SECTION ACS
AUTO CRUISE CONTROL SYSTEM

CONTENTS

SERVICE INFORMATION

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Description

INFOID:0000000001328801

Regarding the information for ASCD system, refer to EC-37 (VQ35DE), EC-615 (VK45DE).

SERVICE INFORMATION

DTC INDEX

DTC 11 - 65

INFOID:0000000001544468

DTC	Items (CONSULT screen terms)	Reference
11	CONTROL UNIT	ACS-36, "DTC 11 CONTROL UNIT"
20	CAN COMM CIRCUIT	ACS-36, "DTC 20 CAN COMM CIRCUIT"
31	POWER SUPPLY CIR	ACS-37, "DTC 31 POWER SUPPLY CIR, DTC 34 POWER SUPPLY CIR 2"
34	POWER SUPPLY CIR 2	
41	VHCL SPEED SE CIRC	ACS-37, "DTC 41 VHCL SPEED SE CIRC"
43	ABS/TCS/VDC CIRC	ACS-38, "DTC 43 ABS/TCS/VDC CIRC"
45	BRAKE SW/STOP L SW	ACS-38, "DTC 45 BRAKE SW/STOP L SW"
46	OPERATION SW CIRC	ACS-40, "DTC 46 OPERATION SW CIRC"
61	PRESS SEN SIRCUIT	ACS-41, "DTC 61 PRESS SEN CIRCUIT"
62	BOOSTER SOL/V CIRCUIT	ACS-42, "DTC 62 BOOSTER SOL/V CIRCUIT"
63	RELEASE SW CIRCUIT	ACS-43, "DTC 63 RELEASE SW CIRCUIT"
65	PRESSURE CONTROL	ACS-45, "DTC 65 PRESSURE CONTROL"

DTC 74 - 109

INFOID:0000000001544469

DTC	Items (CONSULT screen terms)	Reference
74	LASER BEAM OFF CNTR	ACS-45, "DTC 74 LASER BEAM OFF CNTR"
90	STOP LAMP RLY FIX	ACS-46, "DTC 90 STOP LAMP RLY FIX"
92	ECM CIRCUIT	ACS-50, "DTC 92 ECM CIRCUIT"
96	NP RANGE	ACS-51, "DTC 96 NP RANGE"
97	AT CIRCUIT	ACS-52, "DTC 97 AT CIRCUIT"
98	GEAR POSITION	ACS-52, "DTC 98 GEAR POSITION"
102	RADAR STAIN	ACS-53, "DTC 102 RADAR STAIN"
103	LASER SENSOR FAIL	ACS-53, "DTC 103 LASER SENSOR FAIL"
104	LASER AIMING INCMP	ACS-54, "DTC 104 LASER AIMING INCMP"
107	LASER COMM FAIL	ACS-54, "DTC 107 LASER COMM FAIL"
109	LASER HIGH TEMP	ACS-54, "DTC 109 LASER HIGH TEMP"

PRECAUTIONS

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

INFOID:0000000001612901

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 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 “SUPPLEMENTAL RESTRAINT SYSTEM” and “SEAT BELTS” 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 “SUPPLEMENTAL RESTRAINT SYSTEM”.**
- **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.**

Precaution for ICC System Service

INFOID:0000000001328803

- Never look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the MAIN switch OFF in conditions similar to driving, such as free rollers or a chassis dynamometer.
- Do not use the ICC sensor removing from vehicle, disassemble, or remodel the sensor.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after adjusting laser beam aiming if necessary.

PREPARATION

Special Service Tool

INFOID:0000000001328804

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV99110100 (J-45718) ICC target board  PKIA0358J	Uses for laser beam aiming adjustment

DESCRIPTION

Outline

INFOID:0000000001328805

The Intelligent Cruise Control (ICC) system automatically maintains a selected distance from the vehicle ahead according to that vehicle's speed, or at the set speed, if the road ahead is clear.
The ICC function has two cruise control modes and brake assist (with preview function).

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

With vehicle-to-vehicle distance control mode, the driver can maintain the same speed as other vehicles without the constant need to adjust the set speed as the driver would with a normal cruise control system.
The system is intended to enhance the operation of the vehicle when following the vehicle traveling in the same lane and direction.
If the distance sensor detects a slower moving vehicle ahead, the system will reduce speed so that the vehicle ahead can be followed at the selected distance.
The system automatically controls the throttle and applies the brakes (up to 25% of vehicle braking power) if necessary.
The detection range of the sensor is approximately 120 m (390 ft) ahead.
Refer to Owner's Manual for Intelligent Cruise Control System operating instructions.

CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

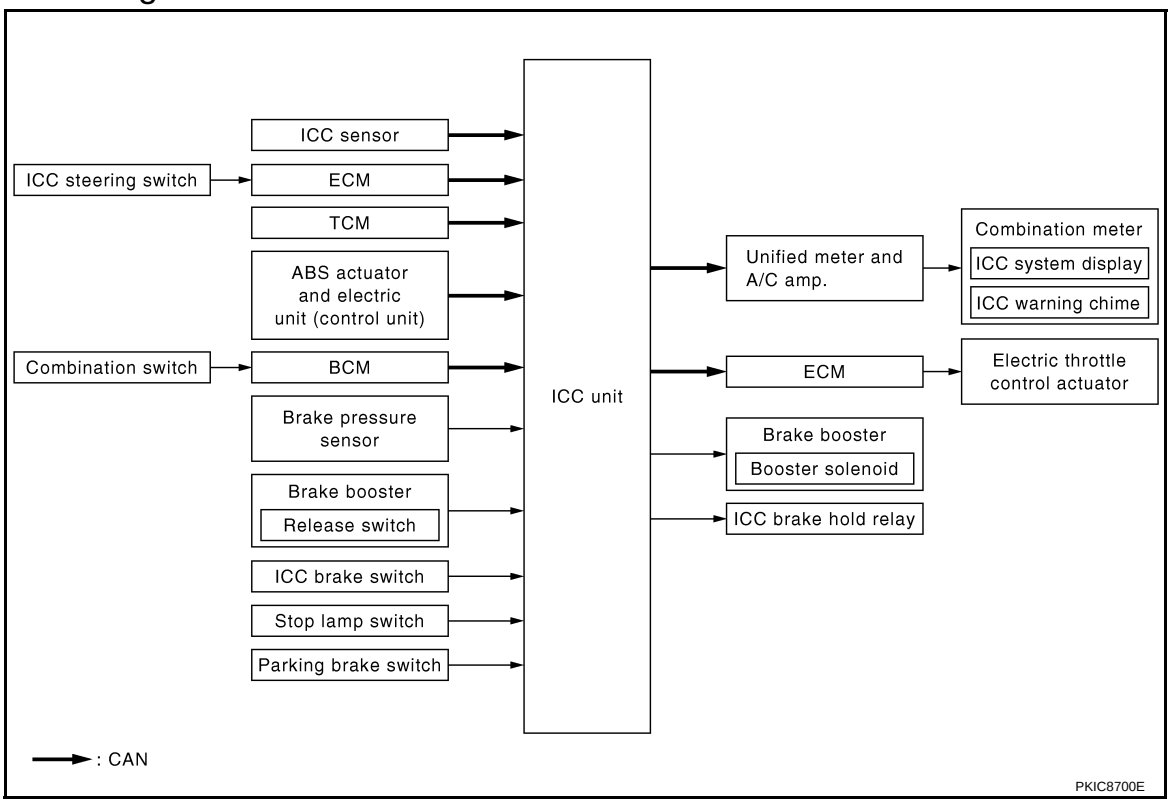
Conventional (fixed speed) cruise control mode is cruising at preset speeds.
Refer to Owner's Manual for Intelligent Cruise Control System operating instructions.

BRAKE ASSIST (WITH PREVIEW FUNCTION)

When the force applied to brake pedal exceeds a certain level, the Brake Assist is activated and generates a greater braking force than that of a conventional brake booster even with light pedal force.
When the Preview Function identifies the need to apply the sudden brake by sensing the vehicle ahead in the same lane and the distance and relative speed from it, it applies the brake pre-pressure before driver depress the brake pedal and improves brake response by reducing its free play.
Refer to Owner's Manual for BRAKE ASSIST (WITH PREVIEW FUNCTION) operating instructions.

Functional Diagram

INFOID:0000000001328806



Items of input/output signal to be checked with CONSULT-III

DATA MONITOR INPUT ITEM LIST

Input	Data monitored Item [unit]	CAN	Description
ECM	THRTL OPENING [%]	×	Indicates throttle angle read by ICC unit through CAN communication (ECM transmits throttle angle through CAN communication).
	ENGINE RPM [rpm]	×	Indicates engine speed read by ICC unit through CAN communication (ECM transmits engine speed through CAN communication).
	MAIN SW [On/Off]	×	Indicates [On/Off] status as judged from steering switch signal (ECM transmits steering switch signal through CAN communication).
	SET/COAST SW [On/Off]	×	Indicates [On/Off] status as judged from steering switch signal (ECM transmits steering switch signal through CAN communication).
	CANCEL SW [On/Off]	×	Indicates [On/Off] status as judged from steering switch signal (ECM transmits steering switch signal through CAN communication).
	RESUME/ACC SW [On/Off]	×	Indicates [On/Off] status as judged from steering switch signal (ECM transmits steering switch signal through CAN communication).
	IDLE SW [On/Off]	×	Indicates [On/Off] status of idle switch read by ICC unit through CAN communication (ECM transmits ON/OFF status through CAN communication).
TCM	VHCL SPD AT [km/h] or [mph]	×	Indicates vehicle speed calculated from AT vehicle speed sensor by ICC unit through CAN communication (TCM transmits AT vehicle speed sensor signal through CAN communication).
	GEAR [1, 2, 3, 4, 5]	×	Indicates AT gear position read by ICC unit through CAN communication (TCM transmits gear position through CAN communication).
	D RANGE SW [On/Off]	×	Indicates [On/Off] status of “D” position read by ICC unit through CAN communication (TCM transmits ON/OFF condition of “D” position through CAN communication).
	NP RANGE SW [On/Off]	×	Indicates PNP switch signal read by ICC unit through CAN communication (TCM transmits PNP switch signal through CAN communication).
ABS actuator and electric unit (control unit)	VHCL SPEED SE [km/h] or [mph]	×	Indicates vehicle speed calculated from wheel sensor by ICC unit through CAN communication (ABS actuator and electric unit (control unit) transmits wheel speed sensor signal through CAN communication).
BCM	WIPER SW [Off/Low/High]	×	Indicates wiper [Off/Low/High] status (BCM transmits front wiper request signal through CAN communication).
Brake pressure sensor	PRESS SENS [bar]		Indicates brake fluid pressure value calculated from signal voltage of pressure sensor.
Release switch	RELEASE SW NO [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON when brake is depressed. OFF when brake is not depressed.
	RELEASE SW NC [On/Off]		Indicates [On/Off] status as judged from release switch signal. ON when brake is not depressed. OFF when brake is depressed.
ICC brake switch	BRAKE SW [On/Off]		Indicates [On/Off] status as judged from ICC brake switch signal.
Stop lamp switch	STOP LAMP SW [On/Off]		Indicates [On/Off] status as judged from stop lamp switch signal.

DATA MONITOR OUTPUT ITEM LIST

Output	Data monitored Item [unit]	CAN	Description
ICC warning chime	BUZZER O/P [On/Off]	×	Indicates [On/Off] status of ICC warning chime output.
ICC brake hold relay	STP LMP DRIVE [On/Off]		Indicates [On/Off] status of brake hold relay drive output.

ACTIVE TEST ITEM LIST

Output	CONSULT-III ICC [ACTIVE TEST] Item	CAN	Description
Combination meter	ICC BUZZER 1	×	Able to start ICC warning chime with a driving signal from ICC unit.
	METER LAMP	×	Able to turn ICC system display ON with a driving signal from ICC unit.
ICC brake hold relay	STOP LAMP		Able to start ICC brake hold relay with a driving signal from ICC unit.
Booster solenoid	BOOSTER SOL/V 3		Able to start booster solenoid with a driving signal from ICC unit.

Component Description

INFOID:0000000001328807

Component	Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Brake assis (with preview function)	Description
ICC unit	×	×	×	Operates electric throttle control actuator and brake booster based on that sensor signals and CAN communication data, then controls vehicle distance.
ICC sensor	×		×	Irradiates laser beam, and receives reflected laser beam to measure distance from preceding vehicle.
ECM	×	×	×	Transmits throttle position signal and ICC steering switch signal to ICC unit through CAN communication.
ABS actuator and electric unit (control unit)	×	×	×	Transmits wheel speed sensor signal to ICC unit through CAN communication.
Brake pressure sensor	×		×	Detects fluid pressure in master cylinder.
Brake booster	×		×	Adjusts brake fluid pressure, based on command from ICC unit.
BCM	×			Transmit front wiper request signal to ICC unit through CAN communication.
TCM	×	×		Transmits gear position signal and output shaft revolution signal to ICC unit through CAN communication.
Unified meter and A/C amp.	×	×	×	Receives ICC system display signal, ICC warning lamp signal and buzzer output signal from ICC unit through CAN communication.
ICC brake switch, stop lamp switch	×	×	×	Transmit operating signal to ICC unit when touching brake pedal. ICC unit cancels cruise system at driver's brake operation.
ICC brake hold relay	×			Receives stop lamp driving signal from ICC unit, and turns stop lamp ON.
Parking brake switch	×	×		The cruise system is cancelled when applied.

CAN Communication

INFOID:0000000001328808

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 electric 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.

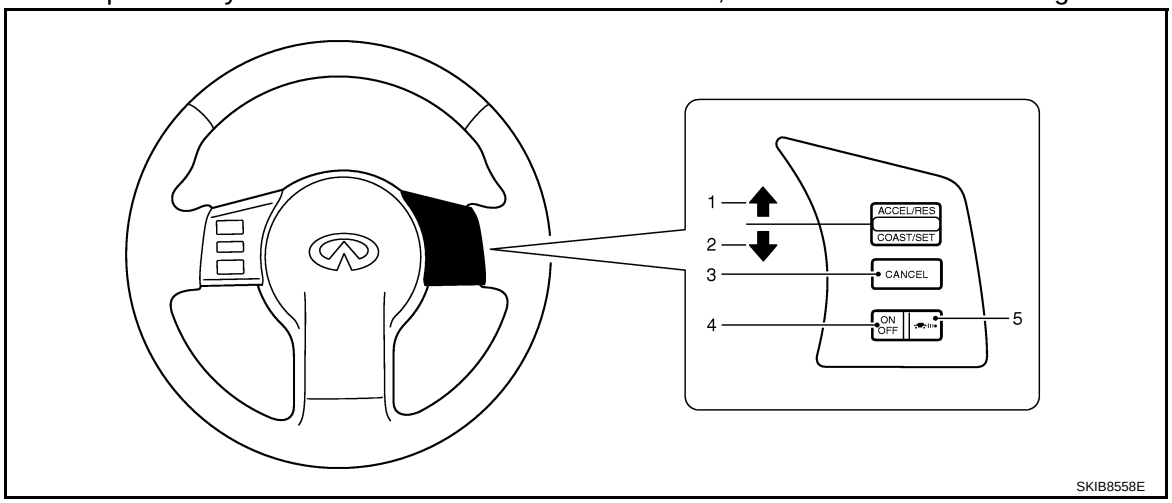
CAN COMMUNICATION UNIT

Refer to LAN-43, "CAN System Specification Chart".

Switch Operation

INFOID:0000000001328809

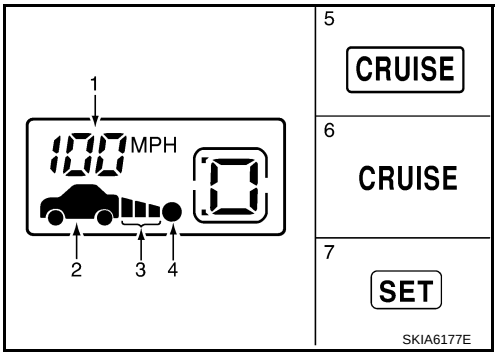
The system is operated by MAIN switch and four control switches, all mounted on the steering wheel.



No.	Switch name	Description
1	RESUME/ACCELERATE switch	Resumes set speed or increases speed incrementally.
2	SET/COAST switch	Sets desired cruise speed, reduces speed incrementally.
3	CANCEL switch	Deactivates system without erasing set speed.
4	MAIN switch	Master switch to activate the system
5	DISTANCE switch	Changes the following distance from: Long, Middle, Short.

