Refer to BRC-122, "Diagnosis Procedure". Is the inspection result normal? YES >> GO TO 19. NO >> Repair or replace error-detected parts and GO TO 20. 19. CHECK DATA MONITOR (2) With CONSULT 1. Turn the power switch OFF to exit CONSULT. Connect master cylinder pressure sensor harness connector. 3. Connect ABS actuator and electric unit (control unit) harness connector. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 5. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery". 6. Connect 12V battery cable to negative terminal. 7. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 8. Repeat step 7 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. 10. Check the "MASTER CYL PRESSURE". Refer to BR-39, "Reference Value". Is the inspection result normal? N YFS >> GO TO 20. NO >> Check the ABS actuator and electric unit (control unit). Refer to BRC-47, "CONSULT Function". 20.perform self-diagnosis (8) (P)With CONSULT

- 1. Connect master cylinder pressure sensor harness connector.
- 2. Connect ABS actuator and electric unit (control unit) harness connector.
- Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

5. Turn the power switch OFF to exit CONSULT.

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6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AA9" detected?

YES >> GO TO 21.

NO >> INSPECTION END

21. CHECK MASTER CYLINDER PRESSURE SENSOR

- 1. Disconnect master cylinder pressure sensor harness connector.
- Check that the voltage between master cylinder pressure sensor harness connector changes with the depth of pedal depression.

Is the inspection result normal?

- YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".
- NO >> Check the ABS actuator and electric unit (control unit). Refer to <u>BRC-47, "CONSULT Function"</u>.

< DTC/CIRCUIT DIAGNOSIS >

C1AB8 MOTOR

DTC Logic INFOID:0000000009282367

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes	
C1AB8	MOTOR-2	Temperature of motor that is integrated with electrically-driven intelligent brake unit is as shown below. Motor temperature: −50°C (−122°F) ≥ Motor temperature Motor temperature: 115°C (239°F) ≤ Motor temperature A malfunction is detected in the temperature detection.		C
		tion circuit of the motor that is integrated with the electrically-driven intelligent brake unit.		Е

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2 .CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB8" detected?

YES >> Proceed to BR-408, "Diagnosis Procedure".

NO >> INSPECTION END BR

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< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure

INFOID:0000000009282383

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and PG-59, "Work Flow".
- 4. Check the 12V battery. Refer to PG-59, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected part and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB8" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

C1AB8 MOTOR < DTC/CIRCUIT DIAGNOSIS > YES >> GO TO 5. NO >> Repair or replace error-detected part and GO TO 4. Α 4.PERFORM SELF-DIAGNOSIS (2) (E)With CONSULT В 1. Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. BR **CAUTION:** Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Н Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AB8" detected? YES >> GO TO 5. NO >> INSPECTION END ${f 5}$. CHECK POWER SWITCH ON POWER SUPPLY Connect 12V battery cable to negative terminal. Turn the power switch OFF to exit CONSULT. 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for

3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driver	n intelligent brake unit		Voltage (Approx.)
Connector	Terminal		
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven in	telligent brake unit	_	Voltage	
Connector	Terminal	_	(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected part and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB8" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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< DTC/CIRCUIT DIAGNOSIS >

- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace the error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB8" detected?

YES >> GO TO 4.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

< DTC/CIRCUIT DIAGNOSIS > NO >> Repair or replace the error-detected parts and GO TO 12. 12. PERFORM SELF-DIAGNOSIS (5) Α (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. В Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Н 11. Turn the power switch ON without depressing the brake pedal. Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AB8" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (1) K (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. N 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference Value". 0 Is the inspection result normal? YES NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB8" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK DATA MONITOR (2)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order.
- 4. Check the "MOTOR TEMPERATURE". Refer to BR-39, "Reference Value".

"MOTOR TEMPERATURE" is 125 °C (257 °F) or more?

YES >> GO TO 16.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

16. CHECK MOTOR ROOM

Check for any locations of abnormal heating around the electrically-driven intelligent brake unit.

Are there any heated locations?

YES >> Perform diagnosis of the heated locations, and wait for the temperature to fall. GO TO 17.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

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CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB8" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>. "Removal and installation".

NO >> INSPECTION END

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DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1AB9	MOTOR-3	The occurrence of malfunction in the motor (resolver) of the electrically-driven intelligent brake unit.	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(I) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB9" detected?

YES >> Proceed to BR-416, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282370

1. CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >	
3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".	А
4. Check the 12V battery. Refer to <u>PG-59</u> , "Work Flow".	
Is the inspection result normal?	
	В
NO >> Repair or replace error-detected part and GO TO 2.	
2.PERFORM SELF-DIAGNOSIS (1)	
With CONSULT	С
Connect 12V battery cable to negative terminal.	
Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:	D
Never set the vehicle to READY.	
Repeat step 2 two or more times.	
CAUTION: Be sure to wait for 5 seconds or more after turning the power switch OFF.	Е
4. Turn the power switch OFF to exit CONSULT.	
5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	DD.
5 minutes of more with all doors closed.	3R
CAUTION: Never operate the vehicle and CONSULT while waiting.	
6. Turn the power switch ON without depressing the brake pedal.	G
CAUTION:	
Never set the vehicle to READY. 7. Start CONSULT and erase self-diagnosis result of "BRAKE".	
8. Turn the power switch OFF to exit CONSULT.	Н
9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
3 minutes or more with all doors closed.	
CAUTION: Never operate the vehicle and CONSULT while waiting.	1
10. Turn the power switch ON without depressing the brake pedal.	
CAUTION:	J
Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
12. Release brake pedal.	
	K
Is DTC "C1AB9" detected?	
YES >> GO TO 3.	
NO >> INSPECTION END	L
3.CHECK CONNECTOR TERMINALS	
Turn the power switch OFF to exit CONSULT.	M
Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.	
CAUTION:	
Never operate the vehicle and CONSULT while waiting.	Ν
3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-	
tery". 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin	
terminals and connections.	0
Is the inspection result normal?	
	Р
NO >> Repair or replace error-detected part and GO TO 4.	
4.PERFORM SELF-DIAGNOSIS (2)	

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB9" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	<u>—</u>	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	iven intelligent brake unit IPDM E/R Continuity		IPDM E/R	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".
- NO >> Repair or replace error-detected part and GO TO 7.

7.perform self-diagnosis (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

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< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1AB9" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-TERY POWER SUPPLY -"</u>.
- NO >> Repair or replace the error-detected parts and GO TO 10.

< DTC/CIRCUIT DIAGNOSIS >

10.perform self-diagnosis (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB9" detected?

YES >> GO TO 4.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace the error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

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< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB9" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR (1)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>.

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Α Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 9. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AB9" detected? YES >> GO TO 15. Е NO >> INSPECTION END 15. CHECK DATA MONITOR (2) BR (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. CAUTION: Be sure to wait for 5 seconds or more after turning the power switch OFF. 3. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR TEMPERATURE". Refer to <u>BR-39, "Reference Value"</u>. "MOTOR TEMPERATURE" is 125 °C (257 °F) or more? YES >> GO TO 16. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 16.check motor room Check for any locations of abnormal heating around the electrically-driven intelligent brake unit. Are there any heated locations? YES >> Perform diagnosis of the heated locations, and wait for the temperature to fall. GO TO 17. K NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>. 17.perform self-diagnosis (7) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. N Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 5. Turn the power switch ON without depressing the brake pedal. CAUTION: Р Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

CAUTION:

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< DTC/CIRCUIT DIAGNOSIS >

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AB9" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1ABA MOTOR

DTC Logic INFOID:0000000009282371

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1ABA	MOTOR-4	The occurrence of malfunction in the motor (resolver position) of the electrically-driven intelligent brake unit.	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1ABA" detected?

YES >> Proceed to BR-425, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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< DTC/CIRCUIT DIAGNOSIS >

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "<u>Work Flow</u>".
- Check the 12V battery. Refer to <u>PG-59, "Work Flow"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected part and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(II) With CONSULT

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1ABA" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3. CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected part and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1ABA" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5.CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 4. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6. BR

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< DTC/CIRCUIT DIAGNOSIS >

6. CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected part and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

< DTC/CIRCUIT DIAGNOSIS >

Is DTC "C1ABA" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage (Approx.)
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage (Approx.)
Connector Terminal		
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace the error-detected parts and GO TO 10.

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< DTC/CIRCUIT DIAGNOSIS >

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1ABA" detected?

YES >> GO TO 4.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".

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- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace the error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:

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C1ABA MOTOR < DTC/CIRCUIT DIAGNOSIS > Never set the vehicle to READY. 4. Repeat step 3 two or more times. Α **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. D Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for Е 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. BR CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1ABA" detected? Н YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (1) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". Is the inspection result normal? YES >> GO TO 14. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) Ν (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Repeat step 1 two or more times. **CAUTION:** Р

Be sure to wait for 5 seconds or more after turning the power switch OFF.

3. Turn the power switch OFF to exit CONSULT.

 Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1ABA" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK DATA MONITOR (2)

With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Start CONSULT and select "BRAKE", "DATA MONITOR" according this order.
- Check the "MOTOR TEMPERATURE". Refer to <u>BR-39</u>, "<u>Reference Value</u>".

"MOTOR TEMPERATURE" is 125 °C (257 °F) or more?

YES >> GO TO 16.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

16. CHECK MOTOR ROOM

Check for any locations of abnormal heating around the electrically-driven intelligent brake unit.

Are there any heated locations?

YES >> Perform diagnosis of the heated locations, and wait for the temperature to fall. GO TO 17.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

17.perform self-diagnosis (7)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

C1ABA MOTOR < DTC/CIRCUIT DIAGNOSIS > Turn the power switch ON without depressing the brake pedal. **CAUTION:** Α Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 11. Release brake pedal. В 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1ABA" detected? YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u>. NO >> INSPECTION END D Е BR Н

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DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1AC0	CONTROL MODULE TEMP-2	Temperature signal of control module that is integrated with electrically-driven intelligent brake unit is as shown below. Control module temperature signal: −50°C (−122°F) ≥ Control module temperature signal Control module temperature signal: 150°C (302°F) ≤ Control module temperature signal A malfunction is detected in the temperature detection circuit of the control module that is integrated with the electrically-driven intelligent brake unit.	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> Proceed to <u>BR-435</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS > Diagnosis Procedure INFOID:0000000009256210 1. CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow".
- Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

With CONSULT Connect 12V battery cable to negative terminal.

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

4. Turn the power switch OFF to exit CONSULT.

5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

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YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to exit CONSULT.
- 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit Connector Terminal		_	Voltage
		_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit Connector Terminal			Voltage
		_	(Approx.)
E34	26	Ground	10 – 16 V

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Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

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6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	itelligent brake unit		Continuity
Connector	Terminal	_	
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)	
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage (Approx.)	
Connector	Connector Terminal	
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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- Check the 15A fuse (#75).
- Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit Connector Terminal			Continuity
			Continuity
E34	32	Ground	Existed

Is the inspection result normal?

>> GO TO 13.

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NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR (1)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

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Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. Α 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** В Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 7. Turn the power switch OFF to exit CONSULT. 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for D 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. Е 9. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. BR 11. Release brake pedal. 12. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AC0" detected? YES >> GO TO 15. NO >> INSPECTION END 15. CHECK DATA MONITOR (2) Н (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. 4. Check the "CONTROL MODULE TEMP". Refer to BR-39, "Reference Value". "CONTROL MODULE TEMP" is 150 °C (302 °F) or more? YES >> GO TO 16. NO >> INSPECTION END L 16. CHECK MOTOR ROOM Check for any locations of abnormal heating around the electrically-driven intelligent brake unit. Are there any heated locations? YES >> Perform diagnosis of the heated locations, and wait for the temperature to fall. GO TO 17. NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation" 17.perform self-diagnosis (7) Ν (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 2. Repeat step 1 two or more times. CAUTION: Р Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

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CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC0" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

C1AC1 CONTROL MODULE

DTC Logic INFOID:0000000009282373

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1AC1	CONTROL MODULE TEMP-3	Temperature of control module that is integrated with electrically-driven intelligent brake unit is as shown below. Control module temperature: −50°C (−122°F) ≥ Control module temperature Control module temperature: 150°C (302°F) ≤ Control module temperature A malfunction is detected in the temperature detection circuit of the control module that is integrated with the electrically-driven intelligent brake unit.	Harness or connector Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC1" detected?

YES >> Proceed to BR-444, "Diagnosis Procedure".

NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure

INFOID:0000000009282374

1. CHECK 12V BATTERY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and PG-59, "Work Flow".
- 4. Check the 12V battery. Refer to PG-59, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC1" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

C1AC1 CONTROL MODULE < DTC/CIRCUIT DIAGNOSIS > YES >> GO TO 5. NO >> Repair or replace error-detected parts and GO TO 4. Α 4.PERFORM SELF-DIAGNOSIS (2) (E)With CONSULT В 1. Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. BR **CAUTION:** Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Н Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AC1" detected? YES >> GO TO 5. NO >> INSPECTION END ${f 5}$. CHECK POWER SWITCH ON POWER SUPPLY Connect 12V battery cable to negative terminal. Turn the power switch OFF to exit CONSULT. 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. M **CAUTION:** Never operate the vehicle and CONSULT while waiting. 4. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-Ν

- 5. Disconnect the electrically-driven intelligent brake unit harness connector.
- 6. Connect 12V battery cable to negative terminal.
- 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven intelligent brake unit			Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven intelligent brake unit			Voltage	
Connector	Connector Terminal		(Approx.)	
E34	26	Ground	10 – 16 V	

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	Electrically-driven intelligent brake unit IPDM E/R		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity	
Connector	Terminal	_	Continuity	
E34	26	Ground	Not existed	

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC1" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

1. Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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< DTC/CIRCUIT DIAGNOSIS >

- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC1" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Bat-tery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

< DTC/CIRCUIT DIAGNOSIS > NO >> Repair or replace error-detected parts and GO TO 12. 12. PERFORM SELF-DIAGNOSIS (5) Α (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. В Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Н 11. Turn the power switch ON without depressing the brake pedal. Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AC1" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (1) K (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. N Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39, "Reference Value". 0 Is the inspection result normal? YES NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY.

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2. Repeat step 1 two or more times.

CAUTION:

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Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC1" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK DATA MONITOR (2)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- 4. Check the "CONTROL MODULE TEMP". Refer to BR-39, "Reference Value".

"CONTROL MODULE TEMP" is 150 °C (302 °F) or more?

YES >> GO TO 16.

NO >> INSPECTION END

16. CHECK MOTOR ROOM

Check for any locations of abnormal heating around the electrically-driven intelligent brake unit.

Are there any heated locations?

- YES >> Perform diagnosis of the heated locations, and wait for the temperature to fall. GO TO 17.
- NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation"

17. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

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CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC1" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>. "Removal and installation".

NO >> INSPECTION END

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< DTC/CIRCUIT DIAGNOSIS >

C1AC8 BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1AC8	POWER SUPPLY BACKUP UNIT-2	A malfunction is detected in the internal circuit of the brake power supply backup unit.	 Harness or connector Fuse Brake power supply backup unit Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC8" detected?

YES >> Proceed to BR-452, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009282376

1. CHECK 12V BATTERY

1. Turn the power switch OFF to exit CONSULT.

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C1AC8 BRAKE POWER SUPPLY BACKUP UNIT < DTC/CIRCUIT DIAGNOSIS > Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". 4. Check the 12V battery. Refer to PG-59, "Work Flow". Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. 2.perform self-diagnosis (1) (P)With CONSULT 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for

3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.

9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC8" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

BR-453

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4. BR

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< DTC/CIRCUIT DIAGNOSIS >

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC8" detected?

YES >> GO TO 5.

NO >> INSPECTION END

5. CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>. "<u>Precaution for Removing 12V Battery</u>".
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	10 – 16 V

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Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

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6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC8" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

< DTC/CIRCUIT DIAGNOSIS >

- Check the 15A fuse (#75).
- Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -".
- NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC8" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Batterv".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

>> GO TO 13.

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NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(II) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AC8" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR (1)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE", "DATE MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>. "Reference <u>Value"</u>.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

< DTC/CIRCUIT DIAGNOSIS >

3. 4.	Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	Α
	3 minutes or more with all doors closed. CAUTION:	В
5.	Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION:	
6. 7.	Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT.	С
8.	Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION:	D
9.	Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION:	Е
11.	Never set the vehicle to READY. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. Release brake pedal.	BR
	Start CONSULT and perform "BRAKE" self-diagnosis. OTC "C1AC8" detected?	
YI	ES >> GO TO 15.	G
N 1 5		
[CHECK DATA MONITOR (2)	Н
() \1.	With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY.	I
2.	Repeat step 1 two or more times. CAUTION:	J
3. 4.	Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE", "DATE MONITOR" according this order. Check the "BACKUP UINT DIAG RESULT". Refer to BR-39, "Reference Value".	0
<u>Wh</u>	at was the displayed data monitor result?	K
	IORMAL">>INSPECTION END RR1">> GO TO 16.	
	RR2">> GO TO 10.	L
	RR3">> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation".</u> RR4">> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation"</u> .	
"E	RR5">> Replace the brake power supply backup unit. Refer to BR-536, "Removal and Installation".	M
	RR6">> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation"</u> . RR7">> GO TO 16.	
"E	RR8">> GO TO 16.	
	RR9">> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation".</u> RR10">>Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation".</u>	Ν
	RR11">>Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation".</u>	
	RR12">>GO TO 16. RR13">>Replace the brake power supply backup unit. Refer to BR-536, "Removal and Installation".	0
"E	RR14">>Replace the brake power supply backup unit. Refer to BR-536, "Removal and Installation".	
"E	RR15">>GO TO 16.	Р
10	CHECK BRAKE POWER SUPPLY BACKUP UNIT CIRCUIT	
1.	Turn the power switch OFF to exit CONSULT.	