ICC System Display

INFOID:0000000001328810



No.	Display items	Description
1	Set vehicle speed indicator	Indicates the set vehicle speed. • For CANADA models: km/h • For US models: MPH
2	Vehicle ahead detection indicator	Indicates whether it detects a vehicle ahead.
3	Set distance indicator	Display the selected distance between vehicles set with the DISTANCE switch.
4	Own vehicle indicator	Indicates the base vehicle.
5	MAIN switch indicator lamp (Green)	Indicates that the MAIN switch is ON.
6	Intelligent cruise control system warning lamp (Orange)	The light comes on if there is a malfunction in the ICC system.
7	SET switch indicator lamp	Indicates that the conventional cruise control mode is controlled.

ACTION TEST

ICC System Running Test

INFOID:0000000001328811

VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE

Set Checking

1. Press the MAIN switch for less than 1.5 seconds.
2. Drive the vehicle between 40 km/h (25 MPH) and 144 km/h (90 MPH).
3. Push the SET/COAST switch.
4. Confirm that the desired speed is set as hand is released from the SET/COAST switch.

NOTE:
- When there is no vehicle ahead, drive at the set speed steadily.
- When there is a vehicle ahead, control to maintain distance from the vehicle ahead, watching its speed.
- The set vehicle speed is displayed on the ICC system indicator in the combination meter.

Check For Increase Of Cruising Speed

1. Set vehicle-to-vehicle distance control mode at desired speed.
2. Check if the set speed increases by 1 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed.

NOTE:
The maximum set speed of the vehicle-to-vehicle distance control mode is 144 km/h (90 MPH).

Check For Decrease Of Cruising Speed

1. Set vehicle-to-vehicle distance control mode at desired speed.
2. Check if the set speed decreases by 1 km/h (1 MPH) as SET/COAST switch is pushed.

NOTE:
- Vehicle-to-vehicle distance control mode is automatically turned off when the driving speed lowers to 32 km/h (20 MPH) due to the deceleration of the vehicle ahead.
- The minimum set speed of the vehicle-to-vehicle distance control mode is 40 km/h (25 MPH).

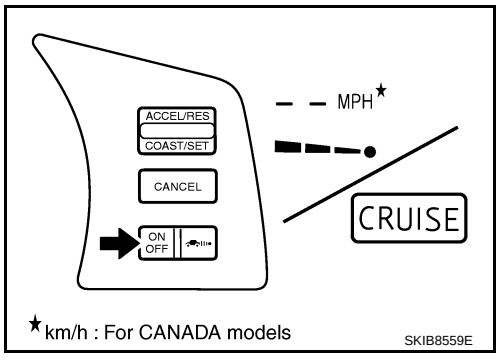
Check For Cancellation Of Vehicle-To-Vehicle Distance Control Mode (Normal Driving Condition) In The Following Cases:
- When the brake pedal is depressed after the system is turned ON.
- When the selector lever is shifted to the “N” (Neutral) position.
- When the MAIN switch is turned OFF.
- When CANCEL switch is operated.

Check For Restoring Speed That Is Set By Vehicle-To-Vehicle Distance Control Mode Before Cancellation

1. Cancel the system by depressing the foot brake. Then, check that the speed before cancellation is restored when pressing RESUME/ACCELERATE switch with 40 km/h (25 MPH) or above.
2. Cancel the system by shifting the selector lever to “N” position. Then, check if the speed set before the cancellation is restored when RESUME/ACCELERATE switch is pushed up.
3. Check if the speed previously set is restored when RESUME/ACCELERATE switch is operated with driving 40 km/h (25 MPH), after canceling vehicle-to-vehicle distance control mode by operating the CANCEL switch.

Check For MAIN Switch

1. Start engine. Then, check if the following operations are performed correctly.
2. Vehicle-to-vehicle distance control mode is displayed in combination meter illuminates when MAIN switch is pressed “ON” for less than 1.5 seconds and ready for operation. The illumination goes off when MAIN switch is turned to OFF.
3. “CRUISE” illumination and ICC system display go off when the ignition switch is turned to OFF while MAIN switch is ON (“CRUISE” illumination is ON and vehicle-to-vehicle distance control mode is ready for operation).



Check For RESUME/ACCELERATE, SET/COAST, CANCEL Switches

1. Check if RESUME/ACCELERATE, SET/COAST, CANCEL switches are operated smoothly.
2. Check if buttons come up as hand is released from the buttons.

Check For Distance Switch

1. Start engine.
2. Press the MAIN switch for less than 1.5 seconds.
3. Press the DISTANCE switch.
4. Check if the set distance indicator changes display in order of: (Long)→(Middle)→(Short).
   NOTE:
   The set distance indicator shows (Long) immediately after the engine starts.

Distance	Display	Approximate distance at 100 km/h (60 MPH) [m (ft)]
Long	96 km/h	60 (195)
Middle	96 km/h	40 (130)
Short	96 km/h	30 (90)

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CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

Set Checking

1. Press the MAIN switch for more than 1.5 seconds.
2. Drive the vehicle between 40 km/h (25 MPH) and 144 km/h (90 MPH).
3. Push down the SET/COAST switch.
4. Confirm that the desired speed is set as hand is released from the SET/COAST switch.

NOTE:
ICC system display in the combination meter shows nothing.

Check For Increase Of Cruising Speed

1. Set the conventional (fixed speed) cruise control mode at desired speed.
2. Check if the set speed increases by 1.6 km/h (1 MPH) as RESUME/ACCELERATE switch is pushed up.

NOTE:
- If the RESUME/ACCELERATE switch is kept pushing up during cruise control driving, the vehicle speed increases until the switch is released.
- The maximum set speed is 144 km/h (90 MPH).

Check For Decrease Of Cruising Speed

1. Set the conventional (fixed speed) cruise control mode at desired speed.
2. Check if the set speed decreases by 1.6 km/h (1 MPH) as SET/COAST switch is pushed down.

NOTE:
- Conventional (fixed speed) cruise control mode is automatically turned off when the driving speed lowers to 32 km/h (20 MPH).
- The minimum set speed is 40 km/h (25 MPH).

Check For Cancellation Of Conventional (Fixed Speed) Cruise Control Mode (Normal Driving Condition) In The Following Cases:

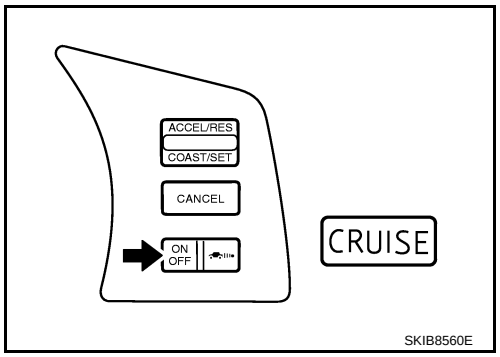
Refer to "Check For Cancellation Of Vehicle-To-Vehicle Distance Control Mode (Normal Driving Condition) In The Following Cases:".

Check For Restoring Speed That Is Set By Conventional (Fixed Speed) Cruise Control Mode Before ICC Cancellation

Refer to "Check For Restoring Speed That Is Set By Vehicle-To-Vehicle Distance Control Mode Before Cancellation".

Check For MAIN Switch

1. Start engine. Then, check if the following operations are performed correctly.
2. “CRUISE” lamp illuminates and ICC system indicator goes off when MAIN switch is pressed “ON” for more than 1.5 seconds, and then ready for operation. The illumination goes off when MAIN switch is turned to OFF.
3. “CRUISE” illumination go off when the ignition switch is turned to OFF while MAIN switch is ON.



Check For RESUME/ACCELERATE, SET/COAST, CANCEL Switches

1. Check if RESUME/ACCELERATE, SET/COAST, CANCEL switches are operated smoothly.
2. Check if buttons come up as hand is released from the buttons.

LASER BEAM AIMING ADJUSTMENT

Outline

INFOID:0000000001328812

Adjust the laser beam aiming every time the ICC sensor is removed or installed.

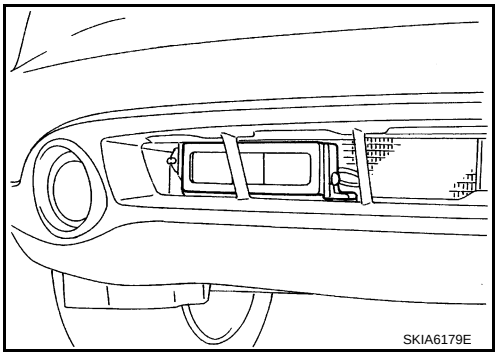
CAUTION:

- **Adjust laser beam aiming at a horizontal place as far as 12 m (39 ft) forward the vehicle can be seen.**
- **Adjust laser beam aiming 5 seconds after starting engine.**
- **Never view ICC sensor integrated unit body window directly during laser beam aiming adjustment.**
- **Follow the CONSULT-III when adjusting the laser beam aiming (laser beam aiming adjustment cannot be operated without CONSULT-III).**
- **Never ride on vehicle during laser beam aiming adjustment.**
- **Idle and turn headlamps OFF during laser beam aiming adjustment.**

Preparation

INFOID:0000000001328813

- Adjust the tire pressure to the specified value.
- See that there is no load in the vehicle.
- Coolant, engine oil filled up to correct level and full fuel tank.
- Shift the gear into “P” position and release the parking brake.
- Clean the ICC sensor with a soft cloth.



Outline of Adjustment Procedure

INFOID:0000000001328814

1. Set up the ICC target board [KV99110100 (J-45718)].
2. Adjust the sensor following the procedure on CONSULT-III. (Turn manually the screw for up-down position adjustment. ICC sensor automatically adjust the right-left position.)

Setting the ICC Target Board

INFOID:0000000001328815

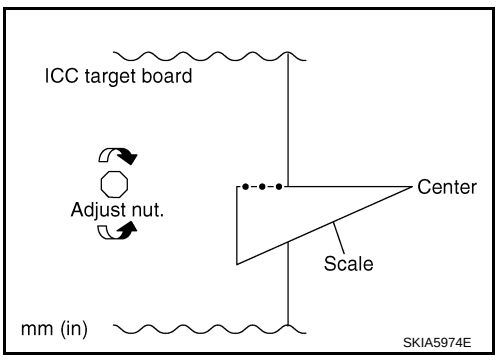
Accurate ICC target board setting is required for the laser beam aiming adjustment.

CAUTION:

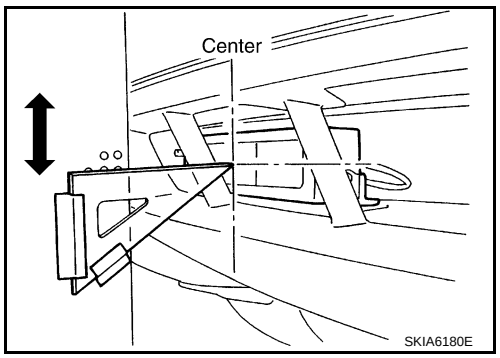
ICC system does not function normally if laser beam aiming is not accurate.

ADJUSTING HEIGHT OF THE TARGET

1. Attach a triangle scale at the center.

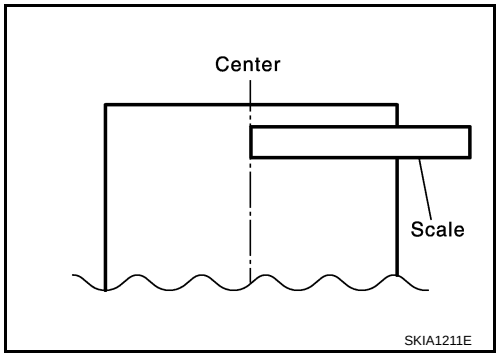


2. Adjust the height of the target board stand so that the point of the triangle aims the center of the ICC sensor.

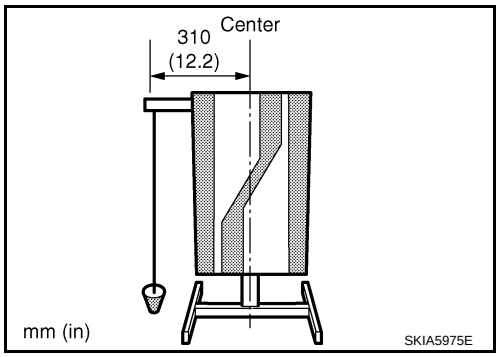


ADJUSTING THE RIGHT-LEFT POSITION OF THE TARGET

1. Attach a scale [at least 350 mm (14 in) or longer] or stick as shown in the figure.

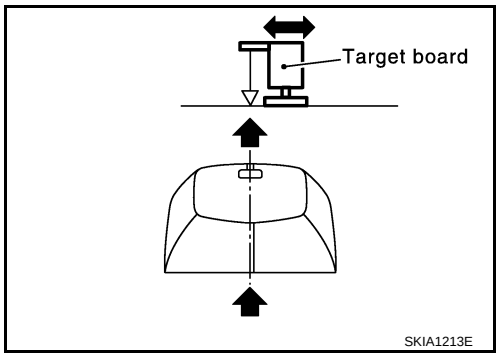


2. Suspend a thread with weight on the tip of the thread to 310 mm (12.2 in) left side of the target board from the center of the target board on top.

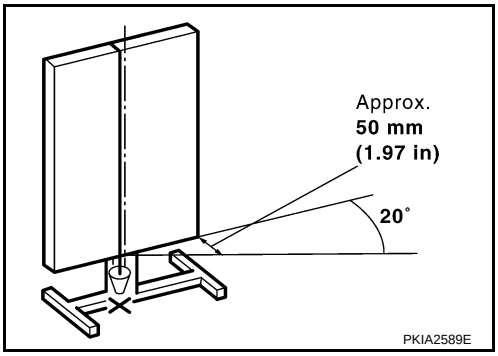


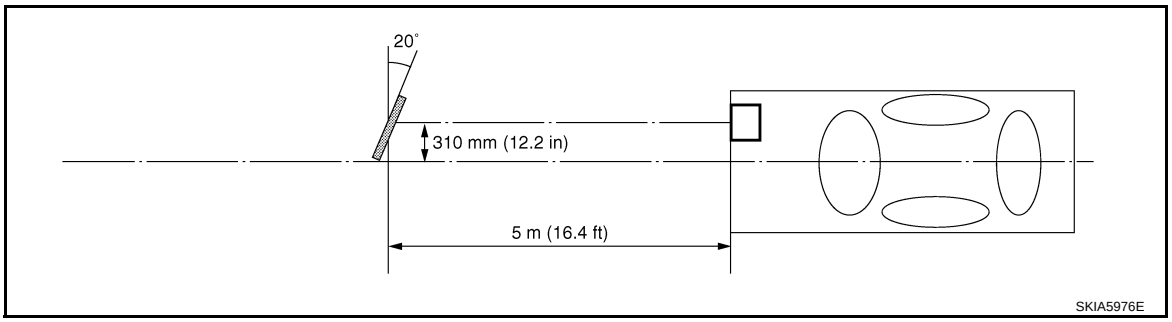
SETTING THE TARGET

1. Suspend a thread with weight on tip to splice the center of the front and rear bumpers. Then, mark the center point on the ground as each weight points.
2. Link the front and rear bumpers center points marked on the ground, and mark a point 5 m (16.4 ft) ahead of the sensor, on the extended line of the previous link line of the bumper center points. Then, adjust the position of the target board so that the weight come on the top of the marked point [5 m (16.4 ft) ahead of the sensor] and face to the vehicle.
3. Adjust the position of the target board so that the extended line that links the center of the rear window glass (the center of the rear window defogger pattern) and the center of the windshield (the setting part of the room mirror) align with the weight suspended from the board.
4. Remove the thread suspended to the left side of board and suspend a thread with weight on tip on the center of the target board. Then mark the point of weight on the ground.

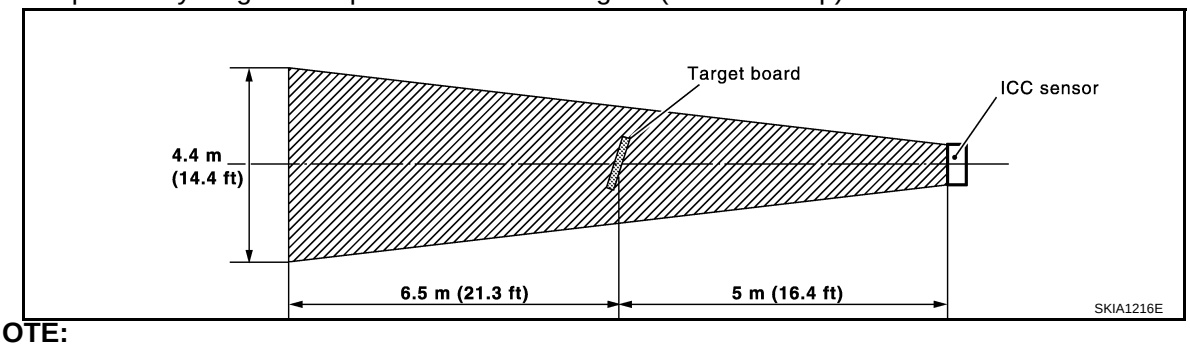


5. Pivot the edge of the target board 20° to either side.
NOTE:
Approx. 50 mm (1.97 in) shift rates the 20° movement.





6. Do not place anything in the space shown in the figure (view from top).



NOTE:
In case the space shown in the figure is not available, make space by covering the side of the target board with a 400 mm (15.75 in)-size frosted black board or black cloth.