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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< DTC/CIRCUIT DIAGNOSIS >

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Disconnect the brake power supply backup unit harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	telligent brake unit	Brake power supply backup unit		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	E34 31 B15			1	Existed
E24		B15	4	Not existed	
⊏34			5	Not existed	
			6	Not existed	

7. Check the continuity between brake power supply backup unit and ground.

Brake power	supply backup unit		Continuity
Connector	Connector Terminal		Continuity
B15	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace error-detected parts and GO TO 17.

17. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY

- 1. Connect 12V battery cable to negative terminal.
- 2. Check the voltage between brake power supply backup unit and ground.

Brake power	supply backup unit		Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	9 – 16 V

3. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Check the voltage between brake power supply backup unit and ground.

Brake power	supply backup unit		Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 19.

NO >> GO TO 18.

18. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 15A fuse (#82).
- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 5. Check the continuity and for short circuit between harness connector terminal 6 of brake power supply backup unit and 15A fuse (#82).

Is the inspection result normal?

YES >> GO TO 19.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

19. CHECK BRAKE POWER SUPPLY BACKUP UNIT COMMUNICATION CIRCUIT

1. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	Electrically-driven intelligent brake unit		Brake power supply backup unit		
Connector	Terminal	Connector	Terminal	Continuity	
	37	B15	1	Not existed	
E34			4	Not existed	
E34		31	613	5	Existed
			6	Not existed	

2. Check the continuity between brake power supply backup unit and ground.

Brake power supply backup unit			Continuity
Connector	Terminal		Continuity
B15	5	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair or replace error-detected parts. GO TO 20.

20.CHECK BRAKE POWER SUPPLY BACKUP UNIT WAKE UP CIRCUIT

1. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	Electrically-driven intelligent brake unit		Brake power supply backup unit		
Connector	Terminal	Connector	Terminal	Continuity	
	22			1	Not existed
E34		B15	4	Existed	
LOT			5	Not existed	
			6	Not existed	

2. Check the continuity between brake power supply backup unit and ground.

Brake power	supply backup unit		Continuity
Connector Terminal		_	Continuity
B15	4	Ground	Not existed

Is the inspection result normal?

YES >> Replace the brake power supply backup unit. Refer to <u>BR-536</u>, "Removal and Installation".

NO >> Repair or replace error-detected parts.

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C1AD0 BRAKE POWER SUPPLY BACKUP UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
C1AD0	POWER SUPPLY BACKUP UNIT VOLT-2	 An internal malfunction (overvoltage) is detected in the brake power supply backup unit. Power voltage of brake power supply backup unit is as shown below. Power voltage of brake power supply backup unit: 9 V ≥ Power voltage of brake power supply backup unit Power voltage of brake power supply backup unit: 16 V ≤ Power voltage of brake power supply backup unit 	 Harness or connector Fuse Brake power supply backup unit Electrically-driven intelligent brake unit 12V battery is low

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

(E)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AD0" detected?

YES >> Proceed to BR-463, "Diagnosis Procedure".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

terminals and connections.

Diagnosis Procedure INFOID:0000000009282378 Α 1. CHECK 12V BATTERY Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Check the 12V battery terminal connections. Refer to BR-7, "Precaution for Removing 12V Battery" and PG-59, "Work Flow". Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow". D Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts and GO TO 2. Е 2.PERFORM SELF-DIAGNOSIS (1) With CONSULT BR 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 3. Repeat step 2 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. Н 4. Turn the power switch OFF to exit CONSULT. 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 6. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 8. Turn the power switch OFF to exit CONSULT. 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 10. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 12. Release brake pedal. 13. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AD0" detected? N YES >> GO TO 3. NO >> INSPECTION END 3.CHECK CONNECTOR TERMINALS 0 Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-

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4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin

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5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4.PERFORM SELF-DIAGNOSIS (2)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AD0" detected?

YES >> GO TO 5.

NO >> INSPECTION END

CHECK POWER SWITCH ON POWER SUPPLY

- 1. Connect the brake power supply backup unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery"</u>
- 6. Disconnect the electrically-driven intelligent brake unit harness connector.
- 7. Connect 12V battery cable to negative terminal.
- 8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit Connector Terminal		_	Voltage (Approx.)
E34	26	Ground	0 V

< DTC/CIRCUIT DIAGNOSIS >

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

10. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit		Voltage
Connector Terminal			(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

O.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 15A fuse (#62).
- Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	Electrically-driven intelligent brake unit IPDM E/R		M E/R	Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to PG-30, "Wiring Diagram - ON POWER SUPPLY -".

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

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- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AD0" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- 1. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage	
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
	28 – 32		

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Bat-tery"</u>.
- Check the 60A fusible link (#F).

< DTC/CIRCUIT DIAGNOSIS >

- Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F). Α 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F). 7. Check the 15A fuse (#75). 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75). Is the inspection result normal? YES >> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -". NO >> Repair or replace error-detected parts and GO TO 10. D 10.perform self-diagnosis (4) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Е Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Н **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. K 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "C1AD0" detected? YES >> GO TO 11. NO >> INSPECTION END N 11. CHECK GROUND CIRCUIT Turn the power switch OFF to exit CONSULT. 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Never operate the vehicle and CONSULT while waiting. 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

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< DTC/CIRCUIT DIAGNOSIS >

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AD0" detected?

YES >> GO TO 13.

NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Start CONSULT and select "BRAKE", "DATE MONITOR" according this order.
- 6. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference Value".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

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C1AD0 BRAKE POWER SUPPLY BACKUP UNIT

< DTC/CIRCUIT DIAGNOSIS >

14. PERFORM SELF-DIAGNOSIS (6)

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "C1AD0" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15.CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY

Connect 12V battery cable to negative terminal.

Check the voltage between brake power supply backup unit and ground.

Brake power	supply backup unit		Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	9 – 16 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Check the voltage between brake power supply backup unit and ground.

Brake power s	supply backup unit	_	Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	9 – 16 V

Is the inspection result normal?

YES >> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation"</u>.

NO >> GO TO 16.

16. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

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C1AD0 BRAKE POWER SUPPLY BACKUP UNIT

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fusible link (#82).
- 5. Check the continuity and for short circuit between harness connector terminal 6 of brake power supply backup unit and 15A fuse (#82).

Is the inspection result normal?

- YES >> Replace the brake power supply backup unit. Refer to <u>BR-536, "Removal and Installation"</u>.
- NO (9 V or less)>>Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BATTERY POWER SUPPLY -"</u>.
- NO (16 V or more)>>Perform diagnosis for the PDM (Power Delivery Module). Refer to VC-28, "CONSULT Function".

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

U1000 CAN COMM CIRCUIT

Description INFOID:0000000009256225

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:0000000009256226

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
U1000	CAN COMM CIRCUIT	Electrically-driven intelligent brake unit did not receive / transmit the CAN communication signal for 2 seconds or more.	CAN communication system mal- function

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1000" detected?

YES >> Proceed to BR-472, "Diagnosis Procedure".

NO >> INSPECTION END

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U1000 CAN COMM CIRCUIT

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Diagnosis Procedure

INFOID:0000000009256227

Proceed to LAN-16, "Trouble Diagnosis Flow Chart".

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description INFOID:0000000009256228

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:0000000009256229

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
U1010	CONTROL UNIT (CAN)	A malfunction is detected at initial diagnosis of CAN controller of electrically-driven intelligent brake unit.	Electrically-driven intelligent brake unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1010" detected?

YES >> Proceed to BR-474, "Diagnosis Procedure".

>> INSPECTION END NO

BR-473 Revision: October 2013 2013 LEAF BR

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U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure

INFOID:0000000009256230

1. CHECK SELF-DIAGNOSIS RESULTS

Check for failures in the pin terminals and connections of the electrically-driven intelligent brake unit harness connector.

Is the inspection result normal?

YES >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

NO >> Repair or replace error-detected parts.

U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICA-

< DTC/CIRCUIT DIAGNOSIS >

U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMU-NICATION

DTC Logic INFOID:0000000009256231

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
U1510	BRAKE CONTROL COMMUNI- CATION	Signals from brake communications line are not sent or received continuously for 4 seconds or more.	 Harness or connector Electrically-driven intelligent brake unit ABS actuator and electric unit (control unit)

^{*:} CAN communications line between electrically-driven intelligent brake unit and ABS actuator control unit

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2 . CHECK DTC DETECTION

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1510" detected?

YES >> Proceed to BR-475, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

 $oldsymbol{1}$. CHECK 12V BATTERY

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INFOID:0000000009256232

U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICA-TION

< DTC/CIRCUIT DIAGNOSIS >

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and PG-59, "Work Flow".
- 4. Check the 12V battery. Refer to PG-59, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1510" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

4. PERFORM SELF-DIAGNOSIS (2)

U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICATION

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< D	TC/CIRCUIT DIAGNOSIS >	
(P)V	vith CONSULT	
1.	Connect the electrically-driven intelligent brake unit harness connector.	1
	Connect 12V battery cable to negative terminal.	
3.	Turn the power switch OFF to ON without depressing the brake pedal.	
	CAUTION: Never set the vehicle to READY.	
4.	Repeat step 3 two or more times.	
	CAUTION:	
	Be sure to wait for 5 seconds or more after turning the power switch OFF.	(
	Turn the power switch OFF to exit CONSULT.	
6.	Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
	3 minutes or more with all doors closed. CAUTION:	
	Never operate the vehicle and CONSULT while waiting.	
7.	Turn the power switch ON without depressing the brake pedal.	
	CAUTION:	
_	Never set the vehicle to READY.	
	Start CONSULT and erase self-diagnosis result of "BRAKE".	
	Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	В
10.	3 minutes or more with all doors closed.	
	CAUTION:	
	Never operate the vehicle and CONSULT while waiting.	(
11.	Turn the power switch ON without depressing the brake pedal.	
	CAUTION:	
12	Never set the vehicle to READY. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.	
	Release brake pedal.	
	Start CONSULT and perform "BRAKE" self-diagnosis.	
	TC "U1510" detected?	
	S >> GO TO 5.	
NC		
5.0	CHECK POWER SWITCH ON POWER SUPPLY	
	Connect 12V battery cable to negative terminal.	
	Turn the power switch OFF to exit CONSULT.	
	Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for	
	3 minutes or more with all doors closed.	
	CAUTION:	
4	Never operate the vehicle and CONSULT while waiting.	
4.	Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7, "Precaution for Removing 12V Battery"</u>	
5.	<u>tery"</u> . Disconnect the electrically-driven intelligent brake unit harness connector.	I
	Connect 12V battery cable to negative terminal.	
	Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.	
	, , ,	

Electrically-driven intelligent brake unit			Voltage	
Connector	Connector Terminal		(Approx.)	
E34	26	Ground	0 V	

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven in	telligent brake unit	_	Voltage	
Connector	Terminal		(Approx.)	
E34	26	Ground	10 – 16 V	

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U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICA-TION

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	ntelligent brake unit	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven in	telligent brake unit	_	Continuity
Connector	Terminal		Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7. PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICA-

< DTC/CIRCUIT DIAGNOSIS >

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1510" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8.CHECK 12V BATTERY POWER SUPPLY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driver	Voltage		
Connector	Terminal	(Approx.)	
	1 – 32		
E34	2 – 32	10 – 16 V	
•	28 – 32		

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

$\mathbf{9}$.CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

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U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICA-TION

< DTC/CIRCUIT DIAGNOSIS >

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1510" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-drive	Electrically-driven intelligent brake unit		Continuity
Connector	Terminal	_	Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12. PERFORM SELF-DIAGNOSIS (5)

(P)With CONSULT

Connect the electrically-driven intelligent brake unit harness connector.

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U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICATION

< D	TC/CIRCUIT DIAGNOSIS >	
2. 3.	Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:	Α
4.	Never set the vehicle to READY. Repeat step 3 two or more times. CAUTION:	В
5. 6.	Be sure to wait for 5 seconds or more after turning the power switch OFF. Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION:	С
7.	Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION:	D
9.	Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". Turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION:	BR
11.	Never operate the vehicle and CONSULT while waiting. Turn the power switch ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY.	G
13. 14.	Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. Release brake pedal. Start CONSULT and perform "BRAKE" self-diagnosis.	Н
YE	OTC "U1510" detected? ES >> GO TO 13. O >> INSPECTION END CHECK DATA MONITOR	I
<u></u>	Vith CONSULT	J
1. 2.	Connect the electrically-driven intelligent brake unit harness connector. Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal.	K
0.	CAUTION: Never set the vehicle to READY.	
4.	Repeat step 3 two or more times. CAUTION:	L
	Be sure to wait for 5 seconds or more after turning the power switch OFF. Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to BR-39 , "Reference <a <="" a="" href="Value">.	M
	he inspection result normal?	
N	ES >> GO TO 14. O >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533, "Removal and installation"</u> . PERFORM SELF-DIAGNOSIS (6)	N
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⊕V 1.	Vith CONSULT Turn the power switch OFF to ON without depressing the brake pedal. CAUTION:	_
2.	Never set the vehicle to READY. Repeat step 1 two or more times. CAUTION:	Р
2	Be sure to wait for 5 seconds or more after turning the power switch OFF.	

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4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for

3 minutes or more with all doors closed.

CAUTION:

U1510 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) COMMUNICA-TION

< DTC/CIRCUIT DIAGNOSIS >

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1510" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND CONTROL UNIT

Start CONSULT and perform self-diagnosis for "ABS". Refer to BRC-47, "CONSULT Function".

Is DTC "U110D" detected?

YES >> Perform diagnosis. Refer to <u>BRC-149</u>, "<u>Diagnosis Procedure</u>".

NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

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< DTC/CIRCUIT DIAGNOSIS >

U1511 BRAKE POWER SUPPLY BACKUP UNIT COMMUNICATION

DTC Logic INFOID:0000000009256233

DTC DETECTION LOGIC

DTC	Display item	Malfunction detection condition	Possible causes
U1511	POWER SUPPLY BACKUP UNIT COMM	Signals from power backup communications line* are not sent or received continuously for 4 seconds or more.	Harness or connector Electrically-driven intelligent brake unit Brake power supply backup unit

^{*:} CAN communications line between electrically-driven intelligent brake unit and brake power supply backup unit.

DTC REPRODUCTION PROCEDURE

1.PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn power switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2.check dtc detection

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> Proceed to BR-483, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1.CHECK 12V BATTERY

Turn the power switch OFF to exit CONSULT.

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INFOID:0000000009256234

< DTC/CIRCUIT DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and <u>PG-59</u>, "Work Flow".
- 4. Check the 12V battery. Refer to PG-59, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.perform self-diagnosis (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- 2. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

10. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.check connector terminals

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections.
- 5. Disconnect the brake power supply backup unit harness connector, then check for failures of pin terminals and connections.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts and GO TO 4.

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< DTC/CIRCUIT DIAGNOSIS > 4.PERFORM SELF-DIAGNOSIS (2) With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect the brake power supply backup unit harness connector. В Connect 12V battery cable to negative terminal. 4. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 5. Repeat step 4 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D 6. Turn the power switch OFF to exit CONSULT. 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е **CAUTION:** Never operate the vehicle and CONSULT while waiting. 8. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 9. Start CONSULT and erase self-diagnosis result of "BRAKE". 10. Turn the power switch OFF to exit CONSULT. 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Н 12. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 14. Release brake pedal. 15. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "U1511" detected? YES >> GO TO 5. NO >> INSPECTION END K ${f 5}.$ CHECK POWER SWITCH ON POWER SUPPLY 1. Connect 12V battery cable to negative terminal. Turn the power switch OFF to exit CONSULT. 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** M Never operate the vehicle and CONSULT while waiting. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery". Disconnect the electrically-driven intelligent brake unit harness connector. N 6. Connect 12V battery cable to negative terminal. 7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Voltage
Connector	Connector Terminal		(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

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Electrically-driven intelligent brake unit			Voltage
Connector	Connector Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven in	y-driven intelligent brake unit IPDM E/R Continuity		IPDM E/R	
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -".</u>

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(I) With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

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CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).

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- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal		Continuity
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 13.

< DTC/CIRCUIT DIAGNOSIS > >> Repair or replace error-detected parts and GO TO 12. 12. PERFORM SELF-DIAGNOSIS (5) Α (P)With CONSULT Connect the electrically-driven intelligent brake unit harness connector. В Connect 12V battery cable to negative terminal. Turn the power switch OFF to ON without depressing the brake pedal. CAUTION: Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. D 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Е **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 8. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. Н 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is DTC "U1511" detected? YES >> GO TO 13. NO >> INSPECTION END 13. CHECK DATA MONITOR (1) K (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. 2. Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. N 5. Start CONSULT and select "BRAKE", "DATE MONITOR" according this order. Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference Value". 0 Is the inspection result normal? YES NO >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation". 14. PERFORM SELF-DIAGNOSIS (6) (P)With CONSULT Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

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Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> GO TO 15.

NO >> INSPECTION END

15. CHECK BRAKE POWER SUPPLY BACKUP UNIT CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Disconnect the brake power supply backup unit harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and brake power supply backup unit.

Electrically-driven in	ntelligent brake unit	Brake power supply backup unit		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	31		1	Existed	
	31		4	Not existed	
	31	B15	5	Not existed	
	22		1	Not existed	
E34	22		4	Existed	
	22		5	Not existed	
	37		1	Not existed	
	37		4	Not existed	
	37		5	Existed	

7. Check the continuity between electrically-driven intelligent brake unit and ground.

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Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	_	Continuity
	31	Ground	Not existed
E34	22		Not existed
E3 4	37		Not existed
	32		Existed

Is the inspection result normal?

>> GO TO 16. YES

NO >> Repair or replace error-detected parts.

16. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY

- Connect 12V battery cable to negative terminal.
- Check the voltage between the brake power supply backup unit harness connector and ground.

Brake power supply backup unit			Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	10 – 16 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Check the voltage between the brake power supply backup unit harness connector and ground.

Brake power supply backup unit		_	Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 18.

NO >> GO TO 17.

17. CHECK BRAKE POWER SUPPLY BACKUP UNIT POWER SUPPLY CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 3. Check the 15A fuse (#82).
- 4. Check the continuity and for short circuit between harness connector terminal 6 of brake power supply backup unit and 15A fuse (#82).

Is the inspection result normal?

YES >> GO TO 18.

>> Perform trouble diagnosis for 12V battery power supply. Refer to PG-15, "Wiring Diagram - BAT-NO TERY POWER SUPPLY -".

18. PERFORM SELF-DIAGNOSIS (7)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect the brake power supply backup unit harness connector.
- Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

6. Turn the power switch OFF to exit CONSULT.

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7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> GO TO 19.

NO >> INSPECTION END

19. REPLACE BRAKE POWER SUPPLY BACKUP UNIT

(P)With CONSULT

- 1. Replace the brake power supply backup unit. Refer to BR-536, "Removal and Installation".
- Connect the electrically-driven intelligent brake unit harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Turn the power switch OFF to exit CONSULT.
- 7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 9. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC "U1511" detected?

YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> INSPECTION END

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POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000009256235

1.CHECK POWER OF ELECTRICALLY-DRIVEN BRAKE UNIT WHEN POWER SWITCH IS ON

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	0 V

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal		(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK POWER CIRCUIT OF ELECTRICALLY-DRIVEN BRAKE UNIT WHEN POWER SWITCH IS ON

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit harness connector and IPDM E/R harness connector.

,	n intelligent brake nit	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E34	26	E15	62	Existed

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		
E34	26	Ground	Not existed

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Is the inspection result normal?

- YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram ON POWER SUPPLY -"</u>.
- NO >> Repair or replace error-detected parts.

3.CHECK 12V BATTERY POWER SUPPLY OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Connect 12V battery cable to negative terminal.
- 3. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage (Approx.)
Connector	Terminal		(Дриох.)
	1		
E34	2	Ground	10 – 16 V
	28		

 Turn the power switch ON without depressing the brake pedal. CAUTION:

Never set the vehicle to READY.

5. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage (Approx.)
Connector	Terminal		(дрргох.)
	1		
E34	2	Ground	10 – 16 V
	28		

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK 12V BATTERY POWER SUPPLY CIRCUIT OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

- YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram BAT-TERY POWER SUPPLY -"</u>.
- NO >> Repair or replace error-detected parts.

5.CHECK 12V BATTERY POWER SUPPLY OF BRAKE POWER SUPPLY BACKUP UNIT

1. Turn the power switch OFF to exit CONSULT.

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2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect brake power supply backup unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- 6. Check the voltage between brake power supply backup unit harness connector and ground.

Brake power su	pply backup unit		Voltage
Connector Terminal			(Approx.)
B15	6	Ground	10 – 16 V

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between brake power supply backup unit harness connector and ground.

Brake power su	pply backup unit		Voltage
Connector	Terminal		(Approx.)
B15	6	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

6.CHECK 12V BATTERY POWER CIRCUIT OF BRAKE POWER SUPPLY BACKUP UNIT

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Check the 15A fuse (#82).
- Check the continuity and for short circuit between harness connector terminal 6 of brake power supply backup unit and 15A fuse (#82).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-</u> TERY POWER SUPPLY -".

NO >> Repair or replace error-detected parts.

7.CHECK ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT GROUND

Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Continuity
Connector	Terminal		
E34	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

$oldsymbol{\delta}$.CHECK BRAKE POWER SUPPLY BACKUP UNIT GROUND

Check the continuity between brake power supply backup unit harness connector and ground.

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Brake power su	Brake power supply backup unit		Continuity
Connector	Terminal	_	Continuity
B15	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK TERMINAL

- Check for failures in the pin terminals and connections of the electrically-driven intelligent brake unit harness connector.
- Check that there is no malfunction in pin terminal and connection of IPDM E/R harness connector.
- Check for failures of pin terminals and connections in brake power supply backup unit harness connector.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace error-detected parts.

WARNING BUZZER

< DTC/CIRCUIT DIAGNOSIS >

WARNING BUZZER

Diagnosis Procedure

INFOID:0000000009256236

${f 1}.$ CHECK POWER AND GROUND CIRCUITS OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Perform diagnosis of electrically-driven intelligent brake unit power and ground circuits. BR-493, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK WARNING BUZZER CIRCUIT

Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect the electrically-driven intelligent brake unit harness connector.
- Disconnect buzzer harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and warning buzzer.

Electrically-driven intelligent brake unit		Warning buzzer		Continuity
Connector	Terminal	Connector	Terminal	
E34	36	M13	1	Existed
	20		1	Not existed
	36		2	Not existed
	20		2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK WARNING BUZZER

Check the warning buzzer. Refer to BR-497, "Component Inspection".

Is the inspection result normal?

YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> Replace the warning buzzer. Refer to BR-538, "Removal and Installation".

Component Inspection

INFOID:0000000009256237

${f 1}$.CHECK WARNING BUZZER

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-
- Disconnect buzzer harness connector.
- 5. Apply voltage of 12V between warning buzzer connector terminals 1 and 2.

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WARNING BUZZER

< DTC/CIRCUIT DIAGNOSIS >

Condition	Warning buzzer	
Voltage applied	Sound	
Voltage not applied	No sound	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the warning buzzer. Refer to <u>BR-538</u>. "Removal and Installation".

DOOR SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DOOR SWITCH CIRCUIT

Diagnosis Procedure

INFOID:000000009273035

1. CHECK VEHICLE TYPE

Α

Check the vehicle type. Refer to BR-5, "How to Check Vehicle Type".

Type 1 >> GO TO 2.

Type 2 >> GO TO 5.

2.CHECK POWER AND GROUND CIRCUITS OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Perform diagnosis of electrically-driven intelligent brake unit power and ground circuits. BR-493, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

$3. {\sf CHECK}$ FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

Turn the power switch OFF to exit CONSULT.

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:**

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Disconnect front door switch (driver side) harness connector.
- Check the continuity between electrically-driven intelligent brake unit and front door switch (driver side).

Electrically-driven intelligent brake unit		Front door switch (driver side)		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	21	B48	3	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK FRONT DOOR SWITCH (DRIVER SIDE)

Check the front door switch (driver side). Refer to BR-500, "Component Inspection".

Is the inspection result normal?

YFS >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> Replace the front door switch (driver side). Refer to DLK-217, "Removal and Installation".

${f 5}.$ CHECK POWER AND GROUND CIRCUITS OF ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Perform diagnosis of electrically-driven intelligent brake unit power and ground circuits. BR-493, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

$oldsymbol{6}$.CHECK DOOR ROOM LAMP CIRCUIT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

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DOOR SWITCH CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Disconnect BCM harness connector.
- Check the continuity between electrically-driven intelligent brake unit and BCM.

Electrically-driven intelligent brake unit		ВСМ		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	21	M25	63	Existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK DATA MONITOR (ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT)

(With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect the BCM harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 6. Start CONSULT and select "BRAKE", "DATE MONITOR" according this order.
- Check the "DOOR SWITCH". Refer to <u>BR-39</u>, "Reference Value".

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 8.

8. CHECK DATA MONITOR (BCM)

()With CONSULT

- 1. Start CONSULT and select "BCM", "DATE MONITOR" according this order.
- Check following monitor item. Refer to <u>BCS-28</u>, "Reference Value".
- "DOOR SW-DR"
- "DOOR SW-AS"
- "DOOR SW-RR"
- "DOOR SW-RL"
- "DOOR SW-BK"

Is the inspection result normal?

YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> Check interior room lamp control circuit. Refer to INL-67, "Diagnosis Procedure".

Component Inspection

INFOID:0000000009273036

1. CHECK FRONT DOOR SWITCH (DRIVER SIDE)

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the front door switch (driver side). Refer to <u>DLK-118</u>, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the front door switch (driver side). Refer to <u>DLK-217, "Removal and Installation"</u>.

BRAKE WARNING LAMP

< DTC/CIRCUIT DIAGNOSIS > BRAKE WARNING LAMP Α Component Function Check INFOID:0000000009256238 1.CHECK BRAKE WARNING LAMP FUNCTION (1) В Check that brake warning lamp turns ON for approximately several second after power switch is turned ON. Never set the vehicle to READY. Is the inspection result normal? YFS >> GO TO 2. NO >> Refer to BR-501, "Diagnosis Procedure". D 2.CHECK BRAKE SYSTEM WARNING LAMP FUNCTION (2) Check that brake warning lamp in combination meter turns ON/OFF when parking brake is operated. Е NOTE: Brake warning lamp turns ON when parking brake is operated (when parking brake switch is ON). Is the inspection result normal? BR YES >> GO TO 3. NO >> Check parking brake system. Refer to BRC-156, "Diagnosis Procedure". 3. CHECK BRAKE WARNING LAMP FUNCTION (2) Check that brake warning lamp in combination meter turns ON or OFF when brake fluid level switch is operated while brake fluid level in reservoir tank is at the specified level. NOTE: Brake warning lamp turns ON when brake fluid is less than the specified level (when brake fluid level switch is ON). Is the inspection result normal? YES >> INSPECTION END NO >> Check the brake fluid level switch system. Refer to BRC-130, "Diagnosis Procedure". Diagnosis Procedure INFOID:0000000009256239 1.check power and ground circuits of electrically-driven intelligent brake unit K Perform diagnosis of electrically-driven intelligent brake unit power and ground circuits. Refer to BR-493, "Diagnosis Procedure". Is the inspection result normal? L YES >> GO TO 2. NO >> Repair or replace error-detected parts. 2.PERFORM SELF-DIAGNOSIS (P)With CONSULT Start CONSULT and perform "BRAKE" and "ABS" self-diagnosis. Is malfunction detected? N YES >> Check the error-detected system. "BRAKE": Refer to BR-35, "CONSULT Function". • "ABS": Refer to BRC-47, "CONSULT Function". NO >> GO TO 3. 3 .CHECK THAT BRAKE WARNING LAMP TURNS ON Check the combination meter. Refer to MWI-49, "CONSULT Function". Is the inspection result normal?

>> Replace combination meter. Refer to MWI-107, "Removal and Installation".

>> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

YES

NO

BRAKE SYSTEM WARNING LAMP

< DTC/CIRCUIT DIAGNOSIS >

BRAKE SYSTEM WARNING LAMP

Component Function Check

1. CHECK BRAKE SYSTEM WARNING LAMP FUNCTION

Check that brake system warning lamp turns ON for approximately several second after power switch is turned ON.

INFOID:0000000009256240

INFOID:0000000009256241

CAUTION:

Never set the vehicle to READY.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>BR-502</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

1.check power and ground circuits of electrically-driven intelligent brake unit

Perform diagnosis of electrically-driven intelligent brake unit power and ground circuits. <u>BR-493, "Diagnosis</u> Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.PERFORM SELF-DIAGNOSIS

(P)With CONSULT

Start CONSULT and perform "BRAKE" and "ABS" self-diagnosis.

Is a malfunction detected?

YES >> Check the error-detected system.

• "BRAKE": Refer to BR-44, "DTC Index".

• "ABS": Refer to BRC-47, "CONSULT Function".

NO >> GO TO 3.

3.CHECK BRAKE SYSTEM WARNING LAMP ILLUMINATION

Check the combination meter. Refer to MWI-49, "CONSULT Function".

Is the inspection result normal?

YES >> Replace the electrically-driven intelligent brake unit. Refer to BR-533, "Removal and installation".

NO >> Replace combination meter. Refer to MWI-107, "Removal and Installation".

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UNEXPECTED BRAKE PEDAL REACTION

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS >	
UNEXPECTED BRAKE PEDAL REACTION	Α
Description	INFOID:0000000009256242
A malfunction of brake pedal feel (height or others) is detected when the brake pedal is depre	essed.
Diagnosis Procedure	INFOID:000000009256243
1.CHECK AXLE	
Check that there is no significant looseness of axle. • Front axle: Refer to FAX-7, "Inspection". • Rear axle: Refer to RAX-6, "Inspection". Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace error-detected parts.	D E
2.CHECK DISC ROTOR	BR
 Check the disc rotor runout. Front: Refer to <u>BR-519</u>, "<u>DISC ROTOR</u>: <u>Inspection and Adjustment</u>". Rear: Refer to <u>BR-521</u>, "<u>DISC ROTOR</u>: <u>Inspection and Adjustment</u>". 	G
Is the inspection result normal? YES >> GO TO 3. NO >> Grind disc rotor. 3.CHECK BRAKE FLUID LEAKAGE	Н
Check the brake fluid leakage. • Front: Refer to BR-529, "FRONT: Inspection". • Rear: Refer to BR-532, "REAR: Inspection".	1
Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts.	J
4.CHECK BRAKE PEDAL	K
Check the brake pedal items. Refer to <u>BR-514</u> , " <u>Inspection and Adjustment</u> ". Is the inspection result normal? YES >> GO TO 5. NO >> Adjust the brake pedal items. Refer to <u>BR-514</u> , " <u>Inspection and Adjustment</u> ". 5. CHECK BRAKING FORCE	L
Check the braking force.	
Is the inspection result normal? YES >> GO TO 6. NO >> Check each component of brake system.	N
6.CHECK BRAKE PERFORMANCE	0
Disconnect ABS actuator and electric unit (control unit) connector so that ABS does not ope brake force is normal in this condition. Connect harness connectors after checking. Is the inspection result normal? YES >> Normal	erate. Check that
NO >> Check each component of brake system.	

THE BRAKING DISTANCE IS LONG

< SYMPTOM DIAGNOSIS >

THE BRAKING DISTANCE IS LONG

Description INFOID:000000009256244

Brake stopping distance is long when ABS function is operated.

Diagnosis Procedure

INFOID:0000000009256245

CAUTION:

Brake stopping distance on slippery road like rough road, gravel road, or snowy road may become longer when ABS is operated than when ABS is not operated.

1. CHECK 12V BATTERY

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Check the 12V battery terminal connections. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>" and PG-59, "Work Flow".
- Check the 12V battery. Refer to <u>PG-59</u>, "Work Flow".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts and GO TO 2.

2.PERFORM SELF-DIAGNOSIS (1)

(P)With CONSULT

- 1. Connect 12V battery cable to negative terminal.
- Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

3. Repeat step 2 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 4. Turn the power switch OFF to exit CONSULT.
- 5. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

6. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 7. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 8. Turn the power switch OFF to exit CONSULT.
- 9. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 11. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 12. Release brake pedal.
- 13. Start CONSULT and perform "BRAKE" self-diagnosis.

Is DTC detected?

YES >> Check the DTC. Refer to <u>BR-44, "DTC Index"</u>. GO TO 3.

NO >> INSPECTION END

3.CHECK CONNECTOR TERMINALS

1. Turn the power switch OFF to exit CONSULT.

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< SYMPTOM DIAGNOSIS >

Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Α **CAUTION:** Never operate the vehicle and CONSULT while waiting. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Bat-4. Disconnect the electrically-driven intelligent brake unit harness connector, then check for failures of pin terminals and connections. Is the inspection result normal? YES >> GO TO 5. NO >> Repair or replace error-detected parts and GO TO 4. D 4.PERFORM SELF-DIAGNOSIS (2) (P)With CONSULT 1. Connect the electrically-driven intelligent brake unit harness connector. Е Connect 12V battery cable to negative terminal. 3. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:** BR Never set the vehicle to READY. 4. Repeat step 3 two or more times. **CAUTION:** Be sure to wait for 5 seconds or more after turning the power switch OFF. 5. Turn the power switch OFF to exit CONSULT. 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Н **CAUTION:** Never operate the vehicle and CONSULT while waiting. 7. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. Start CONSULT and erase self-diagnosis result of "BRAKE". 9. Turn the power switch OFF to exit CONSULT. 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. CAUTION: Never operate the vehicle and CONSULT while waiting. 11. Turn the power switch ON without depressing the brake pedal. **CAUTION:** Never set the vehicle to READY. 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more. 13. Release brake pedal. 14. Start CONSULT and perform "BRAKE" self-diagnosis. Is any DTC detected? YES >> Check the DTC. Refer to BR-44, "DTC Index". GO TO 5. NO >> INSPECTION END Ν 5.CHECK POWER SWITCH ON POWER SUPPLY Connect 12V battery cable to negative terminal. Turn the power switch OFF to exit CONSULT. 3. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. **CAUTION:** Р Never operate the vehicle and CONSULT while waiting. 4. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".

7. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Disconnect the electrically-driven intelligent brake unit harness connector.