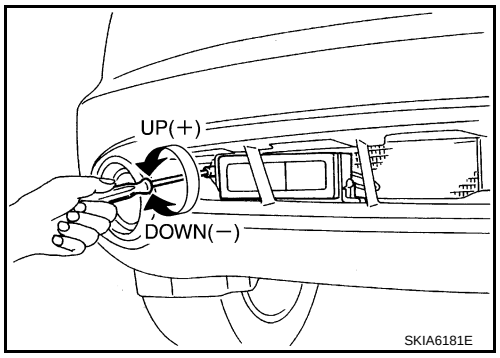
Aiming Adjustment

INFOID:0000000001328816

CAUTION:
Never view ICC sensor integrated unit body window directly during laser beam aiming adjustment.
NOTE:
Complete all necessary work for laser beam adjustment until the adjustment completes as shown in the procedure. If the procedure does not complete, the ICC system is inoperable.

1. Connect CONSULT-III and select “Work Support” of “ICC”.
2. Select “LASER BEAM ADJUST”.
3. Touch “START”.
NOTE:
If the adjustment screen does not appear on the CONSULT-III screen in 10 seconds. After touching “LASER BEAM ADJUST” screen, the following causes may be considered:
- Target is not set accurately.
- There is not enough space beside the target.
- Deformation of vehicle or the surrounding equipment unit, bracket, or the surrounding equipment is causing inappropriate installation of sensor and aiming may be set out of the adjustable range.
- The area is not suitable for the adjustment work.
- ICC sensor is not clean.
- The ICC system warning lamp illuminates.
4. After the CONSULT-III displays “ADJUST THE VERTICAL OF LASER BEAM AIMING” turn the up-down direction adjusting screw until “U/D CORRECT” value is set in the range of ±4.

NOTE:
- Turn the screw slowly. The value change on display is slower than actual movement of the ICC sensor. Wait for 2 seconds every time the screw is turned half a rotation.
- Turning the screw to the right lowers the aiming and to the left lifts the aiming.



5. When “U/D CORRECT” value indicates ±4, confirm that the margin of value remains within ±4 at least for 2 seconds with no equipment or hand touching the ICC sensor.
   When “COMPLETED THE VERTICAL AIMING OF LASER BEAM” appears on screen, touch “END”.
   NOTE:
   Be sure that the margin of “U/D CORRECT” is within ±4 with ICC sensor unit is untouched.
6. Confirm that “ADJUSTING AUTOMATIC HORIZONTAL LASER BEAM AIMING” is on screen and wait for a while (maximum: 10 seconds).
7. Confirm that “NORMALLY COMPLETED” is displayed on CONSULT-III and close the aiming adjustment procedure by touching “END”.
   NOTE:
   Complete all the procedures once “LASER BEAM ADJUST” mode is entered in CONSULT-III. When the procedure is discontinued, the ICC system is inoperable.

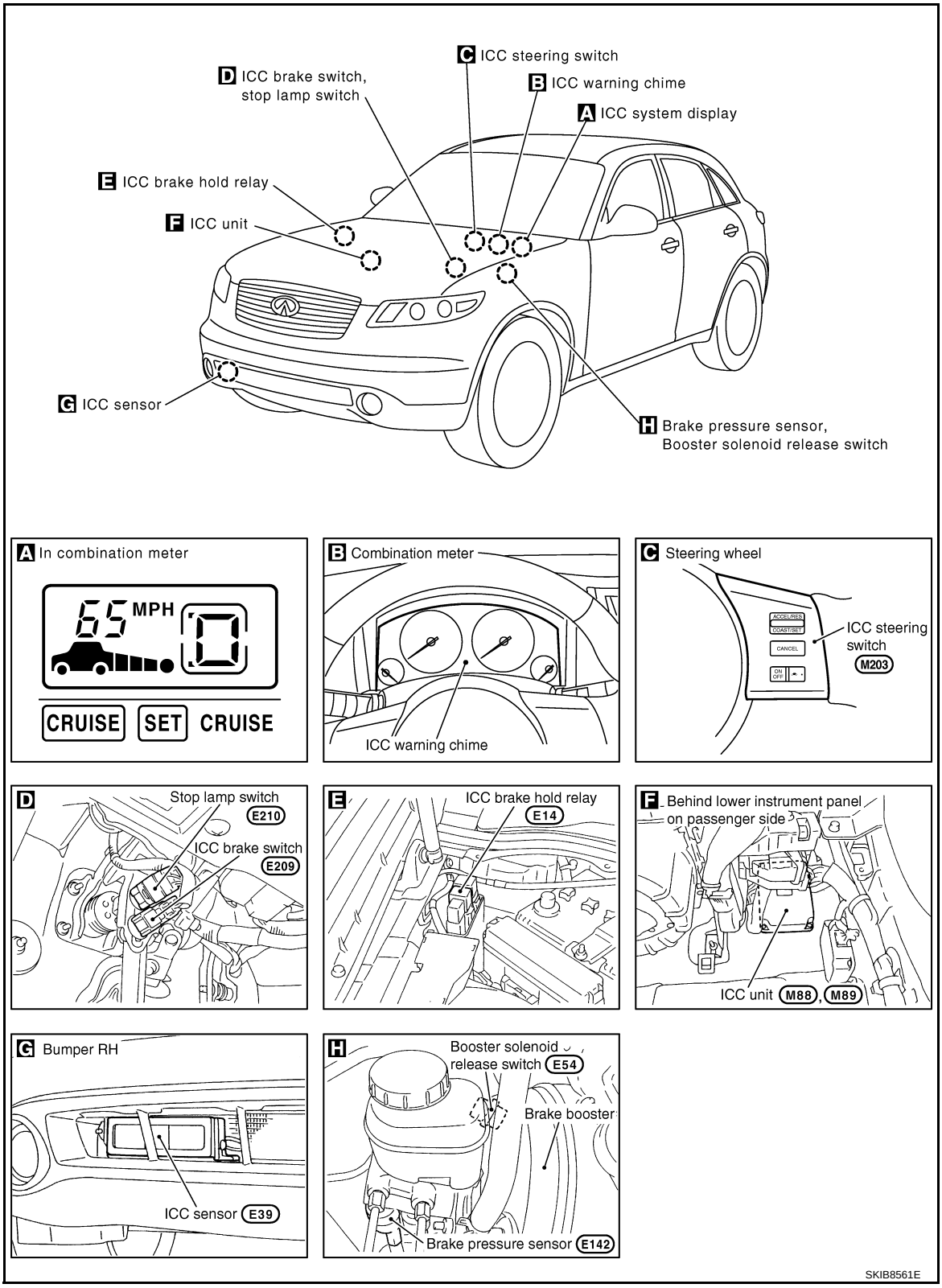
CHECK AFTER THE ADJUSTMENT

Test the ICC system operation by running test. Refer to ACS-11, "ICC System Running Test".

ELECTRICAL UNITS LOCATION

Component Parts and Harness Connector Location

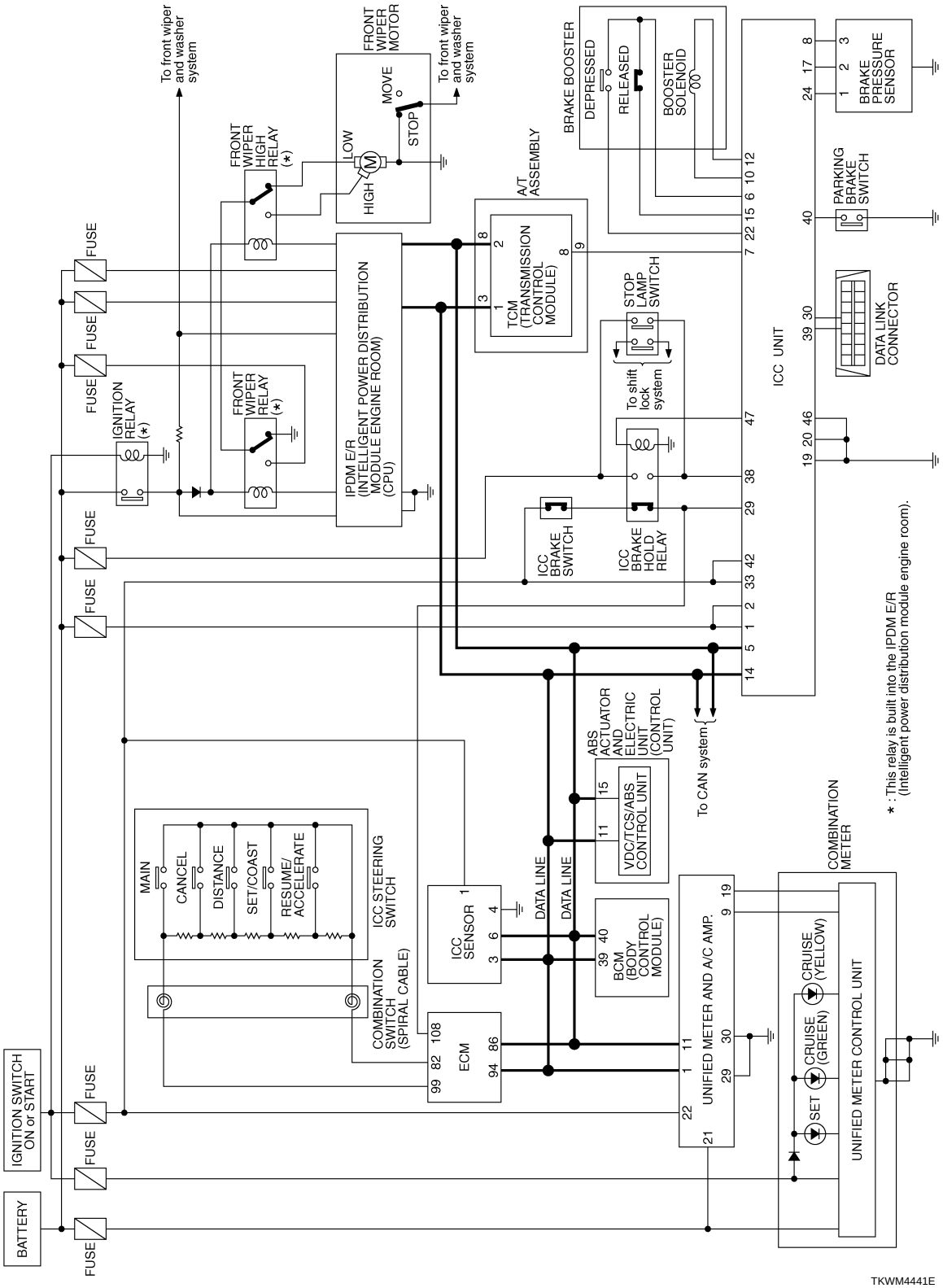
INFOID:0000000001328817



WIRING DIAGRAM

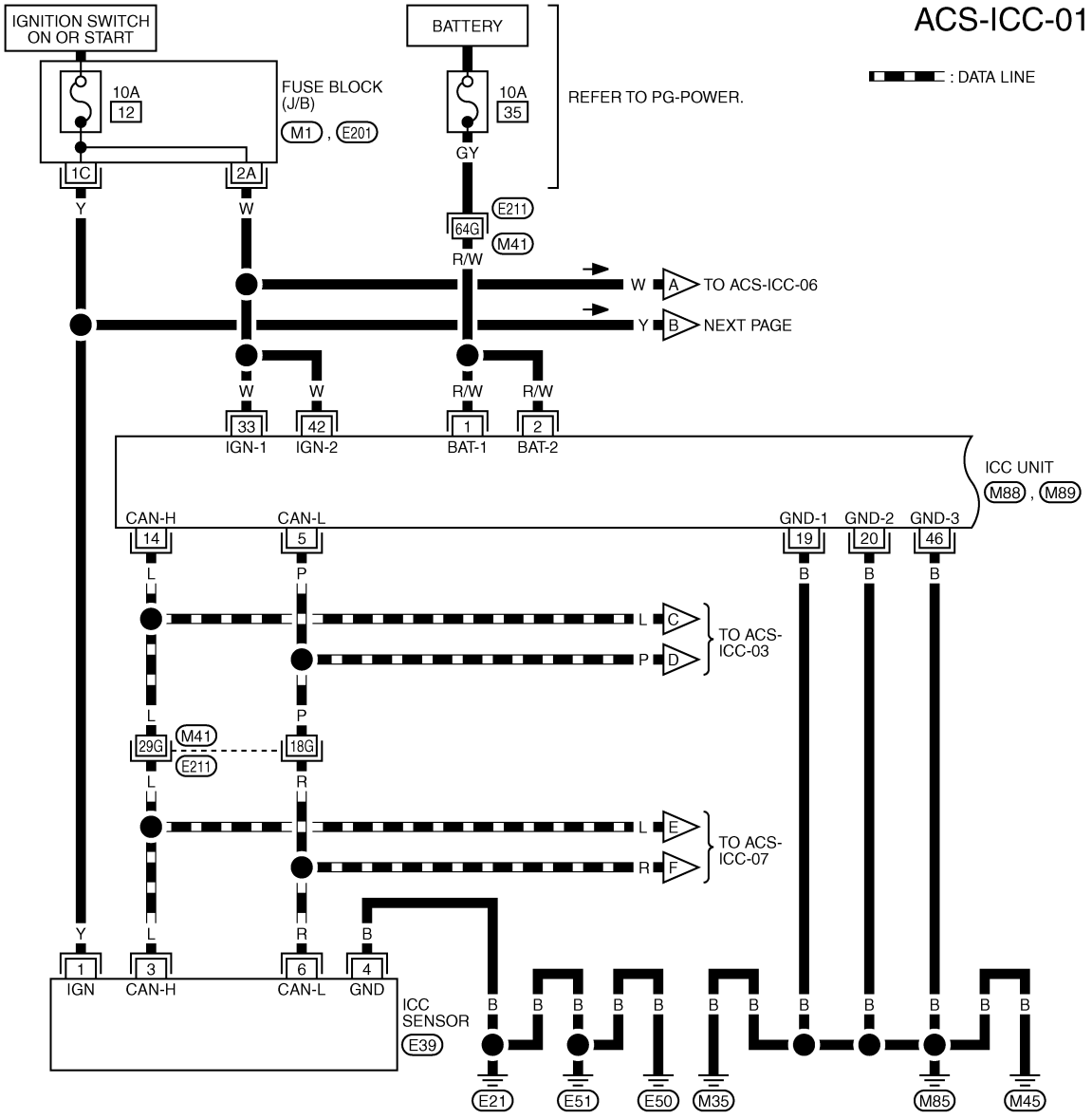
Schematic

INFOID:0000000001328818



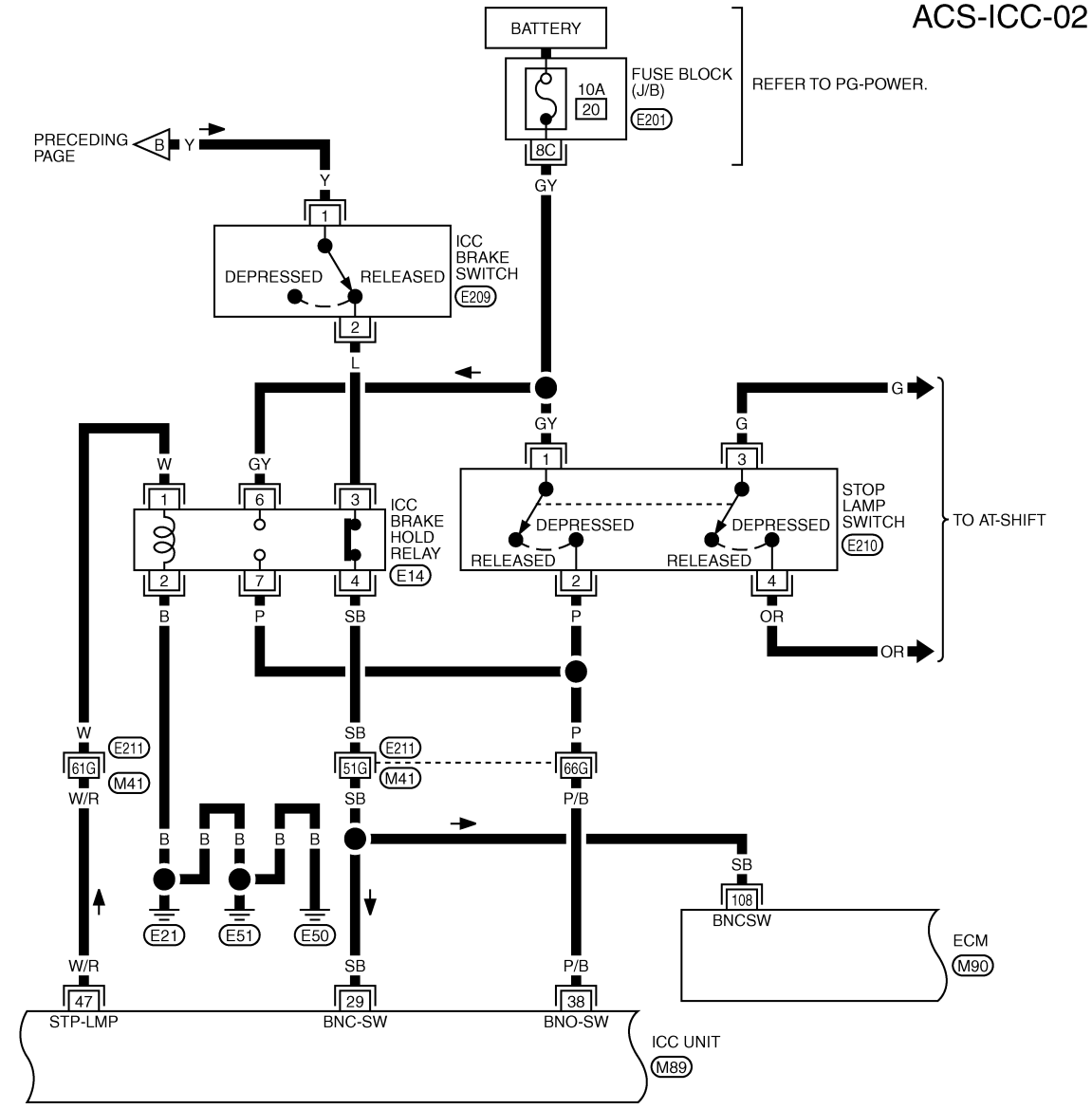
Wiring Diagram - ICC -

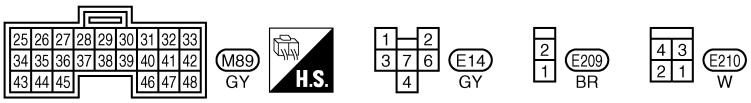
INFOID:0000000001328819



TKWM4442E

ACS-ICC-02

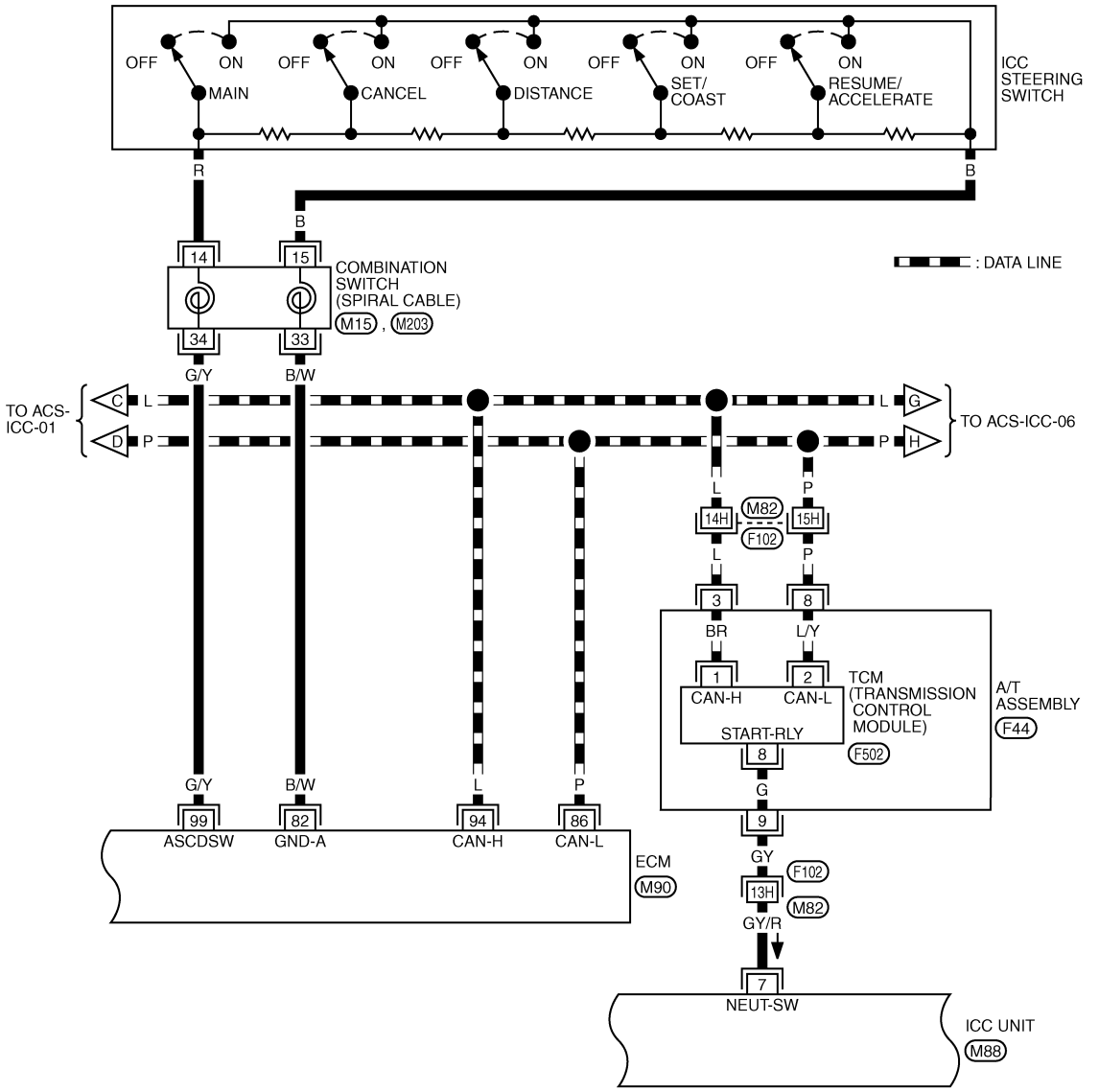


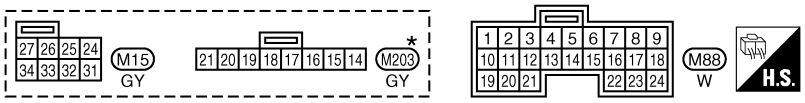


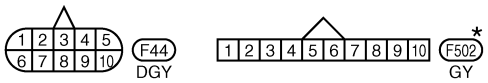
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
E201 -FUSE BLOCK-JUNCTION BOX (J/B)
M90 -ELECTRICAL UNITS

TKWM4443E

ACS-ICC-03





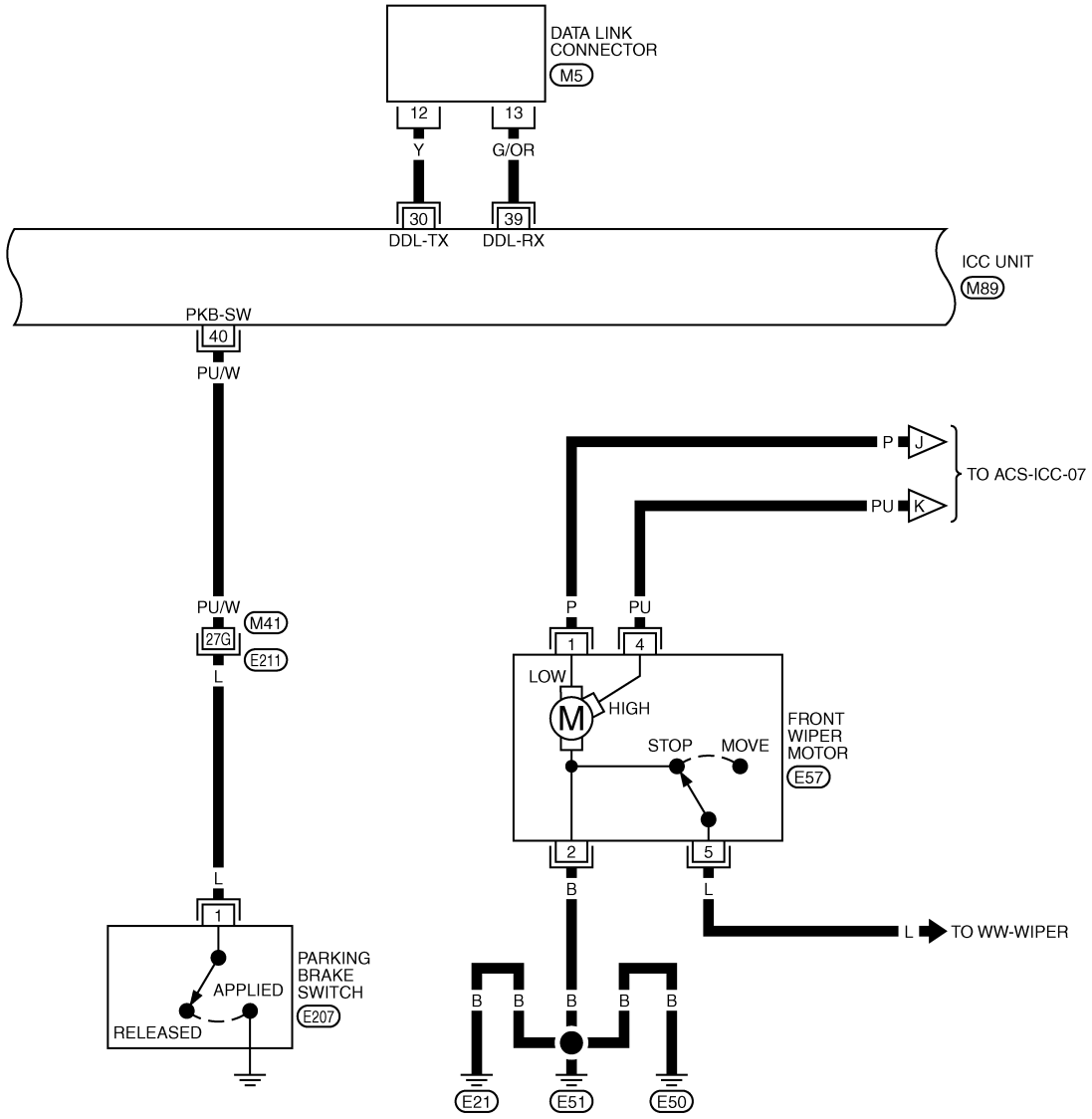


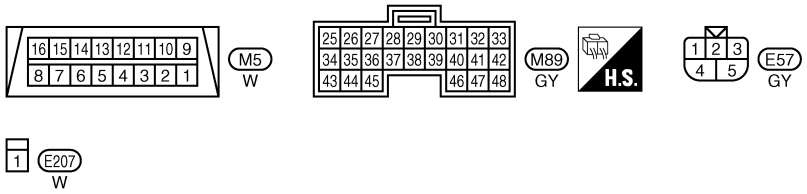
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
F102 -SUPER MULTIPLE JUNCTION (SMJ)
M90 -ELECTRICAL UNITS

TKWM4444E

ACS-ICC-04

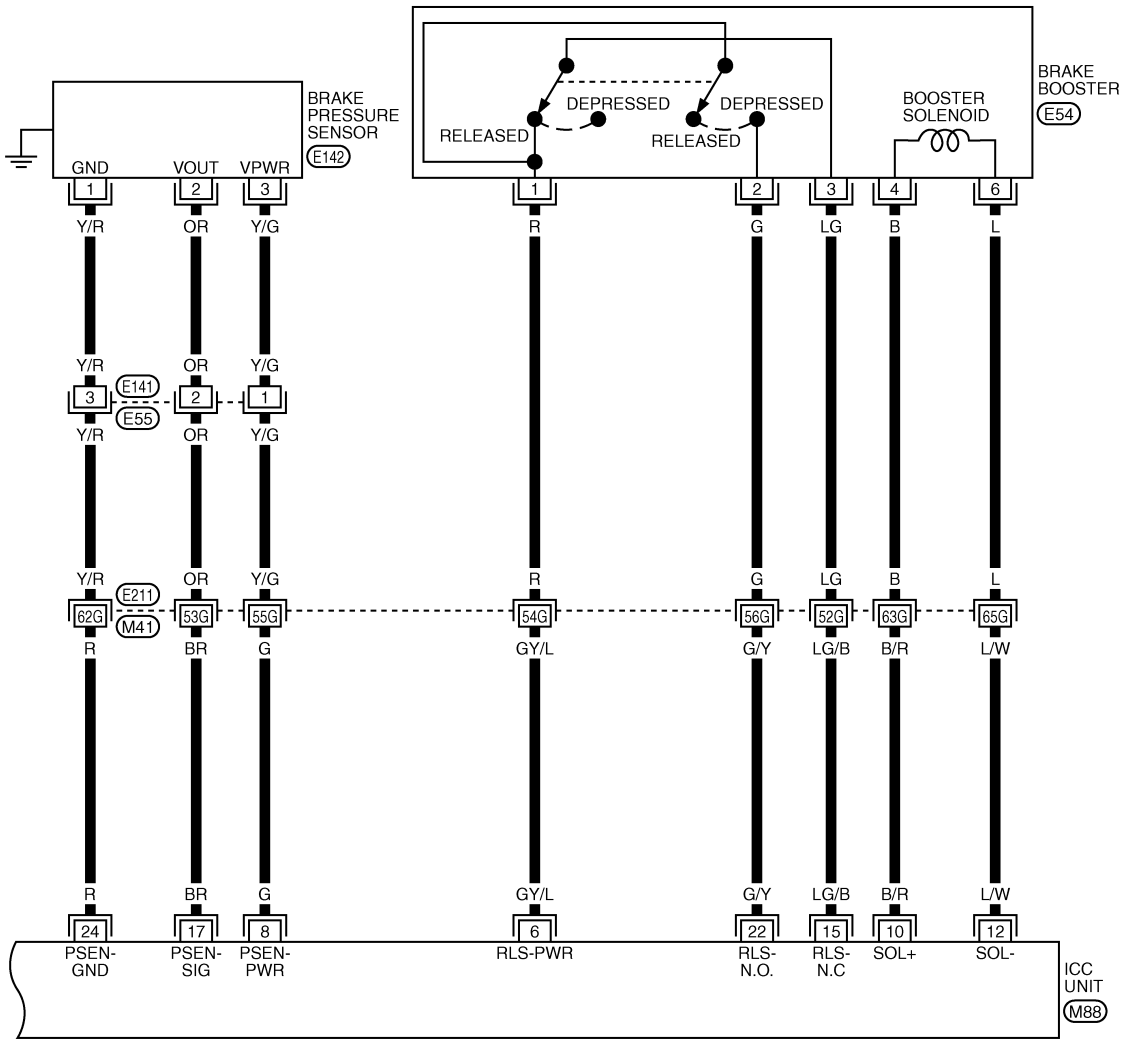


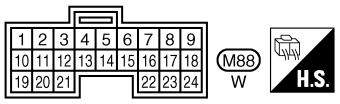


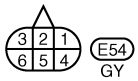
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