6. Connect 12V battery cable to negative terminal.

< SYMPTOM DIAGNOSIS >

Electrically-driver	Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	_	(Approx.)
E34	26	Ground	0 V

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

9. Check the voltage between the electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit		_	Voltage
Connector	Terminal	(Approx	(Approx.)
E34	26	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

6.CHECK POWER SWITCH ON POWER SUPPLY CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- 4. Check the 15A fuse (#62).
- 5. Disconnect IPDM E/R harness connector.
- 6. Check the continuity between electrically-driven intelligent brake unit and IPDM E/R.

Electrically-driven intelligent brake unit		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E34	26	E15	62	Existed

7. Check the continuity between electrically-driven intelligent brake unit harness connector and ground.

Electrically-driven intelligent brake unit			Continuity
Connector	Terminal	Continuity	Continuity
E34	26	Ground	Not existed

Is the inspection result normal?

YES >> Perform trouble diagnosis for power ON power supply. Refer to <u>PG-30, "Wiring Diagram - ON POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 7.

7.PERFORM SELF-DIAGNOSIS (3)

(P)With CONSULT

- Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect IPDM E/R harness connector.
- 3. Connect 12V battery cable to negative terminal.
- 4. Turn the power switch OFF to ON without depressing the brake pedal. **CAUTION:**

Never set the vehicle to READY.

5. Repeat step 4 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

6. Turn the power switch OFF to exit CONSULT.

< SYMPTOM DIAGNOSIS >

7. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

8. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- 10. Turn the power switch OFF to exit CONSULT.
- 11. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

12. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 13. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 14. Release brake pedal.
- 15. Start CONSULT and perform "BRAKE" self-diagnosis.

Is any DTC detected?

YES >> Check the DTC. Refer to <u>BR-44, "DTC Index"</u>. GO TO 8.

NO >> INSPECTION END

8. CHECK 12V BATTERY POWER SUPPLY

1. Turn the power switch OFF to exit CONSULT.

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- 5. Connect 12V battery cable to negative terminal.
- Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

8. Check the voltage between the electrically-driven intelligent brake unit harness connector terminals.

Electrically-driven intelligent brake unit		Voltage
Connector	Terminal	(Approx.)
	1 – 32	
E34	2 – 32	10 – 16 V
	28 – 32	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 9.

9. CHECK 12V BATTERY POWER SUPPLY CIRCUIT

1. Turn the power switch OFF to exit CONSULT.

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< SYMPTOM DIAGNOSIS >

2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Disconnect 12V battery cable from negative terminal. Refer to <u>BR-7</u>, "<u>Precaution for Removing 12V Battery</u>".
- Check the 60A fusible link (#F).
- 5. Check the continuity and for short circuit between harness connector terminal 1 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 6. Check the continuity and for short circuit between harness connector terminal 2 of electrically-driven intelligent brake unit and 60A fusible link (#F).
- 7. Check the 15A fuse (#75).
- 8. Check the continuity and for short circuit between harness connector terminal 28 of electrically-driven intelligent brake unit and 15A fuse (#75).

Is the inspection result normal?

YES >> Perform trouble diagnosis for 12V battery power supply. Refer to <u>PG-15, "Wiring Diagram - BAT-TERY POWER SUPPLY -"</u>.

NO >> Repair or replace error-detected parts and GO TO 10.

10. PERFORM SELF-DIAGNOSIS (4)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is any DTC detected?

YES >> Check the DTC. Refer to BR-44, "DTC Index". GO TO 11.

NO >> INSPECTION END

11. CHECK GROUND CIRCUIT

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

< SYMPTOM DIAGNOSIS >

3.	Disconnect 12V battery cable from negative terminal. Refe	r to <u>BR-7</u>	, "Precaution f	or Removing	12V	Bat-
	tery".			_		

- 4. Disconnect the electrically-driven intelligent brake unit harness connector.
- Check the continuity between electrically-driven intelligent brake unit and ground.

Electrically-driven intelligent brake unit			Continuity	
Connector	Terminal	Continuity	Continuity	
E34	32	Ground	Existed	

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace error-detected parts and GO TO 12.

12.perform self-diagnosis (5)

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 5. Turn the power switch OFF to exit CONSULT.
- 6. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

7. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 8. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 9. Turn the power switch OFF to exit CONSULT.
- 10. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

11. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 12. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 13. Release brake pedal.
- 14. Start CONSULT and perform "BRAKE" self-diagnosis.

Is any DTC detected?

- YES >> Check the DTC. Refer to BR-44, "DTC Index". GO TO 13.
- NO >> INSPECTION END

13. CHECK DATA MONITOR

(P)With CONSULT

- 1. Connect the electrically-driven intelligent brake unit harness connector.
- 2. Connect 12V battery cable to negative terminal.
- 3. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

4. Repeat step 3 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Start CONSULT and select "BRAKE" and "DATA MONITOR" according this order.
- Check the "MOTOR POWER SUPPLY" and "CONTROL MODULE POWER". Refer to <u>BR-39</u>, "Reference Value".

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< SYMPTOM DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace the electrically-driven intelligent brake unit. Refer to <u>BR-533</u>, "Removal and installation".

14. PERFORM SELF-DIAGNOSIS (6)

(II) With CONSULT

1. Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- 3. Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 6. Start CONSULT and erase self-diagnosis result of "BRAKE".
- 7. Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- Start CONSULT and perform "BRAKE" self-diagnosis.

Is any DTC detected?

YES >> Check the DTC. Refer to <u>BR-44, "DTC Index"</u>.

NO >> GO TO 15.

15. CHECK BRAKING FORCE

Check the braking force.

Is the inspection result normal?

YES >> GO TO 16.

NO >> Check each component of brake system.

16. CHECK BRAKE PERFORMANCE

- 1. Turn the power switch OFF to exit CONSULT.
- 2. Disconnect ABS actuator control unit harness connector so that ABS does not operate. Check the brake stopping distance in this condition.
- 3. Connect harness connectors after checking.

Is the inspection result normal?

YES >> Normal

NO >> Check each component of brake system.

VEHICLE JERKS DURING

< SYMPTOM DIAGNOSIS >

VEHICLE JERKS DURING

Description INFOID:0000000009256246

The vehicle jerks when VDC function, TCS function, ABS function, EBD function, brake limited slip differential (BLSD) function or brake assist function operates.

Diagnosis Procedure

INFOID:0000000009256247

1.CHECK SYMPTOM

Check the whether or not the vehicle jerks when VDC function, TCS function, ABS function, EBD function, brake limited slip differential (BLSD) function or brake assist function operates.

Is the inspection result normal?

YES >> Normal

NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS

(P)With CONSULT

Turn the power switch OFF to ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

2. Repeat step 1 two or more times.

CAUTION:

Be sure to wait for 5 seconds or more after turning the power switch OFF.

- Turn the power switch OFF to exit CONSULT.
- 4. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

5. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- Start CONSULT and erase self-diagnosis result of "BRAKE".
- Turn the power switch OFF to exit CONSULT.
- 8. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

9. Turn the power switch ON without depressing the brake pedal.

CAUTION:

Never set the vehicle to READY.

- 10. Depress brake pedal by 100 mm (3.94 in) or more, and hold the position for 5 seconds or more.
- 11. Release brake pedal.
- 12. Start CONSULT and perform "BRAKE" self-diagnosis.

Is any DTC detected?

YES >> Check the DTC. Refer to BR-44, "DTC Index".

>> Perform symptom diagnosis for VDC function, TCS function, ABS function, EBD function, brake NO limited slip differential (BLSD) function, or brake assist function. Refer to BRC-169, "Diagnosis Procedure". GO TO 3.

3.CHECK CONNECTOR

(P)With CONSULT

- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

3. Disconnect 12V battery cable from negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".

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VEHICLE JERKS DURING

< SYMPTOM DIAGNOSIS >

- 4. Disconnect electrically-driven intelligent brake unit harness connector.
- 5. Disconnect ABS actuator and electric unit (control unit) harness connector.
- 6. Check the connector terminal for deformation, disconnection, or looseness.
- 7. Connect electrically-driven intelligent brake unit harness connector.
- 8. Connect ABS actuator and electric unit (control unit) harness connector.
- 9. Connect harness connector, start CONSULT and perform self-diagnosis for "BRAKE" again.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Poor connection of connector terminal. Repair or replace connector terminal.

4. CHECK VCM SELF DIAGNOSIS RESULT ITEMS

(P)With CONSULT

Start CONSULT and perform self-diagnosis for "EV/HEV". Refer to EVC-73, "CONSULT Function".

Is any DTC detected?

YES >> Check the DTC. Refer to EVC-102, "DTC Index".

NO >> Replace ABS actuator and electric unit (control unit). Refer to BRC-178, "Removal and Installation".

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description INFOID:0000000009256248

Symptom	Result	
The brake pedal may move during braking.		
When the brake pedal is depressed while the power switch is OFF, an operating sound may occur or the pedal stroke may feel short.	This occurs when the electrically driven	
There may be an operating noise or the brake pedal may move after the brake pedal is operated.		
An operating noise may occur when the power switch is turned OFF (system stop sound).		
The brake pedal may move when ABS is activated immediately after the READY state of the vehicle.	_	
After turning the power switch OFF and waiting for a few minutes in the car (with all doors closed and brake pedal not depressed), the electrically-driven intelligent brake unit goes into sleep mode. If the brake pedal is depressed after the unit goes into sleep mode, the brake pedal operation may be felt awkward or the depth of pedal depression insufficient for a little while.	This is not a malfunction. Depress the brake pedal fully.	

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PERIODIC MAINTENANCE

BRAKE PEDAL

Inspection and Adjustment

INFOID:0000000008746795

INSPECTION

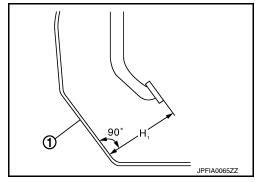
Brake Pedal Height

Check the height from the dash lower panel ① to the top face of the brake pedal (H1).

H1 : Refer to BR-555, "Brake Pedal".

CAUTION:

Perform with the floor trim pulled up.



Stop Lamp Switch and Brake Pedal Position Switch

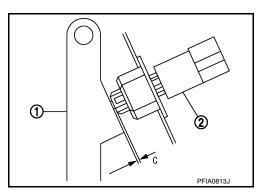
Check the clearance (C) between brake pedal lever ① and the threaded end of stop lamp switch and brake pedal position switch ②.

C: Refer to BR-555, "Brake Pedal".

CAUTION:

The stop lamp must turn OFF when the brake pedal is released. NOTE:

When checking the clearance between the brake pedal lever and threaded end of stop lamp switch and ACSD brake switch, check with the brake pedal (pad) pulled gently toward you.



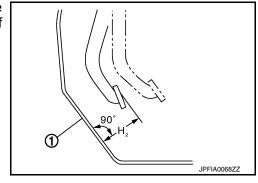
Pedal Height When Depressed

Check the height from the dash lower panel ① to the top face of the brake pedal (H2) when depressing the brake pedal with a force of 196 N (20 kg, 44 lb) while the vehicle is in READY state.

H2 : Refer to BR-555, "Brake Pedal".

CAUTION:

Perform with the floor trim pulled up.



ADJUSTMENT

Brake Pedal Height

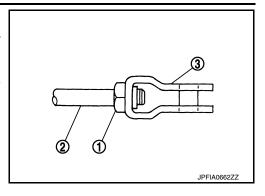
- 1. Remove the instrument lower panel. Refer to IP-17, "Removal and Installation".
- 2. Disconnect the stop lamp switch and brake pedal position switch harness connectors.
- 3. Rotate the stop lamp switch and brake pedal position switch counterclockwise by 45° to loosen them.

< PERIODIC MAINTENANCE >

- 4. Loosen the input rod lock nut (1).
- 5. Rotate the input rod ②, and adjust the brake pedal to the specified height (H1).

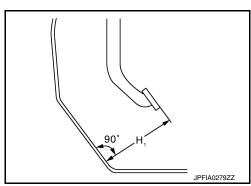
CAUTION:

The threaded part of the input rod end must project to the inside of the crevice ③.



H1 : Refer to BR-555, "Brake Pedal".

- Tighten the lock nut to the specified torque. <u>BR-533</u>, "Exploded <u>View"</u>.
- 7. After adjusting the brake pedal height, adjust the clearance between the stopper rubber and threaded end of stop lamp switch and brake pedal position switch.
- 8. Perform stroke sensor 0 point learning when the brake pedal assembly is removed and installed, or replaced. Refer to BR-76. "Work Procedure".

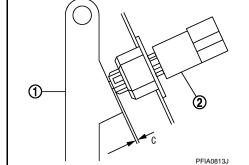


Stop Lamp Switch and Brake Pedal Position Switch

- Remove the instrument lower panel. Refer to <u>IP-17</u>, "Removal and Installation".
- 2. Disconnect the stop lamp switch and brake pedal position switch harness connectors.
- Rotate the stop lamp switch and brake pedal position switch counterclockwise by 45° to loosen them.
- 4. With the brake pedal (pad) pulled gently toward you, press in until the threaded end of stop lamp switch and brake pedal position switch ② contacts the brake pedal lever ①. Under those conditions, rotate 45° to the right to fasten it in place.

CAUTION:

 Clearance (C) between the brake pedal lever and threaded end of stop lamp switch and brake pedal position switch must be the specified value.



C: Refer to BR-555, "Brake Pedal".

- The stop lamp must turn OFF when the brake pedal is released.
- 5. Perform stroke sensor 0 point learning when the brake pedal assembly is removed and installed, or replaced. Refer to BR-76, "Work Procedure".

Pedal Height When Depressed

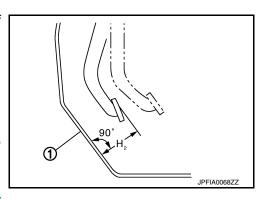
- Perform air bleeding. <u>BR-517, "Bleeding Brake System"</u>.
- Check the height from the dash lower panel ① to the top face of the brake pedal (H2) when depressing the brake pedal with a force of 196 N (20 kg, 44 lb) while the vehicle is in READY state.



CAUTION:

Perform with the floor trim pulled up.

- 3. Adjust the brake pedal height, and the clearance with the stop lamp switch and brake pedal position switch.
- 4. Perform stroke sensor 0 point learning when the brake pedal assembly is removed and installed, or replaced. Refer to BR-76. <a href=""Work Procedure".



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BRAKE FLUID

Inspection INFOID:000000008746796

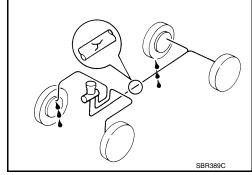
CHECK BRAKE FLUID LEVEL

- Check that the brake fluid level in the reservoir tank is within the standard (between MAX MIN lines).
- Visually check around the reservoir tank for brake fluid leakage.
- If the brake fluid level is extremely low (below the MIN line), check the amount of brake fluid and check for brake fluid leaks in the brake system.
- Check for dirt or other foreign material inside the reservoir tank, and check that no oil other than the designated brake fluid has entered the system.

BRAKE PIPING

- Check for cracking and damage to brake piping (tubes and hoses). If any abnormality is found, replace the pipe.
- With the vehicle in READY state, depress the brake pedal with a force of 785 N (80 kg) and hold down the pedal for approximately 5 seconds. Check for any brake fluid leakage.
 CAUTION:

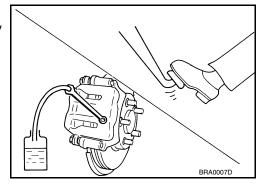
If brake fluid leakage has occurred, retighten all parts to the specified torque. If any abnormalities are found, replace the part.



Draining INFOID:000000008746797

CAUTION:

- Never allow brake fluid to contact the body or other painted surfaces. Brake fluid may damage paint.
 If it contacts a painted surface, wipe it off immediately and wash with water. However avoid washing brake components with water.
- Before performing work, turn the power switch OFF to exit CONSULT. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed. Disconnect the electrically-driven intelligent brake unit, the ABS actuator control unit harness connector or disconnect the 12V battery cable from the negative terminal. Refer to BR-7, "Precaution for Removing 12V Battery".
- Never operate the vehicle and CONSULT while waiting.
- If brake fluid contacts the disc rotor or brake caliper assembly, wipe it off immediately.
- 1. Connect a vinyl tube to air bleeder.
- Depress the brake pedal and loosen the air bleeder to gradually discharge brake fluid.



Refilling INFOID:000000008746798

CALITION:

If brake fluid contacts the disc rotor or brake caliper assembly, wipe it off immediately.

- Make sure that there is no foreign material in the reservoir tank, and refill with new brake fluid.
 CAUTION:
 - Never reuse drained brake fluid.
 - Never allow any oils other than the designated brake fluid to enter the system.

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BRAKE FLUID

< PERIODIC MAINTENANCE >

- 2. Loosen the air bleeder, slowly depress the brake pedal to the full stroke, and then release the pedal. Repeat this operation at intervals of 2 or 3 seconds until all of the brake fluid is discharged. Then close the air bleeder with the brake pedal depressed. Repeat the same work on each wheel.
- Perform air bleeding. <u>BR-517</u>, "<u>Bleeding Brake System</u>".