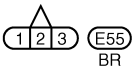
TKWM4445E

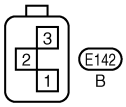
ACS-ICC-05





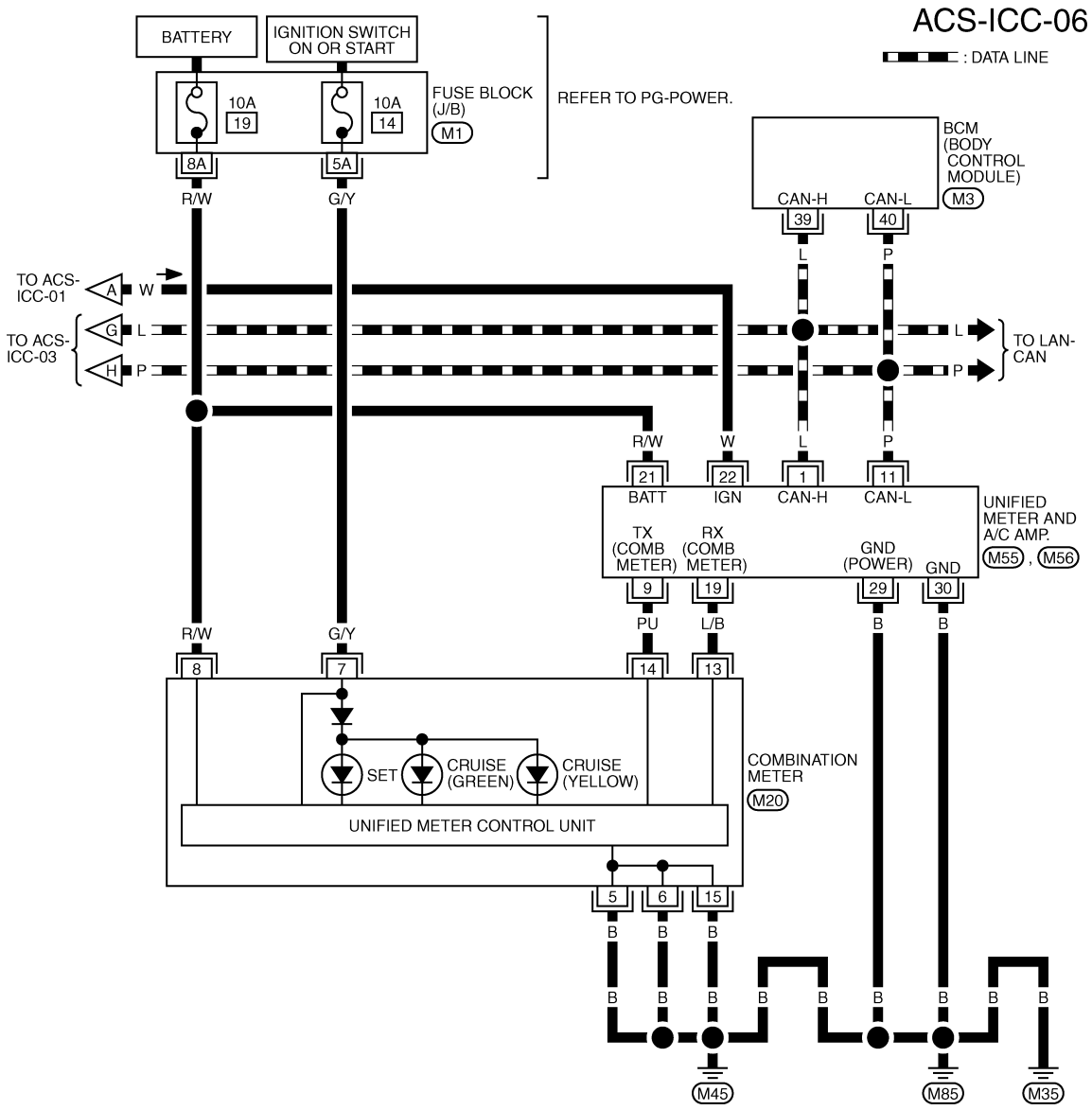


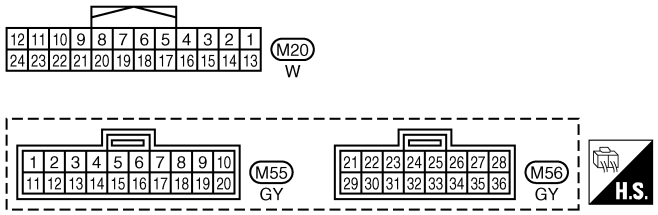




REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

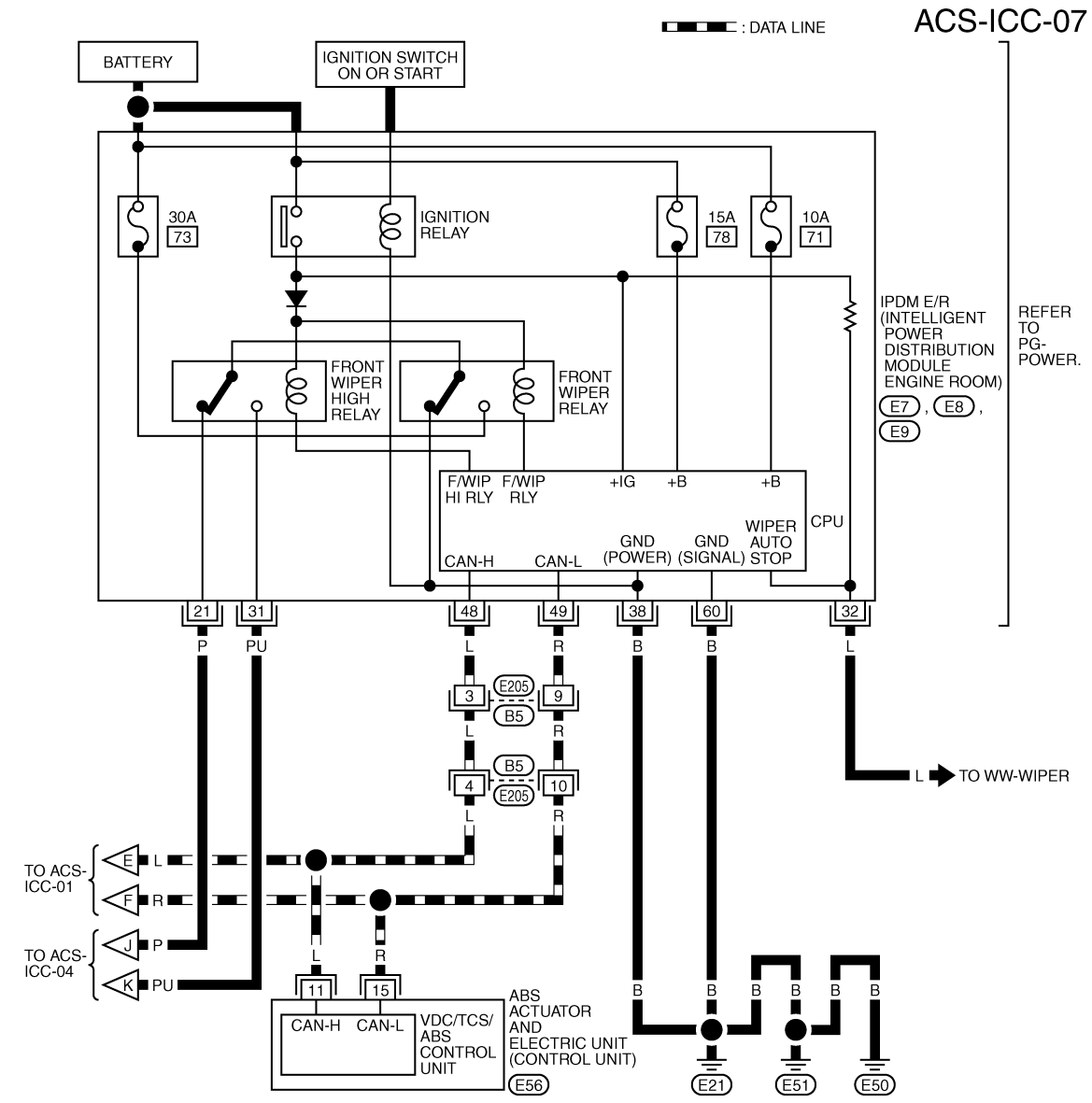
TKWM4446E





REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 -ELECTRICAL UNITS

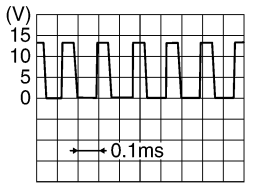
TKWM4447E


: DATA LINE
ACS-ICC-07
BATTERY
IGNITION SWITCH ON OR START
30A 73
IGNITION RELAY
15A 78
10A 71
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E7, E8, E9
REFER TO PG-POWER.
FRONT WIPER HIGH RELAY
FRONT WIPER RELAY
F/WIP HI RLY
F/WIP RLY
+IG
+B
+B
CPU
WIPER AUTO STOP
GND (POWER)
GND (SIGNAL)
CAN-H
CAN-L
21 P
31 PU
48 L
49 R
38 B
60 B
32 L
E205
B5
3 L
9 R
4 L
10 R
L TO WW-WIPER
TO ACS-ICC-01
E L
F R
TO ACS-ICC-04
J P
K PU
11 L
15 R
CAN-H CAN-L
VDC/TCS/ABS CONTROL UNIT
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E56
B B B B B B
E21
E51
E50
REFER TO THE FOLLOWING.
E56 -ELECTRICAL UNITS
E7 GY
E8 W
E9 W
H.S.
B5 W
TKWM4448E

TERMINALS AND REFERENCE VALUE

Terminal and Reference Value for ICC Unit

INFOID:0000000001328820

Terminals (Wire color)		Item	Condition		Voltage (V)
+	–		Ignition switch	Operation	
1 (R/W) 2 (R/W)	Ground	Battery power supply	OFF	—	Battery voltage
5 (P)		CAN-L	—	—	—
6 (GY/L)		Release switch power supply	ON	—	Approx. 10
7 (GY/R)		NEUT-SW	ON	Selector lever in “N” or “P” positions	Approx. 12
				Selector lever in other positions	Approx. 0
8 (G)	24 (R)	Brake pressure sensor power supply	ON	—	Approx. 5
10 (B/R)	Ground	Brake booster solenoid (+) side	ON	—	Approx. 12
12 (L/W)		Brake booster solenoid (–) side	ON	Solenoid operating	 PKIA9673E
				Solenoid not operating	Approx. 12
14 (L)		CAN-H	—	—	—
15 (LG/B)		Brake release switch (normal closed)	ON	Depress the brake pedal	Approx. 0
				Release the brake pedal	Approx. 10
17 (BR)	24 (R)	Brake pressure sensor signal	ON	Release the brake pedal	Approx. 0.5
				Depress the brake pedal	Approx. 0.5 - 3 (Note) Voltage becomes higher depending on effectiveness of depressing brakes.

Terminals (Wire color)		Item	Condition			Voltage (V)
+	–		Ignition switch	Operation		
19 (B) 20 (B) 46 (B)	Ground	Ground	ON	—		Approx. 0
22 (G/Y)		Brake release switch (normally open)	ON	Depress the brake pedal		Approx. 10
				Release the brake pedal		Approx. 0
24 (R)		Brake pressure sensor signal ground	—	—		Approx. 0
29 (SB)		ICC brake switch (normal closed)	ON	Selector lever: Not in “N” or “P” position	Depress the brake pedal	Approx. 0
					Release the brake pedal	Approx. 12
30 (Y)		DDL-TX	—	—		—
33 (W) 42 (W)		Ignition switch ON or START	ON	—		Battery voltage
38 (P/B)		Stop lamp switch (normally open)	ON	Depress the brake pedal		Approx. 12
				Release the brake pedal		Approx. 0
39 (G/OR)		DDL-RX	—	—		—
40 (PU/W)	Ground	Parking brake signal	ON	Depress the parking brake		Approx. 0
				Release the parking brake		Approx. 12
47 (W/R)		Stop lamp drive output signal	ON	Brake operating with ICC system		Approx. 12
				Brake not operating with ICC system		Approx. 0

Terminal and Reference Value for ICC Sensor

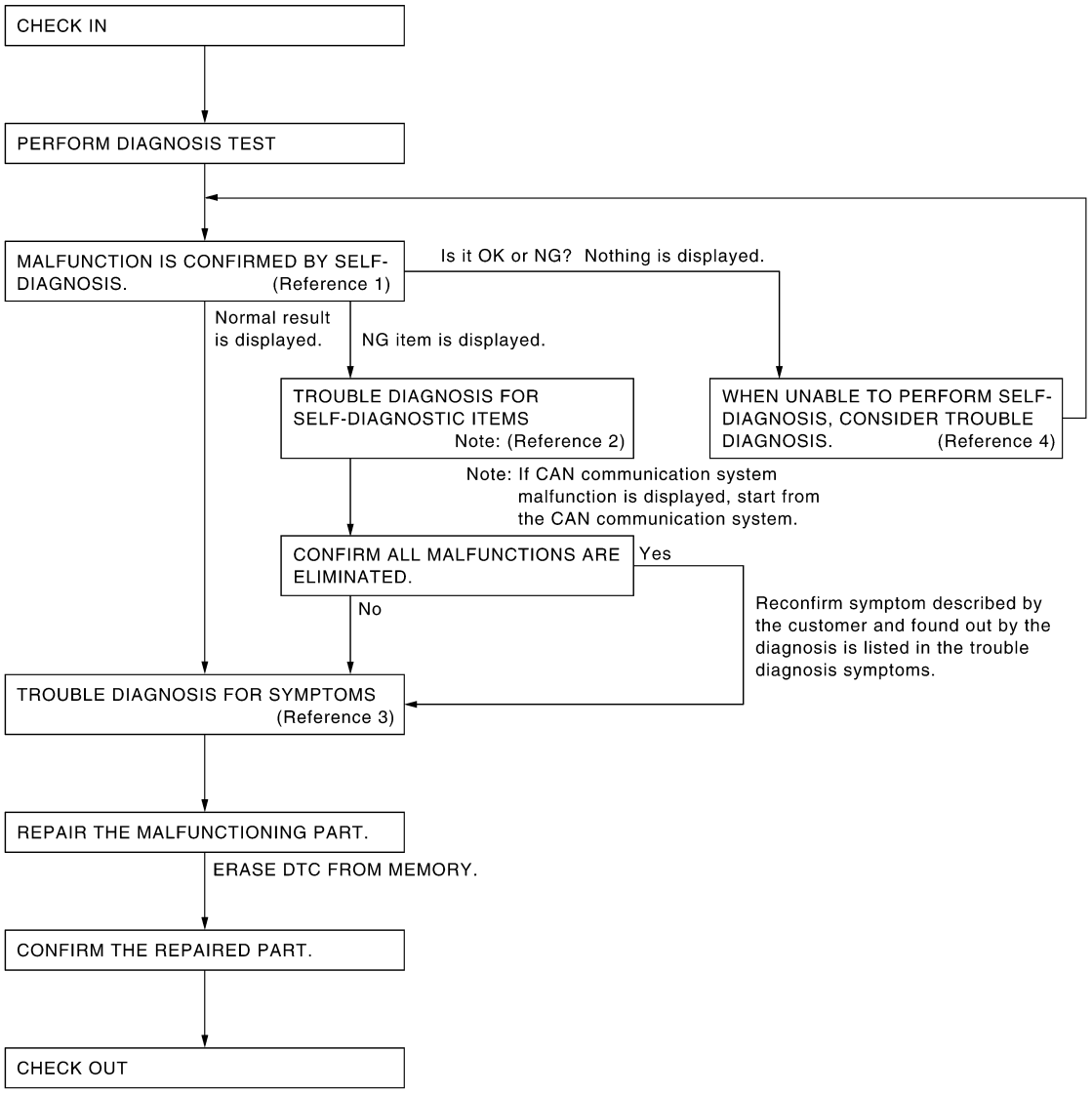
INFOID:0000000001328821

Terminals (Wire color)		Item	Condition		Voltage (V)
+	–		Ignition switch	Operation	
1 (Y)	Ground	ICC sensor power supply	ON	—	Battery voltage
3 (L)		CAN-H	—	—	—
4 (B)		Ground	—	—	Approx. 0
6 (R)		CAN-L	—	—	—

TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

Work Flow

INFOID:0000000001328822



SKIA1227E

- Reference 1··· Refer to ACS-32, "Self-Diagnostic Function".
- Reference 2··· Refer to ACS-35, "Diagnostic Trouble Code (DTC) Chart".
- Reference 3··· Refer to ACS-55, "Symptom Chart".
- Reference 4··· Refer to GI-35, "CONSULT-III/GST Data Link Connector (DLC) Circuit"/ACS-32, "Self-Diagnostic Function".

CONSULT-III Function (ICC)

INFOID:0000000001328823

DESCRIPTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Test mode	Function
Self Diagnostic Results	Displays malfunctioning system memorized in ICC unit.
Data Monitor	Displays real-time input/output data of ICC unit.
Active Test	Enables operation check of electrical loads by sending driving signal to them.

Test mode	Function
Work Support	• Monitors aiming direction to facilitate laser beam aiming operation. • Indicates causes of automatic cancellation of the ICC system.
Ecu Identification	Displays part number of ICC unit.