Bleeding Brake System

INFOID:0000000008746799

CAUTION:

- Turn the power switch without depressing the brake pedal when performing the procedure.
- Monitor the brake fluid level in the reservoir tank while performing the air bleeding.
- Never allow brake fluid to contact the body or other painted surfaces. Brake fluid may damage paint.
 If it contacts a painted surface, wipe it off immediately and wash with water. However avoid washing
 brake components with water.
- If brake fluid contacts the disc rotor or brake caliper assembly, wipe it off immediately.
- 1. Make sure that there is no foreign material in the reservoir tank, and refill with new brake fluid. **CAUTION:**
 - · Never reuse drained brake fluid.
 - Never allow any oils other than the designated brake fluid to enter the system.
- Connect a vinyl tube to the rear right wheel air bleeder.
- 3. Fully depress the brake pedal 4 to 5 times.
- Loosen the air bleeder and bleed air with the brake pedal depressed, then quickly tighten the bleeder valve.
- 5. Repeat steps 2 to 3 until all of the air is out of the brake line.
- 6. Tighten the air bleeder to the specified torque.
 - Front disc brake: Refer to BR-542, "BRAKE CALIPER ASSEMBLY: Exploded View".
 - Rear disc brake: Refer to BR-550, "BRAKE CALIPER ASSEMBLY: Exploded View".
- 7. Perform steps 2 to 6. Occasionally fill with the brake fluid in order to keep it in the reservoir tank to at least half of the MAX line. Bleed air in the following order: rear right brake → front left brake → rear left brake → front right brake.
- Check that the brake fluid level in the reservoir tank is within the specified range after air bleeding.
- 9. Check the brake pedal items, and adjust if any are not within the standard values. Refer to <u>BR-514</u>, "Inspection and Adjustment".

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< PERIODIC MAINTENANCE >

ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Inspection INFOID:000000008746800

Brake fluid leakage

Check for brake fluid leakage from the brake tube connections and the electrically-driven intelligent brake unit.

FRONT DISC BRAKE

< PERIODIC MAINTENANCE >

FRONT DISC BRAKE

BRAKE PAD

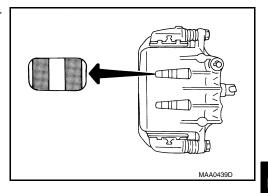
BRAKE PAD: Inspection and Adjustment

INFOID:0000000008746801

Brake pad wear inspection

Check the brake pad thickness from the inspection hole in the cylinder body. Use a scale to check if necessary.

Wear limit : Refer to <u>BR-556, "Front Disc</u> thickness <u>Brake"</u>.



ADJUSTMENT

If the brake pad is ground or replaced, or if there is an abnormal feel to the braking force, follow the procedure below and perform break-in work.

CAUTION:

- Because the brake effectiveness is reduced, pay sufficient attention to the vehicle speed.
- Perform checks on a safe road and be careful of the traffic conditions.
- 1. Drive on straight and flat roads.
- 2. Stop the vehicle by depressing the brake pedal to generate braking force that stops the vehicle in 3 to 5 seconds.
- 3. Cool the brakes.
- 4. Repeat steps 1 to 3 until the abnormal feel in braking force disappears.

DISC ROTOR

DISC ROTOR: Inspection and Adjustment

INFOID:0000000008746802

Visual inspection

Check surface of the disc rotor for uneven wear, cracks, and serious damage. Replace if necessary. Refer to <u>FAX-9</u>, "Removal and Installation".

RUNOUT INSPECTION

- 1. Use the wheel nuts and fasten the disc rotor to the wheel hub assembly (minimum 2 positions).
- 2. Check axial end play of wheel hub assembly. FAX-7, "Inspection".
- 3. Check runout using a dial indicator [at 10 mm (0.39 in) from outer edge of disc rotor].

Maximum runout : Refer to <u>BR-556, "Front Disc</u> (vehicle stopped) <u>Brake"</u>.

- 4. If runout is outside the specified value, find the minimum runout point by shifting mounting positions of the disc rotor and wheel hub by one hole.
- Perform grinding of disc rotor if runout is outside the specified value after performing the above operation. [When refinishing, use the Pro-Cut PEM On-Car brake Lathe (Tool No. 38-PFM90.5) or equivalent.]

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CAUTION:

 Perform grinding of disc rotor if disc rotor thickness is 0.3 mm (0.012 in) or more above the wear limit thickness.

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FRONT DISC BRAKE

< PERIODIC MAINTENANCE >

• Replace disc rotor if disc rotor thickness is less than 0.3 (0.012 in) above the wear limit thickness. Refer to FAX-9, "Removal and Installation".

Wear limit : Refer to BR-556, "Front Disc Brake".

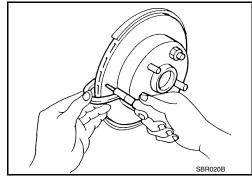
thickness

THICKNESS INSPECTION

Check thickness of the disc rotor using a micrometer. Replace disc rotor if thickness is under the wear limit. <u>FAX-9</u>, "Removal and Installation".

Wear limit : Refer to BR-556, "Front Disc

thickness **Brake**".



ADJUSTMENT

If the brake pad is ground or replaced, or if there is an abnormal feel to the braking force, follow the procedure below and perform break-in work.

CAUTION:

- Because the brake effectiveness is reduced, pay sufficient attention to the vehicle speed.
- Perform checks on a safe road and be careful of the traffic conditions.
- 1. Drive on straight and flat roads.
- 2. Stop the vehicle by depressing the brake pedal to generate braking force that stops the vehicle in 3 to 5 seconds.
- 3. Cool the brakes.
- 4. Repeat steps 1 to 3 until the abnormal feel in braking force disappears.

REAR DISC BRAKE

< PERIODIC MAINTENANCE >

REAR DISC BRAKE

BRAKE PAD

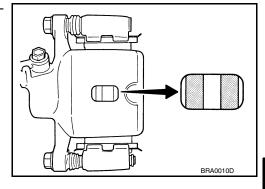
BRAKE PAD: Inspection and Adjustment

INFOID:0000000008746803

Brake pad wear inspection

Check the brake pad thickness from the inspection hole in the cylinder body. Use a scale to check it if necessary.

Wear limit : Refer to <u>BR-556, "Rear Disc Brake"</u>. thickness



ADJUSTMENT

If the brake pad is ground or replaced, or if there is an abnormal feel to the braking force, follow the procedure below and perform break-in work.

CAUTION:

- Because the brake effectiveness is reduced, pay sufficient attention to the vehicle speed.
- Perform checks on a safe road and be careful of the traffic conditions.
- 1. Drive on straight and flat roads.
- 2. Stop the vehicle by depressing the brake pedal to generate braking force that stops the vehicle in 3 to 5 seconds.
- 3. Cool the brakes.
- 4. Repeat steps 1 to 3 until the abnormal feel in braking force disappears.

DISC ROTOR

DISC ROTOR: Inspection and Adjustment

INFOID:0000000008746804

Visual inspection

Check surface of the disc rotor for uneven wear, cracks, and serious damage. Replace if necessary. Refer to RAX-7, "Removal and Installation".

RUNOUT INSPECTION

- 1. Use the wheel nuts and fasten the disc rotor to the wheel hub assembly (minimum 2 positions).
- 2. Check axial end play of wheel hub assembly. RAX-6, "Inspection".
- 3. Check runout using a dial indicator [at 10 mm (0.39 in) from outer edge of disc rotor].

Maximum runout (ve- : Refer to <u>BR-556, "Rear Disc</u> hicle stopped) <u>Brake"</u>.

- 4. If runout is outside the specified value, find the minimum runout point by shifting mounting positions of the disc rotor and wheel hub by one hole.
- Perform grinding of disc rotor if runout is outside the specified value after performing the above operation. [When refinishing, use the Pro-Cut PEM On-Car brake Lathe (Tool No. 38-PFM90.5) or equivalent.]

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CAUTION:

 Perform grinding of disc rotor if disc rotor thickness is 0.3 mm (0.012 in) or more above the wear limit thickness.

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REAR DISC BRAKE

< PERIODIC MAINTENANCE >

• Replace disc rotor if disc rotor thickness is less than 0.3 mm (0.012 in) above the wear limit thickness. Refer to RAX-7, "Removal and Installation".

Wear limit : Refer to <u>BR-556</u>, "Rear <u>Disc Brake"</u>.

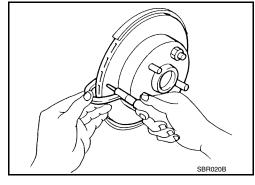
thickness

THICKNESS INSPECTION

Check thickness of the disc rotor using a micrometer. Replace disc rotor if thickness is under the wear limit. Refer to RAX-7, "Removal and Installation".

Wear limit : Refer to <u>BR-556</u>, "Rear <u>Disc Brake"</u>.

thickness



ADJUSTMENT

If the brake pad is ground or replaced, or if there is an abnormal feel to the braking force, follow the procedure below and perform break-in work.

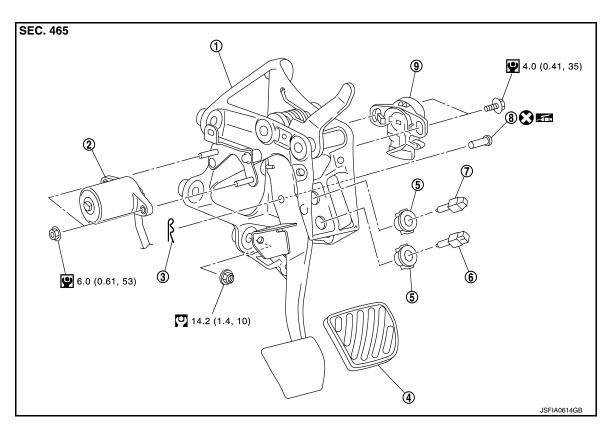
CAUTION:

- Because the brake effectiveness is reduced, pay sufficient attention to the vehicle speed.
- Perform checks on a safe road and be careful of the traffic conditions.
- 1. Drive on straight and flat roads.
- 2. Stop the vehicle by depressing the brake pedal to generate braking force that stops the vehicle in 3 to 5 seconds.
- 3. Cool the brakes.
- 4. Repeat steps 1 to 3 until the abnormal feel in braking force disappears.

REMOVAL AND INSTALLATION

BRAKE PEDAL

Exploded View



- Brake pedal assemblyBrake pedal pad
- 2 Hysteresis unit assembly
- (5) Clip
- Stop lamp switch

 8 Clevis pin

- Snap pin
- (6) Brake pedal position switch
- Stroke sensor

Apply multi-purpose grease.

- : N·m (kg-m, ft-lb)
- : N·m (kg-m, in-lb)
- Always replace after every disassembly.

Removal and Installation

REMOVAL

CAUTION:

Prevent impact on brake pedal assembly. To prevent damage to the parts, never drop brake pedal assembly.

- 1. Remove instrument lower panel. Refer to IP-17, "Removal and Installation".
- 2. Disconnect stop lamp switch and brake pedal position switch harness connector.
- 3. Disconnect stroke sensor harness connector.

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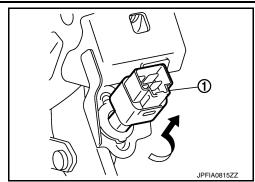
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< REMOVAL AND INSTALLATION >

4. Rotate the stop lamp switch and the brake pedal position switch (1) counter clockwise to remove.



- 5. Remove snap pin ① and clevis pin ② from clevis ③ of electrically-driven intelligent brake.
- Disconnect the accelerator pedal harness connector.
- Slide the steering column assembly downward. Refer to <u>ST-36</u>, "Removal and Installation".
- 8. Remove the brake pedal assembly.

CAUTION:

- To prevent damage to the parts, hold the electricallydriven intelligent brake unit so as not to drop out or contact them other parts.
- To prevent damage to the parts, never allow the stroke of brake pedal after removal.
- If the brake pedal is displaced, move it by 100 mm (3.94 in) to check that the hysteresis unit assembly moves in conjunction with brake pedal. If a malfunction exists, replace hysteresis unit assembly.
- 9. Remove hysteresis unit assembly from brake pedal assembly.

CAUTION:

To prevent damage to the parts, never drop hysteresis unit assembly.

10. Remove the stroke sensor from brake pedal assembly.

CAUTION:

To prevent damage to the parts, never drop stroke sensor.

- 11. Remove accelerator pedal from brake pedal assembly. Refer to ACC-4, "Removal and Installation".
- 12. Perform inspection after removal. Refer to BR-524, "Inspection and Adjustment".

INSTALLATION

Note the following, and install in the reverse order of removal.

Never allow the stroke of brake pedal.

CAUTION:

If the brake pedal is displaced, move it by 100 mm (3.94 in) to check that the hysteresis unit assembly moves in conjunction with brake pedal. If a malfunction exists, replace hysteresis unit assembly.

- Brake pedal assembly must be replaced after an impact.
- Apply the multi-purpose grease to the clevis pin and the mating faces. (Not necessary if grease has been already applied)

CAUTION:

Never reuse the clevis pin

NOTE:

The clevis pin may be inserted in either direction.

- Perform stroke sensor 0 point learning when brake pedal assembly removed and installed, or replaced.
 Refer to BR-76, "Work Procedure".
- Perform stroke sensor 0 point learning when stroke sensor removed and installed, or replaced. Refer to <u>BR-76</u>, "Work Procedure".
- Perform adjustment after installation. Refer to BR-524, "Inspection and Adjustment".

Inspection and Adjustment

INFOID:0000000008746807

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INSPECTION AFTER REMOVAL

BRAKE PEDAL

< REMOVAL AND INSTALLATION >

- Check the brake pedal assembly for bend, damage, and cracks on the welded parts. If any is found, replace brake pedal assembly.
- Move it by 100 mm (3.94 in) to check that the hysteresis unit assembly moves in conjunction with brake pedal. If a malfunction exists, replace hysteresis unit assembly.

ADJUSTMENT AFTER INSTALLATION

- Adjust each item of brake pedal after installing the brake pedal assembly to the vehicle. Refer to <u>BR-514</u>, <u>"Inspection and Adjustment"</u>.
- Perform the release position learning of the accelerator pedal. Refer to EVC-146, "Work Procedure".

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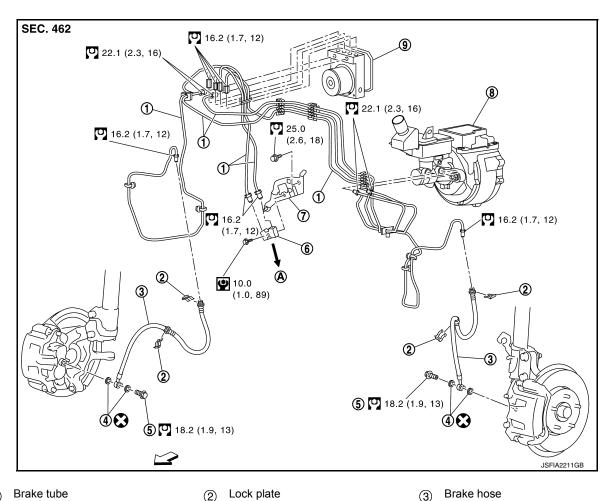
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BRAKE PIPING

FRONT

FRONT: Exploded View

INFOID:0000000008746808



Union bolt

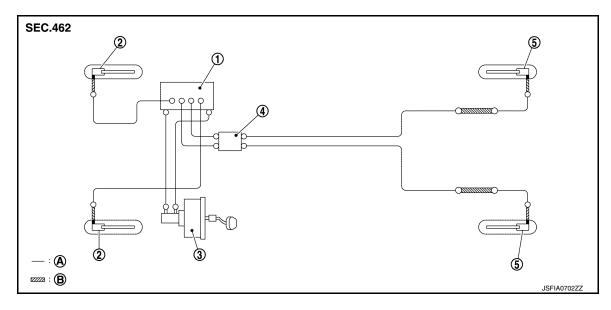
Electrically-driven intelligent brake

- Brake tube
- Copper washer
- Connector bracket
- To rear brake tube
- : N·m (kg-m, ft-lb)
- P: N·m (kg-m, in-lb)
- : Always replace after every disassembly.
- ∀ : Vehicle front

- Brake hose
- Connector
- ABS actuator and electric unit (con-

FRONT: Hydraulic Piping

INFOID:0000000008746809



- ABS actuator and electric unit (control unit)
- 2 Front disc brake

3 Electrically-driven intelligent brake unit

(4) Connector

Rear disc brake

Brake tube

Brake hose

- : Flare nut
- : Union bolt

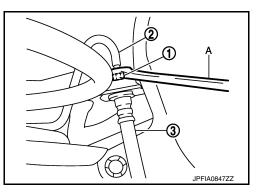
FRONT: Removal and Installation

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REMOVAL

CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
 off immediately and wash with water if it gets on a painted surface. For brake component parts,
 never wash them with water.
- Never depress brake pedal. While removing the brake hose or brake tube. If this is not complied with, brake fluid may splash.
- If the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- Remove tires with power tool.
- Drain brake fluid. Refer to BR-516, "Draining".
- 3. Loosen the flare nut ① with a flare nut wrench (A) and separate the brake tube ② from the brake hose ③.
 - **CAUTION:**
 - To prevent damage to the parts, never scratch the flare nut and the brake tube.
 - To prevent damage to the parts, never bend sharply, twist or strongly pull out the brake hoses and tubes.
 - To prevent the inclusion of foreign matter, cover open end of brake tubes and hoses when disconnecting to prevent entrance of dirt.



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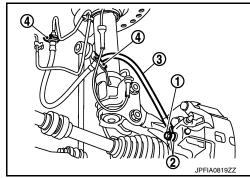
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BRAKE PIPING

< REMOVAL AND INSTALLATION >

- 4. Remove the union bolt ① and copper washers ②, and remove the brake hose ③ from the brake caliper assembly.
- 5. Remove the lock plate (4) and remove the brake hose.