WORK SUPPORT

Operation	Function
CAUSE OF AUTO-CANCEL	Indicates causes of automatic cancellation of the ICC system.
LASER BEAM ADJUST	Outputs laser beam, calculates dislocation of the beam, and indicates adjustment direction. For details, refer to ACS-14.

Cause of Auto-Cancel

Display Item List

Cause of cancellation	Description
OPERATING WIPER	Windshield wipers were operated at HI or LO speed operation.
OPERATING ABS	ABS function was operated.
OPERATING TCS	TCS function was operated.
OPERATING VDC	VDC function was operated.
OPE SW VOLT CIRC	Outside the standard control switch input voltage was detected.
ECM CIRCUIT	ECM did not permit ICC operation.
LASER SUN BEAM	Intense light such as sunlight entered ICC sensor light sensing part.
LASER TEMP	Temperature around ICC sensor became low.
OP SW DOUBLE TOUCH	ICC steering switches were pressed at the same time.
WHL SPD ELEC NOISE	Wheel speed sensor signal caught electromagnetic noise.
VDC/TCS OFF SW	VDC OFF switch was pressed.
WHEEL SPD UNMATCH	Wheel speed became different from AT vehicle speed.
TIRE SLIP	Wheel slipped.
PKB SW ON	Parking brake is applied.
IGN LOW VOLT	Power supply voltage became low.
SNOW MODE SW	Snow mode switch was pressed.
NO RECORD	—

NOTE:
Last five cancel (system cancel) causes are displayed.

SELF DIAGNOSTIC RESULT

For details, refer to ACS-35, "Diagnostic Trouble Code (DTC) Chart".

DATA MONITOR

×: Applicable

Monitored Item [unit]	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	Description
VHCL SPEED SE [km/h] or [mph]	×	×	×	Indicates vehicle speed calculated from ICC unit through CAN communication [ABS actuator and electric unit (control unit) transmits wheel speed sensor signal through CAN communication].
SET VHCL SPD [km/h] or [mph]		×	×	Indicates set vehicle speed memorized in ICC unit.
THRTL OPENING [%]	×	×	×	Indicates throttle angle read from ICC unit through CAN communication (ECM transmits throttle angle through CAN communication).

Monitored Item [unit]	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	Description
ENGINE RPM [rpm]	×		×	Indicates engine speed read from ICC unit through CAN communication (ECM transmits engine speed through CAN communication).
DISTANCE ADJ [ShortMid/Long]	×	×	×	Indicates set distance memorized in ICC unit.
WIPER SW [Off/Low/High]	×		×	Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication).
MAIN SW [On/Off]	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
SET/COAST SW [On/Off]	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CANCEL SW [On/Off]	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
RESUME/ACC SW [On/Off]	×	×	×	Indicates [On/Off] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).
CRUISE OPE [On/Off]		×	×	Indicates whether controlling or not (On means “controlling”).
BRAKE SW [On/Off]	×	×	×	Indicates [On/Off] status as judged from ICC brake switch signal.
STOP LAMP SW [On/Off]	×	×	×	Indicates [On/Off] status as judged from stop lamp switch signal.
RELEASE SW NO [On/Off]	×		×	Indicates [On/Off] status as judged from release switch signal. ON when brake is depressed. OFF when brake is not depressed.
RELEASE SW NC [On/Off]	×		×	Indicates [On/Off] status as judged from release switch signal. ON when brake is not depressed. OFF when brake is depressed.
IDLE SW [On/Off]	×		×	Indicates [On/Off] status of idle switch read from ICC unit through CAN communication (ECM transmits On/Off status through CAN communication).
GEAR [1, 2, 3, 4, 5]	×		×	Indicates AT gear position read from ICC unit through CAN communication (TCM transmits gear position through CAN communication).
BUZZER O/P [On/Off]			×	Indicates [On/Off] status of ICC warning chime output.
ICC WARNING			×	**NOTE:** This item is displayed, but cannot monitor.
VHCL SPD AT [km/h] or [mph]			×	Indicates vehicle speed calculated from AT vehicle speed sensor read from ICC unit through CAN communication (TCM transmits AT vehicle speed sensor signal through CAN communication).
PRESS SENS [bar]	×	×	×	Indicates brake fluid pressure value calculated from signal voltage of pressure sensor.
PRESS SENS 2	×		×	**NOTE:** This item is displayed, but cannot monitor.
D RANGE SW [On/Off]	×		×	Indicates [On/Off] status of “D” position read from ICC unit through CAN communication (TCM transmits On/Off condition of “D” position through CAN communication).
A/T OD OFF [On/Off]			×	Indicates [On/Off] status of OD cancel output under control.

Monitored Item [unit]	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	Description
NP RANGE SW [On/Off]	×		×	Indicates PNP switch signal read from ICC unit through CAN communication (TCM transmits PNP switch signal through CAN communication).
DISTANCE			×	**NOTE:** This item is displayed, but cannot monitor.
RELATIVE SPD			×	**NOTE:** This item is displayed, but cannot monitor.
STP LMP DRIVE [On/Off]		×	×	Indicates [On/Off] status of brake hold relay drive output.
TURN SIGNAL	×		×	**NOTE:** This item is displayed, but cannot monitor.

ACTIVE TEST

CAUTION:

- **Never perform the active test while driving.**
- **Active test cannot be started while ICC system warning indicator illuminates.**

ICC BUZZER 1

- Touch “ON” and “OFF” to check that ICC warning chime operates as in the following chart.

BUZZER O/P	ON	OFF
Buzzer sound	Beep	Not activated

METER LAMP

- Start engine.
- Touch “ON” and “OFF” to check that ICC system display operates as in the following chart.

METER LAMP	ON	OFF
ICC system display	Full illumination	OFF

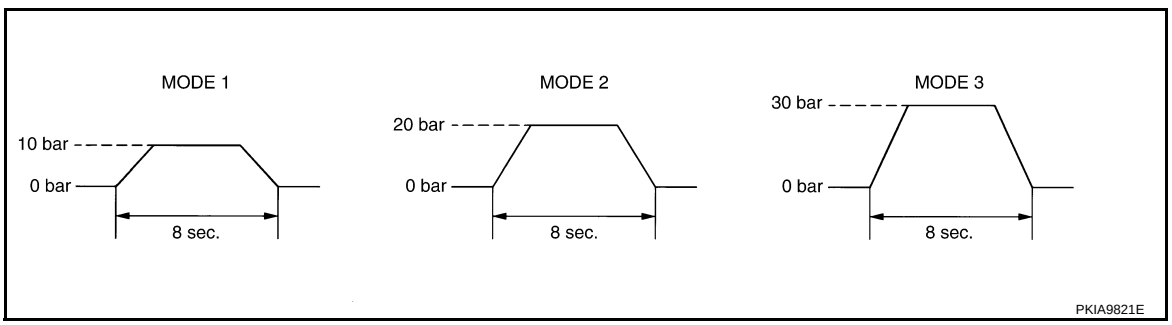
STOP LAMP

- Touch “ON” and “OFF” to check that stop lamp operates as in the following chart.

STP LMP DRIVE	ON	OFF
Stop lamp	Lamp ON	Lamp OFF

BOOSTER SOL/V 3

- Start engine.
- Touch any of “MODE 1”, “MODE 2”, “MODE 3” to check that following operation condition is caused by operating monitor and brake pedal.
- “START” is displayed 10 seconds after operation start. (Active test is completed.)



Self-Diagnostic Function

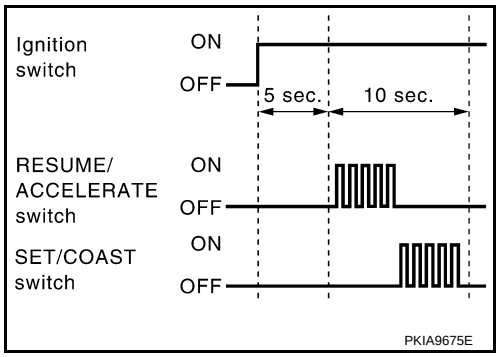
INFOID:000000001328824

WITH CONSULT-III

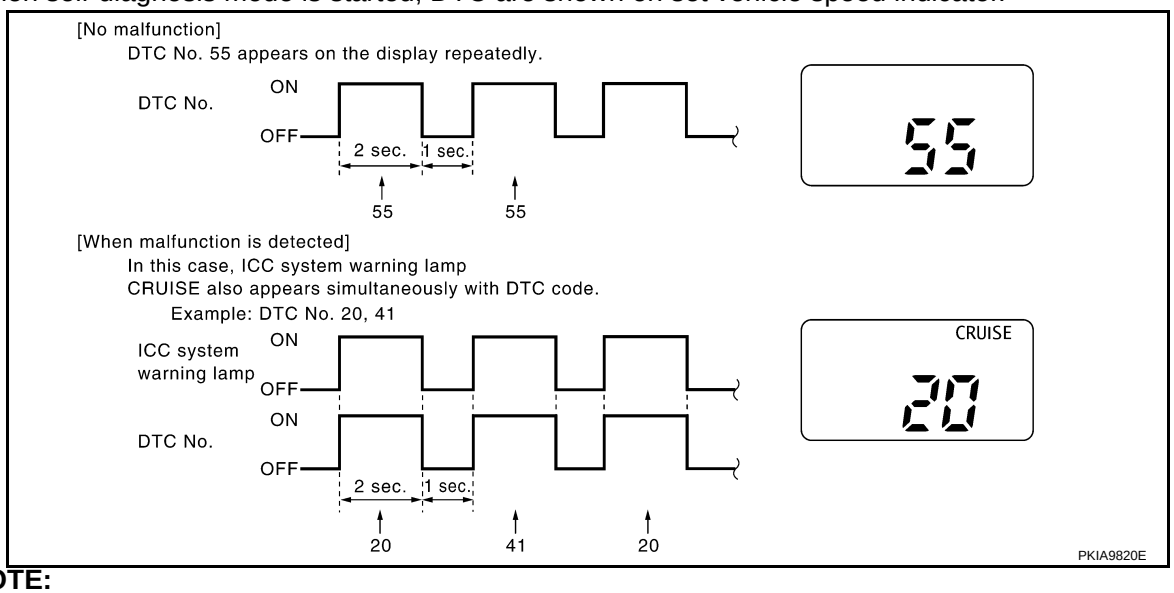
1. Go to operation check after asking the customer for symptom information. Refer to ACS-11, "ICC System Running Test".
2. Stop vehicle, turn ignition switch OFF, then connect CONSULT-III.
3. With engine started, check “Self Diagnostic Result” of ICC system.
4. Self-diagnostic result appears on screen. If “NO DTC ···” is shown, check ICC warning lamp. If any malfunction is indicated, GO TO step 5.
5. According to ACS-35, "Diagnostic Trouble Code (DTC) Chart", perform appropriate check, and repair or replace malfunctioning part as necessary.
6. Turn ignition switch OFF.
7. Start the engine and select “Self Diagnostic Result” of ICC system, and erase DTC.
   NOTE:
   If the memory does not erase, go to 5.
8. Perform ICC system running test (drive vehicle with ICC system ON), and make sure that ICC warning lamp does not illuminate.

WITHOUT CONSULT-III

1. Go to operation check after asking the customer for symptom information. Refer to ACS-11, "ICC System Running Test".
2. Stop the vehicle to start the self-diagnosis.
3. Turn ignition switch OFF.
4. From 5 seconds through 15 seconds after turning ignition switch ON, press RESUME/ACCELERATE switch 5 times, and SET/COAST switch 5 times.
   NOTE:
   - Never start engine.
   - Never turn the MAIN switch ON.
   - When operation above is not completed from 5 seconds through 15 seconds, start again from above go to 3.
   - If self-diagnosis mode cannot be started after several attempts, the ICC unit may have had malfunction. Repair or replace it. Refer to ACS-59, "SELF-DIAGNOSIS BY ICC SYSTEM DISPLAY WILL NOT RUN".



5. When self-diagnosis mode is started, DTC are shown on set vehicle speed indicator.



NOTE:
- DTC will disappear after 5 minutes.
- When more than one malfunction is detected, a maximum of 3 code numbers can be stored; the latest malfunction will be displayed first.

6. Check ACS-35, "Diagnostic Trouble Code (DTC) Chart", and repair or replace if necessary.
7. After repair, erase DTC stored in the ICC unit.

8. DTC 55 will be shown.
9. Turn ignition switch OFF to exit the diagnosis.
10. Perform ICC system running test (drive vehicle with ICC system ON), and make sure that ICC warning lamp (Orange) does not illuminate.

Self-Diagnostic Erasing Method

1. Stop the vehicle and turn the ignition switch OFF.
2. Turn ignition switch ON and start self-diagnosis.
3. During self-diagnosis mode, press CANCEL switch 5 times, and DISTANCE switch 5 times in this order.
   NOTE:
   • Press them within 10 seconds after pressing CANCEL switch at first.
   • When operation is not completed within 10 seconds, start again from step 2 above.
4. DTC 55 will be shown.
   NOTE:
   DTC of an existing malfunction will not be erased.
5. Turn ignition switch OFF to exit the diagnosis.
6. Perform ICC system running test (drive vehicle with ICC system ON), and make sure that ICC system warning lamp (Orange) does not illuminate.

TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

Diagnostic Trouble Code (DTC) Chart

INFOID:0000000001328825

×: Applicable

DTC No.	CONSULT-III screen terms	ICC system warning lamp	Fail-safe			Malfunctions detected where...	Reference page
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Brake assist (with preview function)		
11	CONTROL UNIT	×	×	×	×	• ICC unit internal malfunction	ACS-36
20	CAN COMM CIRCUIT	×	×	×	×	• ICC unit detected CAN communication malfunction.	ACS-36
31	POWER SUPPLY CIR	×	×	×	×	• ICC unit power supply voltage is excessively low (less than 8 V).	ACS-37
34	POWER SUPPLY CIR2	×	×	×	×	• ICC unit power supply voltage is excessively high (more than 19 V).	ACS-37
41	VHCL SPEED SE CIRC	×	×	×	×	• Wheel sensor malfunction. • ABS actuator and electric unit (control unit) malfunction • AT vehicle speed sensor malfunction • TCM malfunction	ACS-37
43	ABS/TCS/VDC CIRC	×	×	×	×	• VDC/TCS/ABS system malfunction	ACS-38
45	BRAKE SW/STOP L SW	×	×	×	×	• Brake and stop lamp switch harness is open or shorted. • Brake and stop lamp switch is ON or stuck to OFF. • Brake and stop lamp switch is stuck to ON.	ACS-38
46	OPERATION SW CIRC	×	×	×		• ICC steering switch harness or spiral cable is open or shorted. • ICC steering switch malfunction	ACS-40
61	PRESS SEN CIRCUIT	×	×		×	• Brake pressure sensor harness is open or shorted. • Brake pressure sensor malfunction • Brake pressure sensor input circuit malfunction	ACS-41
62	BOOSTER SOL/V CIRCUIT	×	×		×	• Solenoid harness is open or shorted. • Solenoid is open. • Solenoid drive circuit malfunction	ACS-42
63	RELEASE SW CIRCUIT	×	×	×	×	• Release switch harness is open or shorted. • Release switch malfunction • Release switch input circuit malfunction	ACS-43
65	PRESSURE CONTROL	×	×		×	• Booster malfunction	ACS-45
74	LASER BEAM OFF CNTR	×	×		×	• Laser beam of ICC sensor is off the aiming point.	ACS-45
90	STOP LAMP RLY FIX	×	×		×	• Normally open terminal of stop lamp relay is stuck.	ACS-46

DTC No.	CONSULT-III screen terms	ICC system warning lamp	Fail-safe			Malfunctions detected where...	Reference page
			Vehicle-to-vehicle distance control mode	Conventional (fixed speed) cruise control mode	Brake assist (with preview function)		
92	ECM CIRCUIT	×	×	×	×	• ECM malfunction • Accelerator pedal position sensor malfunction • ICC unit malfunction	ACS-50
96	NP RANGE	×	×	×		• Park/neutral position switch harness is open or shorted. • Park/neutral position switch malfunction. • TCM malfunction	ACS-51
97	AT CIRCUIT	×	×	×		• TCM malfunction	ACS-52
98	GEAR POSITION	×	×	×		• TCM malfunction • AT turbine revolution sensor malfunction • AT vehicle speed sensor malfunction	ACS-52
102	RADAR STAIN	×	×		×	• ICC sensor body window has contamination.	ACS-53
103	LASER SENSOR FAIL	×	×		×	• ICC sensor internal malfunction	ACS-53
104	LASER AIMING INCMP	×	×		×	• Laser beam aiming of ICC sensor is not adjusted.	ACS-54
107	LASER COMM FAIL	×	×		×	• CAN data received by ICC sensor is strange (from ICC unit, combination meter or ECM).	ACS-54
109	LASER HIGH TEMP	×	×		×	• Temperature around ICC sensor is excessively high.	ACS-54

DTC 11 CONTROL UNIT

INFOID:0000000001328826

1. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if any item other than “DTC 11 CONTROL UNIT” is indicated on self-diagnosis display.

Is any indicated?

YES >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 20 CAN COMM CIRCUIT

INFOID:0000000001328827

1. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Turn ignition switch ON and wait for 2 second or more.
2. Check self-diagnosis of ICC system.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-14, "Trouble Diagnosis Flow Chart".

NO >> Refer to GI-35, "CONSULT-III/GST Data Link Connector (DLC) Circuit".

DTC 31 POWER SUPPLY CIR, DTC 34 POWER SUPPLY CIR 2

INFOID:0000000001328828

1. CHECK CONNECTOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector, and connect it securely again.
3. Erase DTC and perform ICC running test. Then perform self-diagnosis of ICC system again.

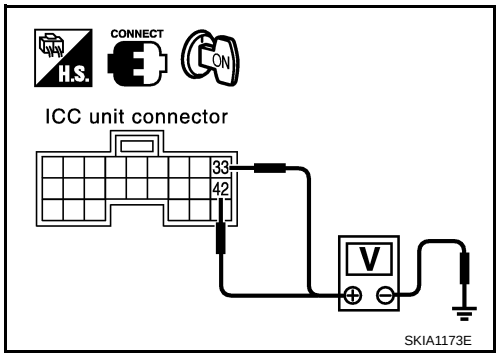
Is malfunction indicated?

YES >> GO TO 2.
NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC running test. Then perform self-diagnosis of ICC system again.

2. CHECK POWER SUPPLY CIRCUIT FOR ICC UNIT

1. Turn ignition switch ON.
2. Check voltage between ICC unit harness connector and ground.

ICC unit connector	Terminal		Voltage (Approx.)
	(+)	(–)	
M89	33	Ground	Battery voltage
	42		



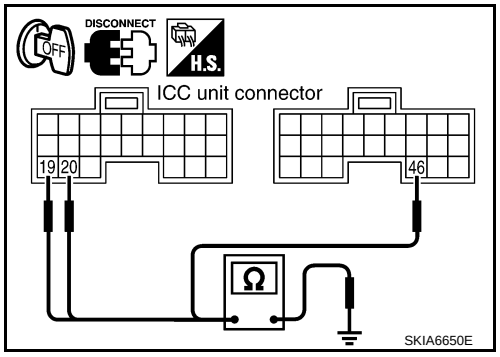
OK or NG

OK >> GO TO 3.
NG >> 1. Repair ICC unit power supply harness.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3. CHECK GROUND CIRCUIT FOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector.
3. Check continuity between ICC unit harness connector and ground.

ICC unit connector	Terminal	Ground	Continuity
M88	19	Ground	Yes
	20		
M89	46		



OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Repair ICC unit ground harness.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 41 VHCL SPEED SE CIRC

INFOID:0000000001328829

1. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 43 ABS/TCS/VDC CIRC” or “DTC 20 CAN COMM CIRCUIT” other than “DTC 41 VHCL SPEED SE CIRC” is indicated in self-diagnosis item in the display.

Is any indicated?

YES >> 1. Repair or replace applicable item.

2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> GO TO 2.

2.CHECK AT VEHICLE SPEED SENSOR

With “Data Monitor” of “ICC”, check “VHCL SPD AT” operates normally.

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Perform self-diagnosis of TCM.
2. After repairing or replacing applicable item, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 43 ABS/TCS/VDC CIRC

INFOID:0000000001328830

1.PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 20 CAN COMM CIRCUIT” other than “DTC 43 ABS/TCS/VDC CIRC” is indicated in self-diagnosis item in the display.

Is it indicated?

YES >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

1. Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to BRC-26, "Self-Diagnosis".
2. Check if malfunction is indicated.

Is malfunction indicated?

YES >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 45 BRAKE SW/STOP L SW

INFOID:0000000001328831

1.CHECK CONNECTOR FOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector, and connect it securely again.
3. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

2.CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

With “Data Monitor” of “ICC”, check if “STOP LAMP SW” and “BRAKE SW” are operated normally.

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG-1 >> “BRAKE SW” NG: GO TO 3.

NG-2 >> “STOP LAMP SW” NG: GO TO 5.

3.CHECK BRAKE SWITCH INSTALLATION AND ADJUSTMENT

Check brake switch for proper installation, and adjust the switch if necessary. Refer to BR-5.

OK or NG

OK >> GO TO 4.
NG >> After adjustment, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

4.CHECK ICC BRAKE SWITCH

Check ICC brake switch. Refer to ACS-64, "ICC Brake Switch and Stop Lamp Switch".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Replace ICC brake switch.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

5.CHECK STOP LAMP ILLUMINATION

Check stop lamp illumination.

OK or NG

OK >> GO TO 6.
NG >> 1. Check stop lamp circuit.
2. After repairing, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

6.CHECK ICC BRAKE HOLD RELAY

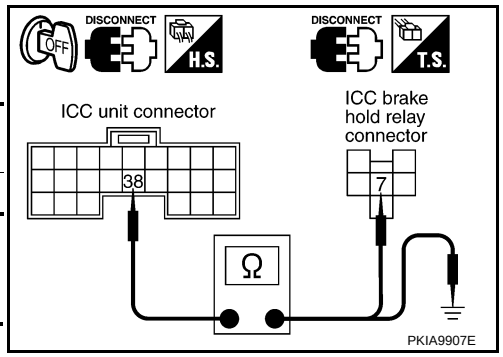
1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check ICC brake hold relay. Refer to ACS-64, "ICC Brake Hold Relay"

OK or NG

OK >> GO TO 7.
NG >> 1. Replace brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

7.CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Disconnect ICC unit connector and stop lamp switch connector.
2. Check continuity between ICC unit harness connector and ICC brake hold relay harness connector.



ICC unit connector	Terminal	ICC brake hold relay connector	Terminal	Continuity
M89	38	E14	7	Yes

3. Check continuity between ICC unit harness connector and ground.

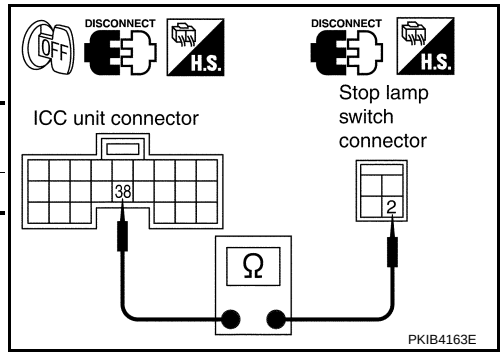
ICC unit connector	Terminal	Ground	Continuity
M89	38		No

OK or NG

OK >> GO TO 8.
NG >> 1. Repair harness between ICC unit and ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

8.CHECK STOP LAMP SWITCH CIRCUIT

Check continuity between ICC unit harness connector and stop lamp switch harness connector.



ICC unit connector	Terminal	Stop lamp switch connector	Terminal	Continuity
M89	38	E210	2	Yes

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Repair harness between ICC unit and stop lamp switch.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 46 OPERATION SW CIRC

INFOID:0000000001328832

1. CHECK CONNECTOR FOR ECM

1. Turn ignition switch OFF.
2. Disconnect ECM connector, and connect it securely again.
3. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

2. CHECK ICC STEERING SWITCH

Check ICC steering switch. Refer to ACS-63, "ICC Steering Switch".

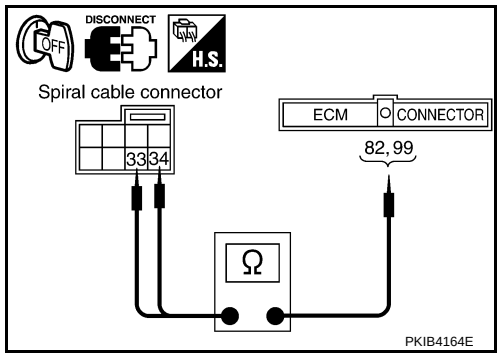
OK or NG

OK >> GO TO 3.

NG >> 1. Replace ICC steering switch.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

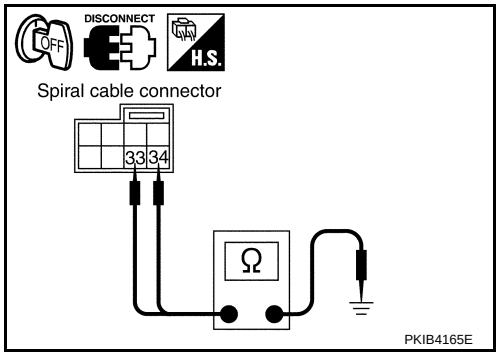
3. CHECK ICC STEERING SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM connector and spiral cable connector.
3. Check continuity between spiral cable harness connector and ECM harness connector.



Spiral cable connector	Terminal	ECM connector	Terminal	Continuity
M15	33	M90	82	Yes
	34		99	

4. Check continuity between spiral cable harness connector and ground.



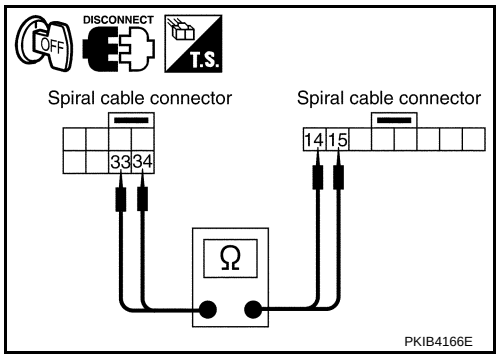
Spiral cable connector	Terminal	Ground	Continuity
M15	33		No
	34		

OK or NG

OK >> GO TO 4.
NG >> 1. Repair harness between ECM and spiral cable.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

4.CHECK SPIRAL CABLE

Check continuity between spiral cable connector terminals.



Spiral cable connector	Terminal	Spiral cable connector	Terminal	Continuity
M15	33	M203	14	Yes
	34		15	

OK or NG

OK >> 1. Perform self-diagnosis of ECM.
2. After repairing or replacing applicable item, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Replace spiral cable.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 61 PRESS SEN CIRCUIT

INFOID:0000000001328833

1.CHECK CONNECTOR BRAKE PRESSURE SENSOR AND ICC UNIT

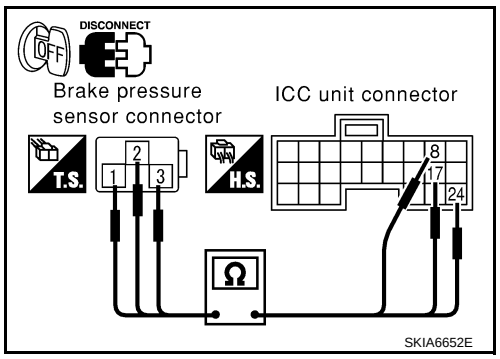
1. Turn ignition switch OFF.
2. Disconnect brake pressure sensor connector and ICC unit connector, and connect them securely again.
3. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.
NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

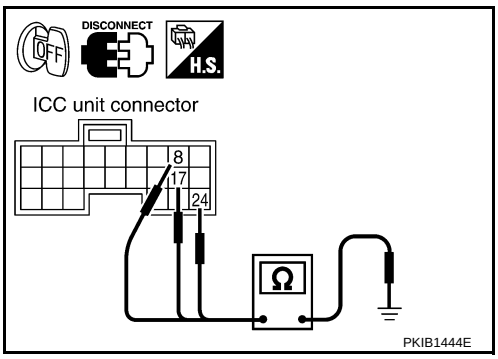
2.CHECK HARNESS BETWEEN BRAKE PRESSURE SENSOR AND ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake pressure sensor connector.
3. Check continuity between brake pressure sensor harness connector and ICC unit harness connector.



Brake pressure sensor connector	Terminal	ICC unit connector	Terminal	Continuity
E142	1	M88	24	Yes
	2		17	
	3		8	

4. Check continuity between ICC unit harness connector and ground.



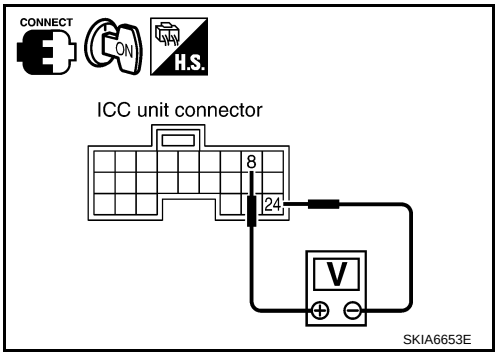
ICC unit connector	Terminal	Ground	Continuity
M88	8		No
	17		
	24		

OK or NG

OK >> GO TO 3.
NG >> 1. Repair harness between brake pressure sensor and ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3.CHECK POWER SUPPLY CIRCUIT FOR BRAKE PRESSURE SENSOR

1. Connect ICC unit connector.
2. Turn ignition switch ON.
3. Check voltage between ICC unit harness connector terminals.



ICC unit connector	Terminal		Voltage (Approx.)
	(+)	(–)	
M88	8	24	5 V

OK or NG

OK >> 1. Replace brake pressure sensor. Refer to BR-12, "Removal and Installation".
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 62 BOOSTER SOL/V CIRCUIT

INFOID:0000000001328834

1.CHECK SOLENOID/RELEASE SWITCH AND ICC UNIT CONNECTOR

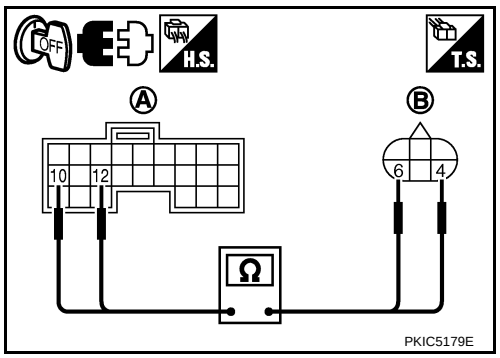
1. Turn ignition switch OFF.
2. Disconnect brake booster connector and ICC unit connector, and connect them securely again.
3. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.
NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

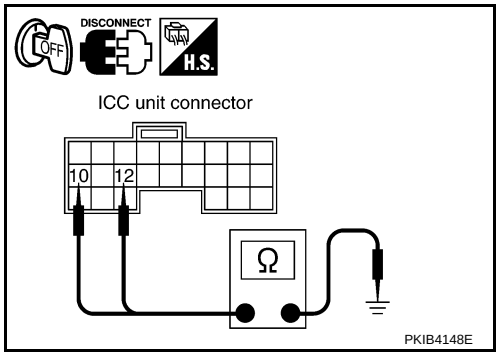
2.CHECK HARNESS BETWEEN SOLENOID/RELEASE SWITCH AND ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake booster connector.
3. Check continuity between ICC unit harness connector (A) and brake booster harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M88	10	E54	4	Yes
	12		6	

4. Check continuity between ICC unit harness connector and ground.



ICC unit connector	Terminal	Ground	Continuity
M88	10		No
	12		

OK or NG

OK >> GO TO 3.
NG >> 1. Repair harness between brake booster and ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3.CHECK BOOSTER SOLENOID

Check booster solenoid. Refer to ACS-63, "Booster Solenoid".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> Booster solenoid malfunction
1. Replace brake booster.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 63 RELEASE SW CIRCUIT

INFOID:0000000001328835

1.CHECK SOLENOID/RELEASE SWITCH AND ICC UNIT CONNECTOR

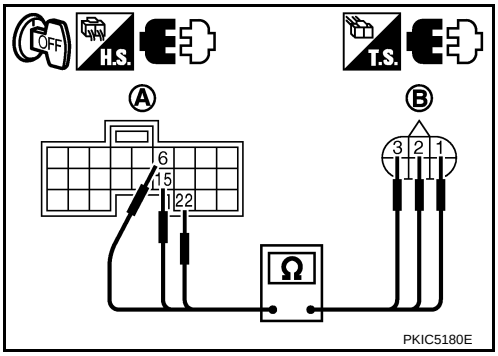
1. Turn ignition switch OFF.
2. Disconnect brake booster connector and ICC unit connector, and connect them securely again.
3. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.
NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

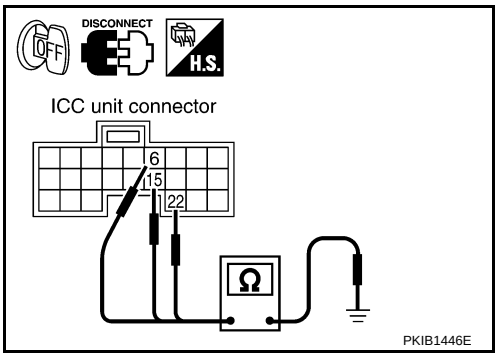
2.CHECK HARNESS SOLENOID/RELEASE SWITCH AND ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake booster connector.
3. Check continuity between ICC unit harness connector (A) and brake booster harness connector (B).