INSTALLATION

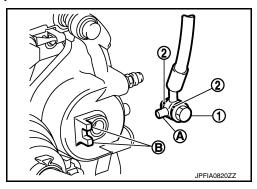
CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
 off immediately and wash with water if it gets on a painted surface. For brake component parts,
 never wash them with water.
- Never depress brake pedal. While removing the brake hose or brake tube. If this is not complied with, brake fluid may splash.
- If the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Assemble the union bolt ① and the copper washer ② to the brake hose.

CAUTION:

To prevent leakage of brake fluid, never reuse the copper washer.

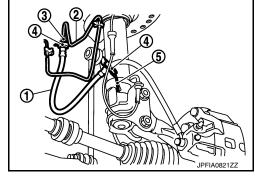
2. Align the brake hose pin (A) with the brake caliper assembly projection (B), and tighten the union bolt to the specified torque.



3. Install the brake tube ② to the brake hose ①, temporarily tighten the flare nut ③ by hand until it does not rotate further, and fix the brake hose to the bracket ⑤ with the lock plate ④.

CAUTION:

To prevent leakage of brake fluid, check that all brake hoses and brake tubes are not twisted and bent.



4. Tighten the flare nut to the specified torque with a crowfoot (A) and torque wrench (B).

CAUTION:

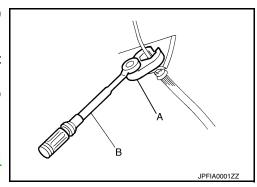
To prevent damage to the parts, never scratch the flare nut and the brake tube.

5. Refill with new brake fluid and perform the air bleeding. Refer to BR-517, "Bleeding Brake System".

CAUTION:

Never reuse drained brake fluid.

- 6. Install tires with power tool. Refer to <u>WT-49, "Removal and Installation"</u>.
- 7. Perform inspection after installation. Refer to <u>BR-529, "FRONT:</u> <u>Inspection".</u>



FRONT: Inspection

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INSPECTION AFTER INSTALLATION

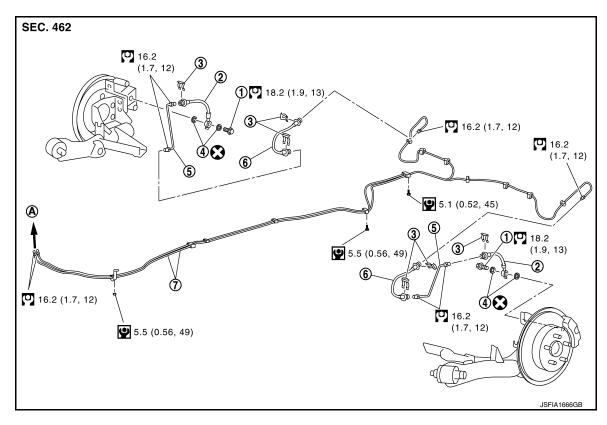
- 1. Check the brake hoses and tubes for the following: no scratches; no twist and deformation; no interference with other components when steering the steering wheel; no looseness at connections.
- Depress the brake pedal with a force of 785 N (80 kg, 176 lb) and hold down the pedal for approximately 5 seconds with set the vehicle to READY. Check for any fluid leakage.
 CAUTION:

Retighten the applicable connection to the specified torque and repair any abnormal (damaged, worn or deformed) part if any brake fluid leakage is present.

REAR

REAR: Exploded View

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① Union bolt

Brake hose A

3 Lock plate

Copper washer

(5) Brake tube A

Brake hose B

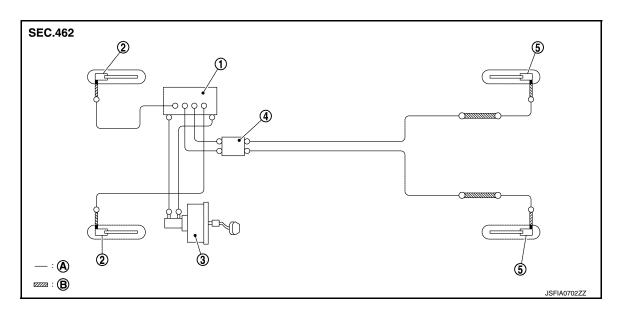
- (7) Brake tube B
- (A) To connector
- : N·m (kg-m, ft-lb)
- P: N·m (kg-m, in-lb)
- : Always replace after every disassembly.

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Revision: October 2013 BR-529 2013 LEAF

REAR: Hydraulic Piping

INFOID:0000000008746813



- ABS actuator and electric unit (control unit)
- Connector
- A Brake tube
- : Flare nut
- : Union bolt

- ② Front disc brake
- (5) Rear disc brake
- Brake hose

③ Electrically-driven intelligent brake unit

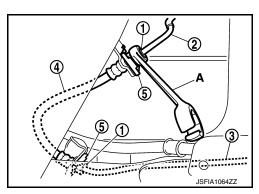
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REAR: Removal and Installation

REMOVAL

CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
 off immediately and wash with water if it gets on a painted surface. For brake component parts,
 never wash them with water.
- Never depress brake pedal. While removing the brake hose or brake tube. If this is not complied with, brake fluid may splash.
- · If the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Remove tires with power tool.
- Drain brake fluid. Refer to BR-516, "Draining".
- 3. Loosen the flare nut ① with a flare nut wrench (A) and separate the brake tube B ② and brake tube A ③ from the hose B ④. CAUTION:
 - To prevent damage to the parts, never scratch the flare nut and the brake tube.
 - To prevent damage to the parts, never bend sharply, twist or strongly pull out the brake hoses and tubes.
 - To prevent the inclusion of foreign matter, cover open end of brake tubes and hoses when disconnecting to prevent entrance of dirt.
- 4. Remove the lock plate (5) and remove the brake hose B.



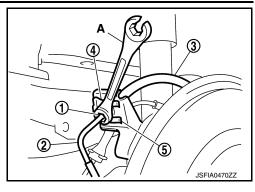
BRAKE PIPING

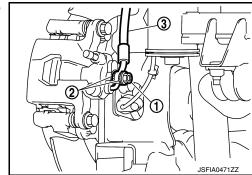
< REMOVAL AND INSTALLATION >

5. Loosen the flare nut ① with a flare nut wrench (A) and separate the brake tube A ② from the hose A ③.

CAUTION:

- To prevent damage to the parts, never scratch the flare nut and the brake tube.
- To prevent damage to the parts, never bend sharply, twist or strongly pull out the brake hoses and tubes.
- To prevent the inclusion of foreign matter, cover open end of brake tubes and hoses when disconnecting to prevent entrance of dirt.
- 6. Remove the lock plate ④, and remove brake hose A from brake hose bracket ⑤.
- 7. Remove the union bolt ① and copper washers ②, and remove the brake hose A ③ from the brake caliper assembly.





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INSTALLATION

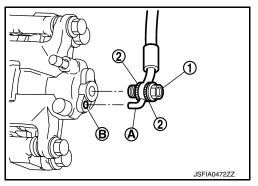
CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
 off immediately and wash with water if it gets on a painted surface. For brake component parts,
 never wash them with water.
- Never depress brake pedal. While removing the brake hose or brake tube. If this is not complied with, brake fluid may splash.
- If the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Assemble the union bolt ① and the copper washer ② to the brake hose A.

CAUTION:

To prevent leakage of brake fluid, never reuse the copper washer.

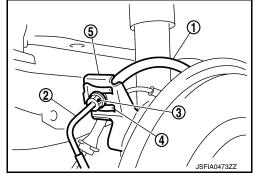
2. Align the brake hose B L-pin (A) with the brake caliper assembly hole (B), and tighten the union bolt to the specified torque.



3. Install the brake tube A ② to the brake hose A ①, temporarily tighten the flare nut ③ by hand until it does not rotate further, and fix the brake hose A to the brake hose bracket ⑤ with the lock plate ④.

CAUTION:

To prevent leakage of brake fluid, check that all brake hoses and brake tubes are not twisted and bent.



Revision: October 2013 BR-531 2013 LEAF

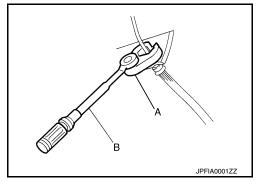
BRAKE PIPING

< REMOVAL AND INSTALLATION >

4. Tighten the flare nut to the specified torque with a crowfoot (A) and torque wrench (B).

CAUTION:

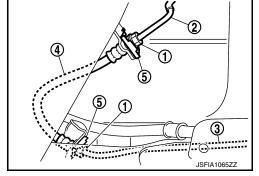
To prevent damage to the parts, never scratch the flare nut and the brake tube.



5. Install the brake tube B ② and brake tube A ③ to the brake hose B ④, temporarily tighten the flare nut ① by hand until it does not rotate further, and fix the brake hose B to the bracket with the lock plate ⑤.

CAUTION:

To prevent leakage of brake fluid, check that all brake hoses and brake tubes are not twisted and bent.



6. Tighten the flare nut to the specified torque with a crowfoot (A) and torque wrench (B).

CAUTION:

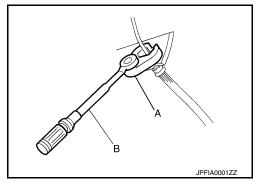
To prevent damage to the parts, never scratch the flare nut and the brake tube.

7. Refill with new brake fluid and perform the air bleeding. Refer to BR-517, "Bleeding Brake System".

CAUTION:

Never reuse drained brake fluid.

- 8. Install tires with power tool. Refer to <u>WT-49, "Removal and Installation"</u>.
- 9. Perform inspection after installation. Refer to BR-532, "REAR: Inspection".



REAR : Inspection

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INSPECTION AFTER INSTALLATION

- 1. Check the brake hoses and tubes for the following: no scratches; no twist and deformation; no looseness at connections.
- Depress the brake pedal with a force of 785 N (80 kg, 176 lb) and hold down the pedal for approximately 5 seconds with set the vehicle to READY. Check for any fluid leakage.

 CAUTION:

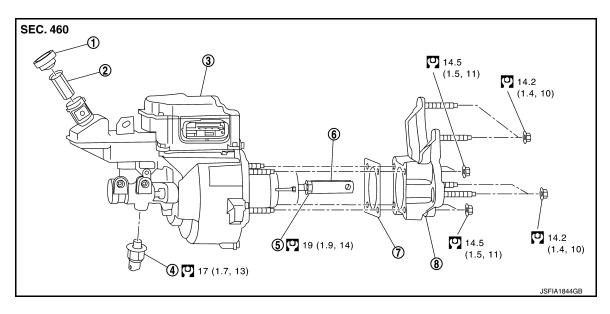
Retighten the applicable connection to the specified torque and repair any abnormal (damaged, worn or deformed) part if any brake fluid leakage is present.

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< REMOVAL AND INSTALLATION >

ELECTRICALLY-DRIVEN INTELLIGENT BRAKE UNIT

Exploded View INFOID:0000000008746816



Reservoir cap

Oil strainer

Electrically-driven intelligent brake unit

- Master cylinder pressure sensor
- Lock nut

Clevis

Gasket (7)

Spacer

: N·m (kg-m, ft-lb)

Removal and installation

CAUTION:

Never disassemble the electrically-driven intelligent brake unit.

REMOVAL

CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it off immediately and wash with water if it gets on a painted surface. For brake component parts, never wash them with water.
- Never depress brake pedal. While removing the brake tube. If this is not complied with, brake fluid may splash.
- Perform inspection before removal. Refer to <u>BR-535</u>, "Inspection and Adjustment".
- Turn the power switch OFF to exit CONSULT.
- Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- Remove 12V battery. Refer to <u>PG-65</u>, "<u>Removal and Installation</u>".
- Move the fuse box.
- Drain brake fluid. Refer to <u>BR-516</u>, "<u>Draining</u>".
- 7. Remove cowl top cover. Refer to EXT-19, "Removal and Installation".
- Remove wiper drive assembly. Refer to <u>WW-59</u>, "Removal and Installation".
- Remove cowl top extension. Refer to EXT-19, "Removal and Installation".
- 10. Disconnect the brake fluid level switch harness connector.
- 11. Disconnect the master cylinder pressure sensor harness connector.

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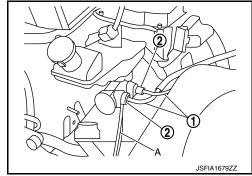
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< REMOVAL AND INSTALLATION >

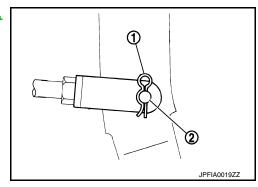
12. Separate the brake tube ① from electrically-driven intelligent brake unit with a flare nut wrench (A).

CAUTION:

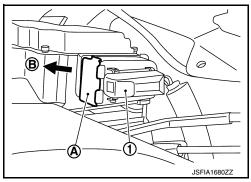
To prevent damage to the parts, never scratch the flare nut ② and the brake tube.



13. Remove snap pin ① and clevis pin ②. Refer to <u>BR-523</u>, "Removal and Installation".



- 14. Disconnect electrically-driven intelligent brake unit harness connector, follow the procedure described below.
- a. Pull the lever (A) of electrically-driven intelligent brake unit harness connector (1) in the direction (B).



- b. Disconnect electrically-driven intelligent brake unit harness connector (1).
- 15. Remove nuts on electrically-driven intelligent brake unit and brake pedal assembly.

CAUTION:

To prevent damage to the parts, hold the electrically-driven intelligent brake unit so as to avoid dropping out.

16. Remove electrically-driven intelligent brake unit.

CAUTION:

To prevent damage to the parts, never deform or bend the brake tubes.

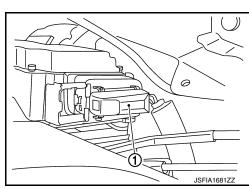


- 18. Remove spacer and gasket from electrically-driven intelligent brake unit.
- 19. Perform inspection after removal. Refer to BR-535, "Inspection and Adjustment".

INSTALLATION

CAUTION:

Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
off immediately and wash with water if it gets on a painted surface. For brake component parts,
never wash them with water.

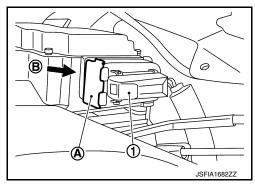


< REMOVAL AND INSTALLATION >

• Never depress brake pedal. While removing the brake tube. If this is not complied with, brake fluid may splash.

Note the following, and install in the reverse order of removal.

- Be careful not to damage electrically-driven intelligent brake unit stud bolt threads. If electrically-driven intelligent brake unit is tilted during installation, the dash panel may damage the threads.
- Never deform or bend the brake tubes when installing the electrically-driven intelligent brake unit.
- Temporarily tighten the flare nut of brake tube to the electrically-driven intelligent brake unit by hand. Then tighten it to the specified torque with a crowfoot and torque wrench.
- Never reuse the clevis pin.
- Perform the air bleeding. Refer to <u>BR-517</u>, "<u>Bleeding Brake System</u>".
- Check each item of brake pedal. Adjust it if the measurement value is not the standard. Refer to <u>BR-514</u>, "Inspection and Adjustment".
- Perform stroke sensor 0 point learning when electrically-driven intelligent brake unit is removed and installed, or replaced. Refer to BR-76, "Work Procedure".



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Inspection and Adjustment

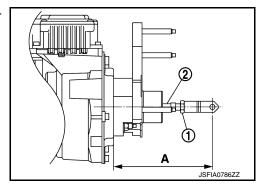
INSPECTION BEFORE REMOVAL

Check the brake fluid level switch. Refer to BRC-132, "Component Inspection".

INSPECTION AFTER REMOVAL

Input Rod Length Inspection

- 1. Loosen the lock nut ① and adjust the input rod ② to the specified length (A).
 - A : Refer to <u>BR-556</u>, "<u>Electrically-driven Intelligent</u> Brake".
- Tighten the lock nut to the specified torque.



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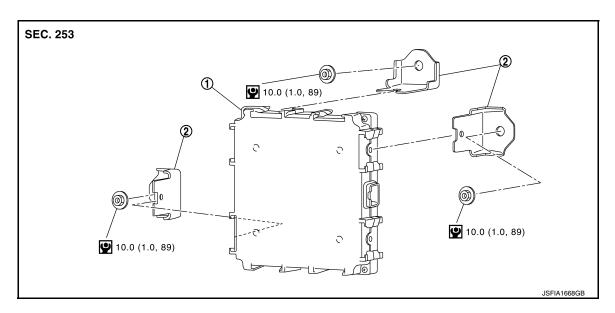
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Revision: October 2013 BR-535 2013 LEAF

BRAKE POWER SUPPLY BACKUP UNIT

Exploded View



(1) Brake power supply backup unit

② Bracket

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000008746820

REMOVAL

- Turn the power switch OFF to exit CONSULT.
- 2. Close all doors (including back door), check that the room lamp is OFF, get out of the vehicle, and wait for 3 minutes or more with all doors closed.

CAUTION:

Never operate the vehicle and CONSULT while waiting.

- 3. Remove luggage side lower finisher LH. Refer to INT-43, "LUGGAGE SIDE LOWER FINISHER: Removal and Installation".
- 4. Disconnect brake power supply backup unit harness connector.
- Remove brake power supply backup unit and bracket. CAUTION:

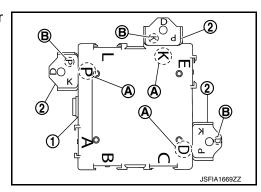
To prevent damage to the parts, never drop removed parts.

6. Remove bracket from brake power supply backup unit.

INSTALLATION

Note the following, and install in the reverse order of removal.

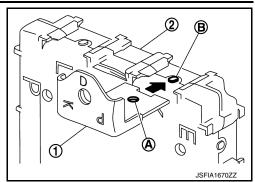
• Align the direction of mark (A) located on the back of brake power supply backup unit (1) with that of mark (B) on bracket (2).



BRAKE POWER SUPPLY BACKUP UNIT

< REMOVAL AND INSTALLATION >

• To install bracket ① to brake power supply backup unit ②, securely insert the bracket until protrusion ® of the brake power supply unit protrudes from lock hole ® of the bracket.



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WARNING BUZZER

< REMOVAL AND INSTALLATION >

WARNING BUZZER

Removal and Installation

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REMOVAL

- 1. Remove glove box cover assembly. Refer to IP-17, "Removal and Installation".
- 2. Disconnect warning buzzer harness connector.
- 3. Remove warning buzzer.

INSTALLATION

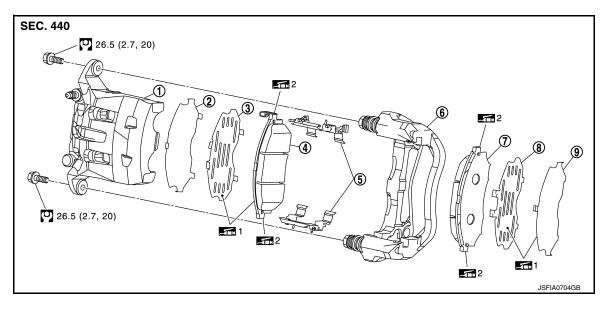
Install in the reverse order of removal.

FRONT DISC BRAKE

BRAKE PAD

BRAKE PAD: Exploded View

INFOID:0000000008746822



- Cylinder body
 - Inner pad (with pad wear sensor)
- Outer pad

- 2 Inner shim cover
- 5 Pad retainer
- Outer shim

- 3 inner shim
- 6) Torque member
- Outer shim cover

1: Apply MOLYKOTE® AS880N or silicone-based grease.

2: Apply MOLYKOTE® 7439 or equivalent.

: N·m (kg-m, ft-lb)

Molykote is a registered trademark of Dow Corning Corporation.

BRAKE PAD: Removal and Installation

REMOVAL

WARNING:

Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

CAUTION:

- Never depress brake pedal. While removing the brake pads because the piston may pop out.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it
 off.
- 1. Remove tires with power tool.
- 2. Remove lower sliding pin bolt.

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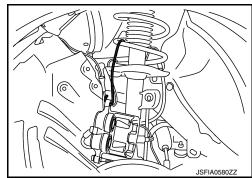
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Revision: October 2013 BR-539 2013 LEAF

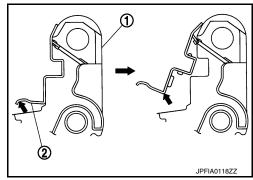
FRONT DISC BRAKE

< REMOVAL AND INSTALLATION >

Remove cylinder body from torque member, and suspend the cylinder body with suitable wire so that the brake hose will not stretch.



- 4. Remove the brake pads, shims, shim covers and pad retainers from the torque member. **CAUTION:**
 - To prevent damage to the parts, never deform the pad retainer ② when removing the pad retainer from the torque member ①.
 - Never damage the piston boot.
 - To prevent damage to the parts, never drop the brake pads, shims, and the shim covers.
 - Remember each position of the removed brake pads.
- Perform inspection after removal. Refer to <u>BR-541, "BRAKE PAD : Inspection"</u>.



INSTALLATION

WARNING:

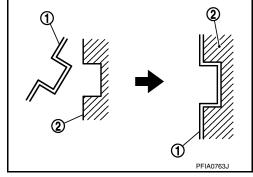
Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

CAUTION:

- Never depress brake pedal. While removing the brake pads or the cylinder body because the piston may pop out.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Install the pad retainers ① to the torque member ② if the pad retainers has been removed.

CAUTION:

- Securely assemble the pad retainers so that it will not be lifted up from the torque member.
- To prevent damage to the parts, never deform the pad retainers.



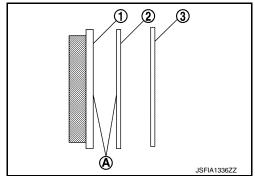
< REMOVAL AND INSTALLATION >

2. Apply MOLYKOTE[®] AS880N or silicone-based grease to the mating faces (a) between the inner pad (1) and the inner shim (2), and install the inner shim and inner shim cover (3) to the inner pad.

CAUTION:

Always replace the shim together with the shim cover when replacing the brake pad.

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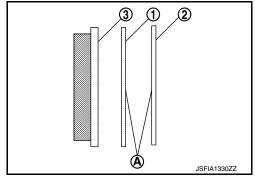
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3. Apply MOLYKOTE® AS880N or silicone-based grease to the mating faces ⓐ between the outer shim cover ② and the outer shim ①, and install the outer shim and outer shim cover to the outer pad ③.

CAUTION:

Always replace the shim together with the shim cover when replacing the brake pad.

Molykote is a registered trademark of Dow Corning Corporation.



4. Apply MOLYKOTE[®] 7439 or equivalent to the mating faces (A) between the outer pad (1) and the pad retainers.

Molykote is a registered trademark of Dow Corning Corporation.

5. Install the brake pads to the torque member.

CAUTION:

To prevent damage to the parts, never deform the pad retainers.

Install cylinder body to torque member.

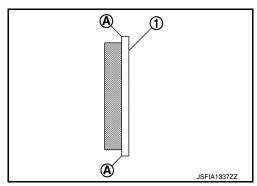
CAUTION:

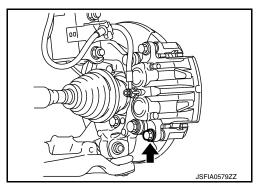
- Never damage the piston boot.
- When replacing brake pad with new one, check a brake fluid level in the reservoir tank because brake fluid returns to reservoir tank when pressing piston in.

NOTE:

Use a disc brake piston tool to easily press piston.

- Install the lower sliding pin bolt and tighten it to the specified torque.
- 8. Depress the brake pedal several times to check that no drag feel is present for the front disc brake. Refer to BR-541. "BRAKE PAD: Inspection".
- Install tires with power tool. Refer to <u>WT-49</u>, "<u>Removal and Installation</u>".





BRAKE PAD: Inspection

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INSPECTION AFTER REMOVAL

- Replace the shims and the shim covers if rust is excessively attached.
- Eliminate rust on the pad retainers and the torque member. Replace them if rust is excessively attached.

INSPECTION AFTER INSTALLATION

Revision: October 2013 BR-541 2013 LEAF

< REMOVAL AND INSTALLATION >

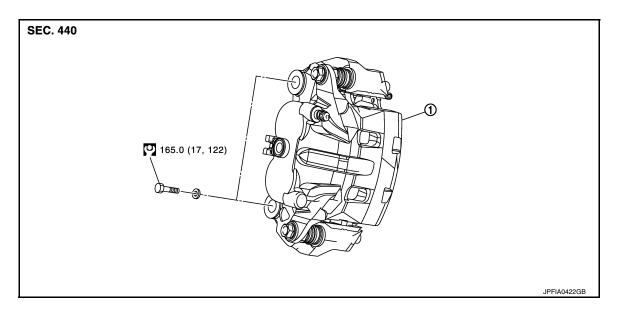
- Check a drag of front disc brake. If any drag is found, follow the procedure described below.
- Remove brake pads. Refer to <u>BR-539</u>, "BRAKE PAD: Removal and Installation".
- 2. Press the pistons. Refer to BR-539, "BRAKE PAD: Removal and Installation".
- 3. Install brake pads. Refer to BR-539, "BRAKE PAD: Removal and Installation".
- 4. Securely depress the brake pedal several times.
- 5. Check a drag of front disc brake again. If any drag is found, disassemble the cylinder body and replace if necessary. Refer to BR-544, "BRAKE CALIPER ASSEMBLY: Disassembly and Assembly"
- Burnish contact surfaces brake pads and disc rotor after refinishing or replacing brake pads, or if a soft pedal occurs at very low mileage. Refer to BR-519, "BRAKE PAD: Inspection and Adjustment".

BRAKE CALIPER ASSEMBLY

BRAKE CALIPER ASSEMBLY: Exploded View

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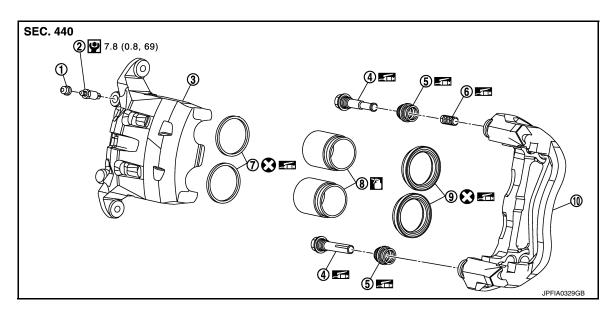
REMOVAL



(1) Brake caliper assembly

: N·m (kg-m, ft-lb)

DISASSEMBLY



< REMOVAL AND INSTALLATION >

Cap (1)

(4)

Bleeder valve (2)

Sliding pin boot

- Cylinder body (3)
- Bushing

Sliding pin Piston seal

Piston

(5)

Piston boot

- Torque member
- Apply rubber grease.
- : Apply brake fluid.
- P: N·m (kg-m, in-lb)
- : Always replace after every disassembly.

BRAKE CALIPER ASSEMBLY: Removal and Installation

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REMOVAL

WARNING:

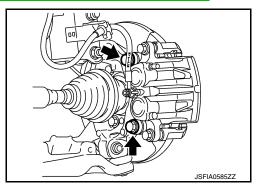
Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it out immediately and wash with water if it gets on a protect surface. For brake component parts, never wash them with water.
- Never depress brake pedal. While removing the brake hose. If this is not complied with, brake fluid may splash.
- To prevent damage to the parts, never drop removed parts.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it
- 1. Remove tires with power tool.
- 2. Fix the disc rotor using wheel nuts.
- 3. Drain brake fluid. Refer to BR-516, "Draining".
- Separate brake hose from caliper assembly. Refer to <u>BR-527</u>, "FRONT: Removal and Installation".
- 5. Remove torque member mounting bolts, and remove brake caliper assembly.

CAUTION:

To prevent damage to the parts, never drop brake pad and caliper assembly.

When removing disc rotor. Refer to <u>FAX-9</u>, "<u>Removal and Instal-</u> lation".



INSTALLATION

WARNING:

Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it out immediately and wash with water if it gets on a protect surface. For brake component parts, never wash them with water.
- Never depress brake pedal. While removing the brake hose. If this is not complied with, brake fluid may splash.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it off.

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< REMOVAL AND INSTALLATION >

- 1. Install disc rotor. Refer to FAX-9, "Removal and Installation".
- Install the brake caliper assembly to the steering knuckle and tighten the torque member mounting bolts to the specified torque.

CAUTION:

Never spill or splash any grease and moisture on the brake caliper assembly mounting face, threads, mounting bolts and washers. Wipe out any grease and moisture.

- 3. Install brake hose. Refer to <u>BR-527, "FRONT : Removal and Installation".</u>
- 4. Perform the air bleeding. Refer to <u>BR-517, "Bleeding Brake System"</u>.
- 5. Check a drag of front disc brake. If any drag is found, refer to BR-546, "BRAKE CALIPER ASSEMBLY: Inspection".
- 6. Install tires with power tool. Refer to WT-49, "Removal and Installation".
- 7. Perform inspection after installation. Refer to BR-546, "BRAKE CALIPER ASSEMBLY: Inspection".

BRAKE CALIPER ASSEMBLY: Disassembly and Assembly

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DISASSEMBLY

NOTE:

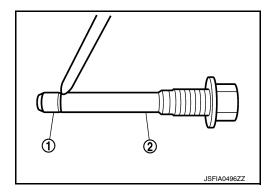
Never remove the torque member, brake pad and pad retainers when disassembling and assembling the cylinder body.

1. Remove the sliding pin bolt, and remove the cylinder body from the torque member. Refer to <u>BR-539</u>, <u>"BRAKE PAD : Removal and Installation"</u>.

CAUTION:

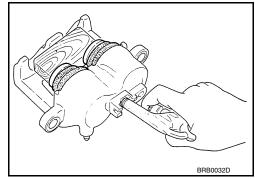
To prevent damage to the parts, fix the brake pad at suitable tape so that the brake pad will not drop.

- 2. Remove sliding pins and sliding pin boots from torque member.
- 3. Remove bushing 1 from sliding pin 2.



4. Place a wooden block as shown in the figure, and blow air from union bolt mounting hole to remove pistons and piston boots. **CAUTION:**

To prevent injury, never get fingers caught in the pistons.

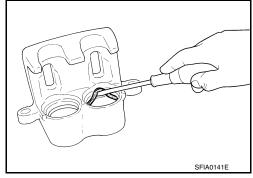


< REMOVAL AND INSTALLATION >

Remove piston seal from cylinder body using seal pick tool. CAUTION:

To prevent damage to the parts, be careful not to damage a cylinder inner wall.

- 6. Remove bleeder valve and cap.
- Perform inspection after disassembly. Refer to <u>BR-546</u>, "<u>BRAKE</u> CALIPER ASSEMBLY: Inspection".

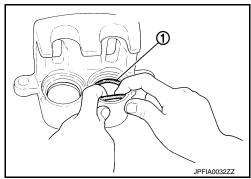


ASSEMBLY

- 1. Install bleeder valve and cap.
- 2. Apply rubber grease to piston seals ①, and install them to cylinder body.

CAUTION:

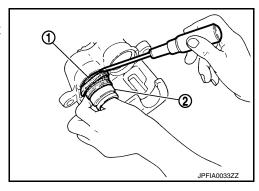
Never reuse piston seals.



3. Apply rubber grease to piston boots ①. Cover the piston ② end with piston boot, and then install cylinder side lip on piston boot securely into a groove on cylinder body.

CAUTION:

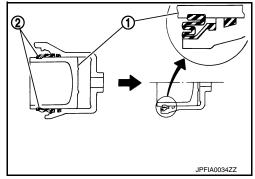
Never reuse piston boots.



4. Apply new brake fluid to pistons ①. Push piston into cylinder body by hand and push piston boot ② piston-side lip into the piston groove.

CAUTION:

To prevent damage to the parts, press the pistons evenly and vary the pressing point to prevent cylinder inner wall from being rubbed.



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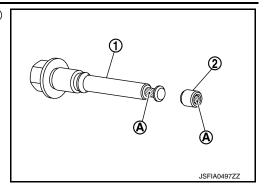
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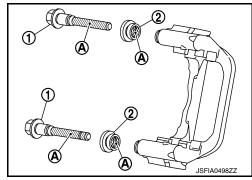
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< REMOVAL AND INSTALLATION >

5. Apply rubber grease to mating faces (A) between sliding pin (1) and bushing (2), and install bushing to sliding pin.



- 6. Apply rubber grease to mating faces (A) between sliding pin (1) and sliding pin boot (2), and install sliding pin and sliding pin boot to sliding torque member.
- 7. Install the cylinder body to tighten cylinder body mounting bolts to the specified torque. Refer to BR-539, "BRAKE PAD : <a href="mailto:Exploded View".



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BRAKE CALIPER ASSEMBLY: Inspection

INSPECTION AFTER DISASSEMBLY

Check the following items and replace if necessary.

Cylinder Body

Check the inner wall of the cylinder for rust, wear, cracks or damage.

CAUTION:

Always clean with new brake fluid. Never clean with mineral oil such as gasoline and light oil.

Torque Member

Check the torque member for rust, wear, cracks or damage.

Pistons

Check the surface of the piston for rust, wear, cracks or damage.

CAUTION:

To prevent damage to the parts, piston sliding surface is plated. Never polish with sandpaper.

Sliding Pin, Sliding Pin Boot and Bushing

Check the sliding pins, sliding boots and bushing for rust, wear, cracks or damage.

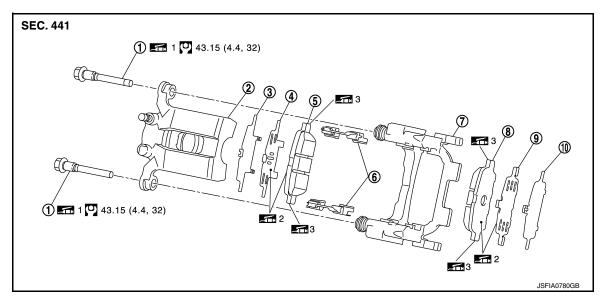
INSPECTION AFTER INSTALLATION

- Check a drag of front disc brake. If any drag is found, follow the procedure described below.
- 1. Remove brake pads. Refer to BR-539, "BRAKE PAD: Removal and Installation".
- 2. Press the pistons. Refer to BR-539, "BRAKE PAD: Removal and Installation".
- 3. Install brake pads. Refer to BR-539, "BRAKE PAD: Removal and Installation".
- 4. Securely depress the brake pedal several times.
- 5. Check a drag of front disc brake again. If any drag is found, disassemble the cylinder body and replace if necessary. Refer to BR-544, "BRAKE CALIPER ASSEMBLY: Disassembly and Assembly".
- Burnish contact surface between disc rotor and brake pads after refinishing or replacing disc rotor, or if a soft pedal occurs at very low mileage. Refer to BR-519, "DISC ROTOR: Inspection and Adjustment".

BRAKE PAD

BRAKE PAD: Exploded View

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Inner pad (with pad wear sensor)

- (1) Sliding pin bolt
- Inner shim
- Torque member
- Outer shim cover
- 1 Apply rubber grease.
- 2: Apply MOLYKOTE® AS880N or silicone-based grease.
- 3: Apply MOLYKOTE® 7439 or equivalent
- : N·m (kg-m, ft-lb)

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(2)

Cylinder body

Outer pad

BRAKE PAD: Removal and Installation

REMOVAL

WARNING:

Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

CAUTION:

- Never depress brake pedal. While removing the brake pads because the piston may pop out.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Remove tires with power tool.

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Pad retainer

Inner shim cover

Outer shim

(3)

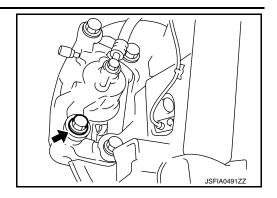
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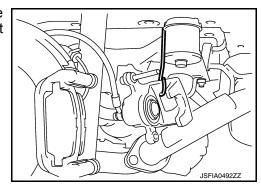
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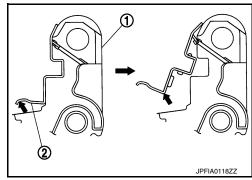
BR-547 Revision: October 2013 2013 LEAF Remove lower sliding pin bolt.



3. Remove cylinder body from torque member, and suspend the cylinder body with suitable wire so that the brake hose will not stretch.



- 4. Remove the brake pads, shims, shim covers and pad retainers from the torque member. **CAUTION:**
 - To prevent damage to the parts, never deform the pad retainer ② when removing the pad retainer from the torque member ①.
 - To prevent damage to the parts, never damage the piston boot.
 - To prevent damage to the parts, never drop the brake pads, shims, and the shim covers.
 - Remember each position of the removed brake pads.
- 5. Perform inspection after removal. Refer to <u>BR-549</u>, "<u>BRAKE PAD</u>: Inspection".



INSTALLATION

WARNING:

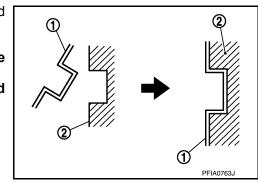
Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

CAUTION:

- Never depress brake pedal. While removing the brake pads or the cylinder body because the piston may pop out.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Install the pad retainers ① to the torque member ② if the pad retainers has been removed.

CAUTION:

- Securely assemble the pad retainers so that it will not be lifted up from the torque member.
- To prevent damage to the parts, never deform the pad retainers.



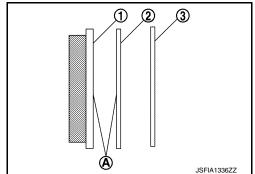
< REMOVAL AND INSTALLATION >

2. Apply MOLYKOTE® AS880N or silicone-based grease to the mating faces (a) between the brake pads (1) and the shims (2), and install the shims and shim covers (3) to the brake pad.

CAUTION:

Always replace the shim together with the shim cover when replacing the brake pad.

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3. Apply MOLYKOTE[®] 7439 or equivalent to the mating faces (A) between the brake pads (1) and the pad retainers.

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Install the brake pads to the torque member.

CAUTION:

To prevent damage to the parts, never deform the pad retainers.

Install cylinder body to torque member.

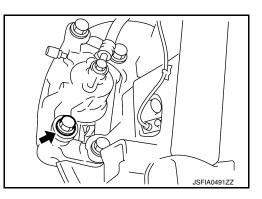
CAUTION:

- To prevent damage to the parts, never damage the piston boot.
- When replacing brake pad with new one, check a brake fluid level in the reservoir tank because brake fluid returns to master cylinder reservoir tank when pressing piston in.

NOTE:

Use a disc brake piston tool to easily press piston.

- 6. Apply rubber grease to the sliding pin bolt, install the lower sliding pin bolt and tighten it to the specified torque.
- Depress the brake pedal several times to check that no drag feel is present for the rear disc brake. Refer to <u>BR-549</u>, "<u>BRAKE PAD</u>: <u>Inspection</u>".
- 8. Install tires with power tool. Refer to <u>WT-49, "Removal and Installation"</u>.



BRAKE PAD: Inspection

INSPECTION AFTER REMOVAL

- Replace the shims and the shim covers if rust is excessively attached.
- Eliminate rust on the pad retainers and the torque member. Replace them if rust is excessively attached.

INSPECTION AFTER INSTALLATION

- Check a drag of rear disc brake. If any drag is found, follow the procedure described below.
- Remove brake pads. Refer to <u>BR-547</u>, "BRAKE PAD: Removal and Installation".
- Press the pistons. Refer to <u>BR-547</u>, "BRAKE PAD: Removal and Installation".
- Install brake pads. Refer to <u>BR-547, "BRAKE PAD: Removal and Installation"</u>.
- Securely depress the brake pedal several times.
- 5. Check a drag of rear disc brake again. If any drag is found, disassemble the cylinder body and replace if necessary. Refer to BRAKE CALIPER ASSEMBLY: Disassembly and Assembly"
- Burnish contact surfaces brake pads and disc rotor after refinishing or replacing brake pads, or if a soft pedal occurs at very low mileage. Refer to <u>BR-521</u>, "<u>BRAKE PAD</u>: <u>Inspection and Adjustment</u>".

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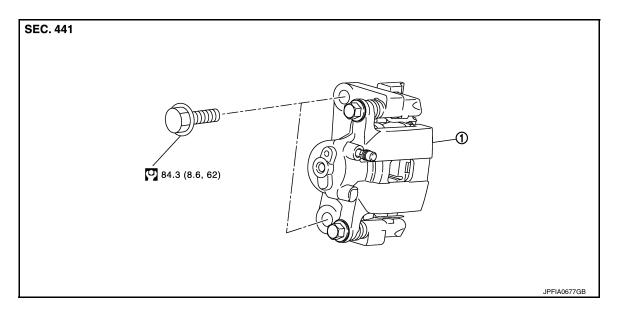
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BRAKE CALIPER ASSEMBLY

BRAKE CALIPER ASSEMBLY: Exploded View

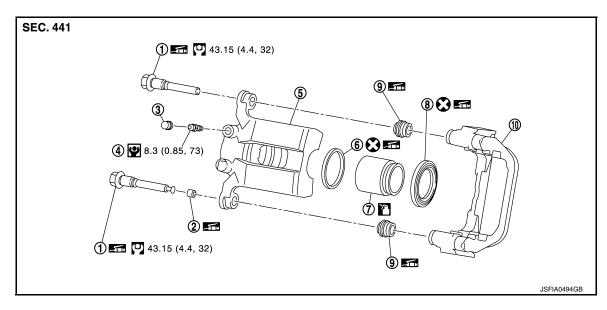
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REMOVAL



- 1 Brake caliper assembly
- : N·m (kg-m, ft-lb)

DISASSEMBLY



(1) Sliding pin bolt

② Bushing

(3) Cap

(4) Bleeder valve

(5) Cylinder body

Piston seal

(7) Piston

(8) Piston boot

Sliding pin boot

- 10 Torque member
- Apply rubber grease.
- Apply brake fluid.
- : N·m (kg-m, ft-lb)

< REMOVAL AND INSTALLATION >

P: N⋅m (kg-m, in-lb)

: Always replace after every disassembly.

BRAKE CALIPER ASSEMBLY: Removal and Installation

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REMOVAL

WARNING:

Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

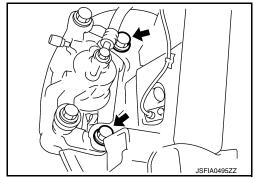
CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
 out immediately and wash with water if it gets on a protect surface. For brake component parts,
 never wash them with water.
- Never depress brake pedal. While removing the brake hose. If this is not complied with, brake fluid may splash.
- To prevent damage to the parts, never drop removed parts.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it off.
- 1. Remove tires with power tool.
- 2. Fix the disc rotor using wheel nuts.
- 3. Drain brake fluid. Refer to BR-516, "Draining".
- Separate brake hose from caliper assembly. Refer to <u>BR-530, "REAR: Removal and Installation"</u>.
- 5. Remove torque member mounting bolts, and remove brake caliper assembly.

CAUTION:

To prevent damage to the parts, never drop brake pad and caliper assembly.

6. When removing disc rotor. Refer to <u>RAX-7</u>, "Removal and Installation".



INSTALLATION

WARNING:

Since dust covering the front and rear brakes has an affect on human body, the dust must be removed with a dust collector. Never splatter the dust with an air blow gun.

CAUTION:

- Never spill or splash brake fluid on painted surfaces. Brake fluid may seriously damage paint. Wipe it
 out immediately and wash with water if it gets on a protect surface. For brake component parts,
 never wash them with water.
- Never depress brake pedal. While removing the brake hose. If this is not complied with, brake fluid may splash.
- To prevent damage to the parts, never spill or splash brake fluid on the disc rotor.
- To prevent damage to the parts, if the brake fluid or grease adheres to the disc rotor, quickly wipe it
 off.
- 1. Install disc rotor. Refer to RAX-7, "Removal and Installation".

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< REMOVAL AND INSTALLATION >

Install the brake caliper assembly to the axle housing and tighten the torque member mounting bolts to the specified torque.

CAUTION:

Never spill or splash any grease and moisture on the brake caliper assembly mounting face, threads, mounting bolts and washers. Wipe out any grease and moisture.

- 3. Install brake hose. Refer to <u>BR-530, "REAR : Removal and</u> Installation".
- 4. Perform the air bleeding. Refer to <u>BR-517</u>, "<u>Bleeding Brake System</u>".
- 5. Check a drag of rear disc brake. If any drag is found, refer to BR-549, "BRAKE PAD: Inspection".
- 6. Install tires with power tool. Refer to WT-49, "Removal and Installation".
- Perform inspection after installation. Refer to <u>BR-554</u>, "BRAKE CALIPER ASSEMBLY: Inspection".

BRAKE CALIPER ASSEMBLY: Disassembly and Assembly

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DISASSEMBLY

NOTE:

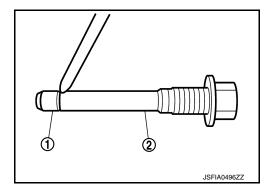
Never remove the torque member, brake pad and pad retainers when disassembling and assembling the cylinder body.

1. Remove the sliding pin bolt, and remove the cylinder body from the torque member. Refer to <u>BR-547</u>. "BRAKE PAD: Removal and Installation".

CAUTION:

To prevent damage to the parts, fix the brake pad at suitable tape so that the brake pad will not drop.

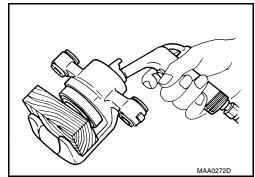
- 2. Remove sliding pin boots from torque member.
- 3. Remove bushing (1) from sliding pin bolt (2).



4. Place a wooden block as shown in the figure, and blow air from union bolt mounting hole to remove pistons and piston boots.

CAUTION:

To prevent injury, never get fingers caught in the pistons.

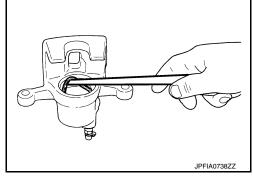


< REMOVAL AND INSTALLATION >

Remove piston seal from cylinder body using seal pick tool. CAUTION:

To prevent damage to the parts, be careful not to damage a cylinder inner wall.

- 6. Remove bleeder valve and cap.
- Perform inspection after disassembly. Refer to <u>BR-554</u>, "<u>BRAKE</u> CALIPER ASSEMBLY: Inspection".

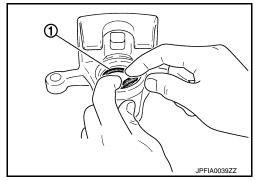


ASSEMBLY

- 1. Install bleeder valve and cap.
- 2. Apply rubber grease to piston seals ①, and install them to cylinder body.

CAUTION:

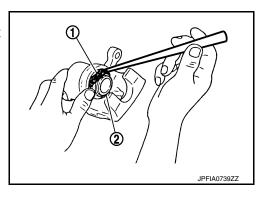
Never reuse piston seals.



3. Apply rubber grease to piston boots ①. Cover the piston ② end with piston boot, and then install cylinder side lip on piston boot securely into a groove on cylinder body.

CAUTION:

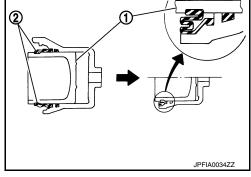
Never reuse piston boots.



4. Apply new brake fluid to pistons ①. Push piston into cylinder body by hand and push piston boot ② piston-side lip into the piston groove.

CAUTION:

To prevent damage to the parts, press the pistons evenly and vary the pressing point to prevent cylinder inner wall from being rubbed.



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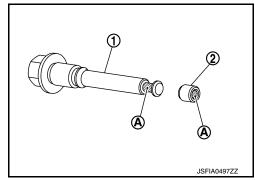
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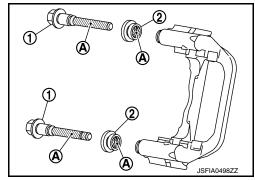
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< REMOVAL AND INSTALLATION >

5. Apply rubber grease to mating faces (A) between sliding pin bolt (1) and bushing (2), and install bushing to sliding pin.



- Apply rubber grease to mating faces (A) between sliding pin bolt
 and sliding pin boot (2), and install sliding pin boot to torque member.
- 7. Install the cylinder body to tighten sliding pin bolts to the specified torque. Refer to BRAKE_PAD : Exploded View".



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BRAKE CALIPER ASSEMBLY: Inspection

INSPECTION AFTER DISASSEMBLY

Check the following items and replace if necessary.

Cylinder Body

Check the inner wall of the cylinder for rust, wear, cracks or damage.

CAUTION:

Always clean with new brake fluid. Never clean with mineral oil such as gasoline and light oil.

Torque Member

Check the torque member for rust, wear, cracks or damage.

Pistons

Check the surface of the piston for rust, wear, cracks or damage.

CAUTION:

A piston sliding surface is plated. Never polish with sandpaper.

Sliding Pin, Sliding Pin Boot and Bushing

Check the sliding pins, sliding boots and bushing for rust, wear, cracks or damage.

INSPECTION AFTER INSTALLATION

- Check a drag of rear disc brake. If any drag is found, follow the procedure described below.
- 1. Remove brake pads. Refer to BR-547, "BRAKE PAD: Removal and Installation".
- 2. Press the pistons. Refer to BR-547, "BRAKE PAD: Removal and Installation".
- Install brake pads. Refer to <u>BR-547, "BRAKE PAD: Removal and Installation"</u>.
- 4. Securely depress the brake pedal several times.
- 5. Check a drag of rear disc brake again. If any drag is found, disassemble the cylinder body and replace if necessary. Refer to BRAKE CALIPER ASSEMBLY: Disassembly and Assembly".
- Burnish contact surface between disc rotor and brake pads after refinishing or replacing disc rotor, or if a soft pedal occurs at very low mileage. Refer to BR-521, "DISC ROTOR: Inspection and Adjustment".

SERVICE DATA AND SPECIFICATIONS (SDS)

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

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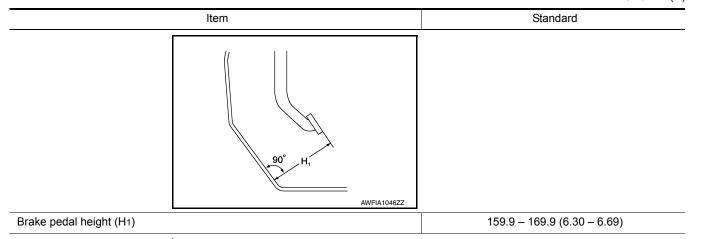
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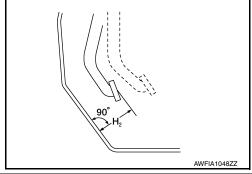
Unit: mm (in)

	Cylinder bore diameter	45.0 (1.772) × 2
Front brake	Pad length × width × thickness	140.0 × 48.0 × 9.5 (5.51 × 1.890 × 0.374)
	Rotor outer diameter × thickness	283 × 28.0 (11.14 × 1.102)
	Cylinder bore diameter	38.1 (1.500)
Rear brake	Pad length × width × thickness	83.0 × 31.9 × 8.5 (3.268 × 1.265 × 0.355)
	Rotor outer diameter × thickness	292 × 16.0 (11.50 × 0.630)
Master cylinder	Cylinder bore diameter	25.4 (1)
Control valve	Valve type	Electric brake force distribution
Recommended brake fluid		Refer to MA-12, "Fluids and Lubricants".

Brake Pedal

Unit: mm (in)





Depressed brake pedal height (H2)
Depressing [196 N (20 kg, 44 lb) while set the vehicle to READY]

93.0 (3.661) or more

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SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

Item		Standard
	een stop lamp switch and brake pedal position switch thread-	0.74 – 1.96 (0.0291 – 0.0772)
ed end and the brake pedal lever		
Brake pedal play		3 – 11 (0.12 – 0.43)
Electrically-dr	riven Intelligent Brake	INFOID:0000000008746838
		Unit: mm (in)
Item		Standard
Input rod length		164.4 – 166.0 (6.47 – 6.54)
Front Disc Br	ake	INFOID:0000000008746839
		Unit: mm (in)
	Item	Limit
Brake pad	Wear thickness	2.0 (0.079)
	Wear thickness	26.0 (1.024)

Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.035 (0.0014)
Rear Disc Brake		INFOID:000000008746840

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
Disc rotor	Wear thickness	14.0 (0.051)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.1 (0.04)