A		B		Continuity
ICC unit connector	Terminal	Brake booster connector	Terminal	
M88	6	E54	1	Yes
	15		3	
	22		2	

4. Check continuity between ICC unit harness connector and ground.



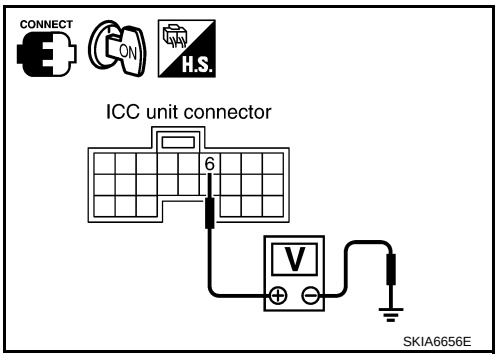
ICC unit connector	Terminal	Ground	Continuity
M88	6		No
	15		
	22		

OK or NG

OK >> GO TO 3.
NG >> 1. Repair harness between brake booster and ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3. CHECK RELEASE SWITCH POWER SUPPLY CIRCUIT

1. Connect ICC unit connector.
2. Turn ignition switch ON.
3. Check voltage between ICC unit harness connector and ground.



ICC unit connector	Terminal		Voltage (Approx.)
	(+)	(–)	
M88	6	Ground	10 V

OK or NG

OK >> GO TO 4.
NG >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

4. CHECK RELEASE SWITCH

1. Turn ignition switch OFF.
2. Check release switch. Refer to ACS-63, "Release Switch".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> Release switch malfunction
1. Replace brake booster.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 65 PRESSURE CONTROL

INFOID:0000000001328836

1. OPERATION CHECK

Check foot brake pedal operates normally.

OK or NG

OK >> GO TO 2.
NG >> 1. Check brake circuit.
2. After repairing, erase DTC and perform active test (BOOSTER SOL/V3) with CONSULT-III. Then perform self-diagnosis of ICC system again.

2. CHECK BOOSTER SOLENOID

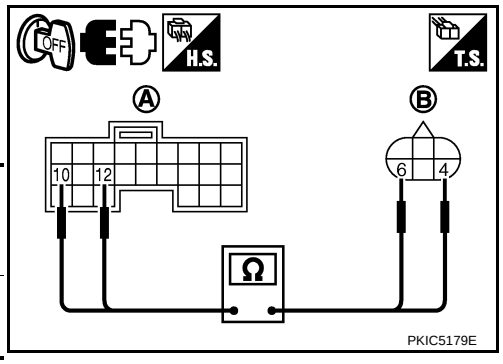
Check booster solenoid. Refer to ACS-63, "Booster Solenoid".

OK or NG

OK >> GO TO 3.
NG >> Booster solenoid malfunction
1. Replace brake booster.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

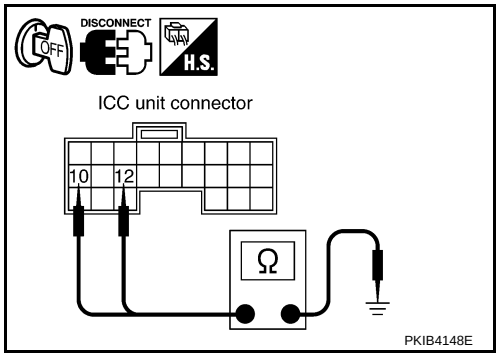
3. CHECK HARNESS BETWEEN ICC UNIT AND BRAKE BOOSTER

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake booster connector.
3. Check continuity between ICC unit harness connector (A) and brake booster harness connector (B).



A		B		Continuity
ICC unit connector	Terminal	Brake booster connector	Terminal	
M88	10	E54	4	Yes
	12		6	

4. Check continuity between ICC unit harness connector and ground.



ICC unit connector	Terminal	Ground	Continuity
M88	10		No
	12		

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Repair harness between brake booster and ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 74 LASER BEAM OFF CNTR

INFOID:0000000001328837

1. DIAGNOSTIC CHECK

1. Adjust laser beam aiming. Then erase DTC, and perform ICC system running test.
2. Perform self-diagnosis of ICC system.
3. Check if “DTC 74 LASER BEAM OFF CNTR” is indicated.

Is it indicated?

YES >> 1. Replace ICC sensor, and adjust laser beam aiming.

2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> INSPECTION END

DTC 90 STOP LAMP RLY FIX

INFOID:0000000001328838

1. CHECK CONNECTOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector, and connect it securely again.
3. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.
NO >> Poor connector connection
1. Check connector (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part).
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

With “Data Monitor” of “ICC”, check that “STOP LAMP SW” and “BRAKE SW” operate normally.

OK or NG

OK >> GO TO 12.
NG-1 >> “BRAKE SW” NG: GO TO 3.
NG-2 >> “STOP LAMP SW” NG: GO TO 9.

3. CHECK BRAKE SWITCH INSTALLATION AND ADJUSTMENT

Check brake switch for proper installation, and adjust the switch if necessary. Refer to BR-5, "Inspection and Adjustment".

OK or NG

OK >> GO TO 4.
NG >> After adjustment, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

4. CHECK ICC BRAKE SWITCH AND STOP LAMP SWITCH

Check ICC brake switch and stop lamp switch. Refer to ACS-64, "ICC Brake Switch and Stop Lamp Switch".

OK or NG

OK >> GO TO 5.
NG >> 1. Replace ICC brake switch.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

5. CHECK ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect ICC brake hold relay.
3. Check ICC brake hold relay. Refer to ACS-64, "ICC Brake Hold Relay".

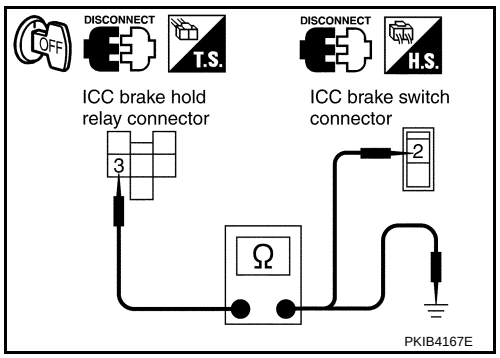
OK or NG

OK >> GO TO 6.
NG >> 1. Replace ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

6. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ICC BRAKE SWITCH

1. Disconnect ICC brake switch connector and ICC unit connector.

2. Check continuity between ICC brake hold relay harness connector and ICC brake switch harness connector.



ICC brake hold relay connector	Terminal	ICC brake switch connector	Terminal	Continuity
E14	3	E209	2	Yes

3. Check continuity between ICC brake hold relay harness connector and ground.

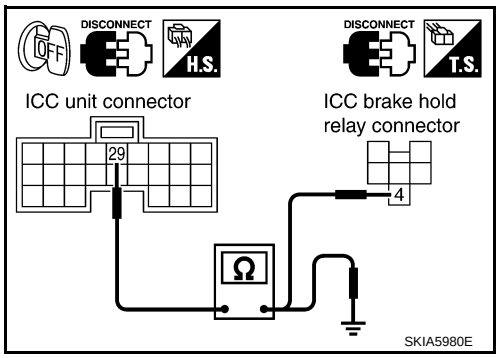
ICC brake hold relay connector	Terminal	Ground	Continuity
E14	3		No

OK or NG

OK >> GO TO 7.
NG >> 1. Repair harness between ICC brake hold relay and ICC brake switch.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

7. CHECK HARNESS BETWEEN ICC UNIT AND ICC BRAKE HOLD RELAY

1. Disconnect ECM connector.
2. Check continuity between ICC unit harness connector and ICC brake hold relay harness connector.



ICC unit connector	Terminal	ICC brake hold relay connector	Terminal	Continuity
M89	29	E14	4	Yes

3. Check continuity between ICC unit harness connector and ground.

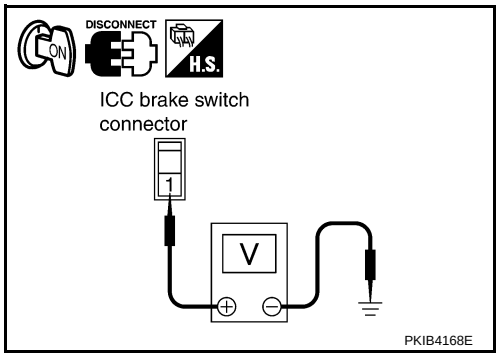
ICC unit connector	Terminal	Ground	Continuity
M89	29		No

OK or NG

OK >> GO TO 8.
NG >> 1. Repair harness between ICC unit and ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

8. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between ICC brake switch harness connector and ground.



ICC brake switch connector	Terminal		Voltage (Approx.)
	(+)	(–)	
E209	1	Ground	Battery voltage

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Repair or replace harness or fuse.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

9. CHECK STOP LAMP ILLUMINATION

1. Turn ignition switch OFF.
2. Disconnect ICC brake hold relay.
3. Check stop lamp circuit.

OK or NG

OK >> GO TO 10.
NG >> After repairing, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

10. CHECK ICC BRAKE HOLD RELAY CIRCUIT

1. Connect ICC brake hold relay connector.
2. Disconnect stop lamp switch connector.
3. When brake pedal is not depressed, make sure that stop lamp does not illuminate.

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> GO TO 11.

11. CHECK ICC BRAKE HOLD RELAY

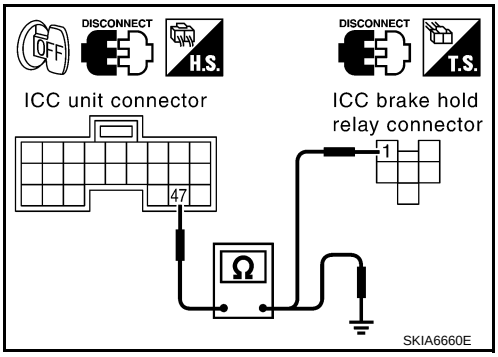
1. Disconnect ICC brake hold relay.
2. Check ICC brake hold relay. Refer to ACS-64, "ICC Brake Hold Relay".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Replace ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

12. CHECK HARNESS BETWEEN ICC UNIT AND ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and ICC brake hold relay.
3. Check continuity between ICC unit harness connector and ICC brake hold relay harness connector.



ICC unit connector	Terminal	ICC brake hold relay connector	Terminal	Continuity
M89	47	E14	1	Yes

4. Check continuity between ICC unit harness connector and ground.

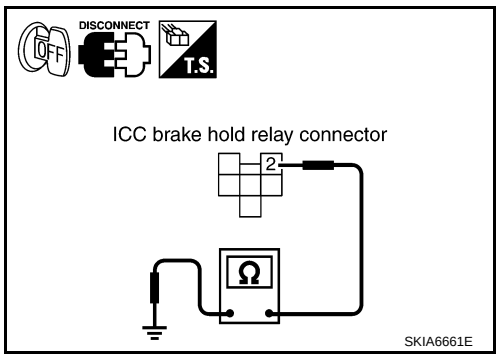
ICC unit connector	Terminal	Ground	Continuity
M89	47		No

OK or NG

OK >> GO TO 13.
NG >> 1. Repair harness between ICC unit and ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

13. CHECK ICC BRAKE HOLD RELAY GROUND CIRCUIT

Check continuity between ICC brake hold relay harness connector and ground.



ICC brake hold relay connector	Terminal	Ground	Continuity
E14	2		Yes

OK or NG

OK >> GO TO 14.
NG >> 1. Repair harness between ICC brake hold relay and ground.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

14. CHECK ICC BRAKE HOLD RELAY

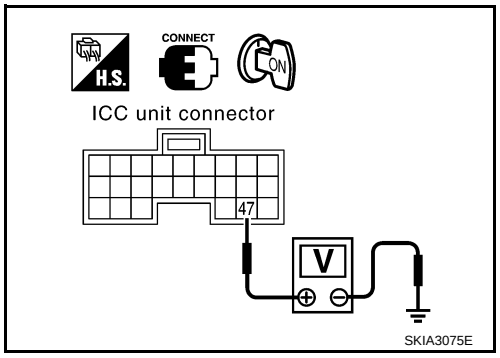
Check ICC brake hold relay. Refer to ACS-64, "ICC Brake Hold Relay".

OK or NG

OK >> GO TO 15.
NG >> 1. Replace ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

15. CHECK ICC UNIT STANDARD VOLTAGE

1. Connect ICC unit connector and stop lamp switch connector.
2. Perform “Active Test” (“STOP LAMP”: “STP LMP DRIVE ON”) with CONSULT-III, check voltage between ICC unit harness connector and ground.



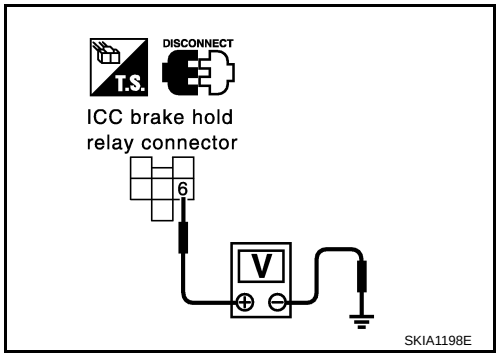
ICC unit connector	Terminal		Condition	Voltage (Approx.)
	(+)	(–)		
M89	47	Ground	During “Active Test”	12 V

OK or NG

OK >> GO TO 16.
NG >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

16. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

Check voltage between ICC brake hold relay harness connector and ground.



ICC brake hold relay connector	Terminal		Voltage (Approx.)
	(+)	(–)	
E14	6	Ground	Battery voltage

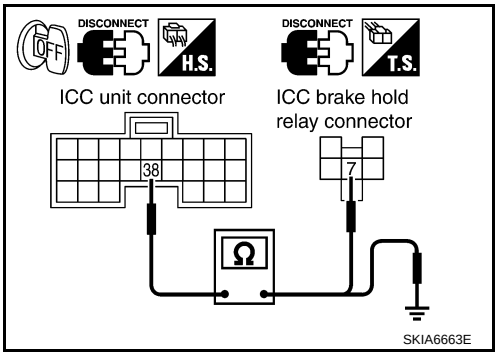
OK or NG

OK >> GO TO 17.
NG >> 1. Repair or replace harness or fuse.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

17. CHECK HARNESS BETWEEN ICC UNIT AND ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.

2. Disconnect ICC unit.
3. Check continuity between ICC unit harness connector and ICC brake hold relay harness connector.



ICC unit connector	Terminal	ICC brake hold relay connector	Terminal	Continuity
M89	38	E14	7	Yes

4. Check continuity between ICC unit harness connector and ground.

ICC unit connector	Terminal	Ground	Continuity
M89	38		No

OK or NG

OK >> GO TO 18.
NG >> 1. Repair harness between ICC unit and ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then, perform self-diagnosis of ICC system again.

18. CHECK ICC BRAKE HOLD RELAY

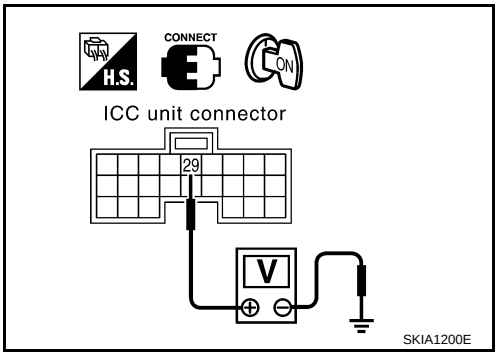
1. Connect ICC unit connector and ICC brake hold relay.
2. Disconnect stop lamp switch connector.
3. Perform “Active Test” (“STOP LAMP”) with CONSULT-III, and make sure that stop lamp is illuminated.

OK or NG

OK >> GO TO 19.
NG >> 1. Replace ICC brake hold relay.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

19. CHECK ICC UNIT STANDARD VOLTAGE

1. Connect stop lamp switch connector.
2. Perform “Active Test” (“STOP LAMP”: “STP LMP DRIVE ON”) with CONSULT-III, check voltage between ICC unit harness connector and ground.



ICC unit connector	Terminal		Condition	Voltage (Approx.)
	(+)	(–)		
M89	29	Ground	During “Active Test”	0 V

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Replace stop lamp switch.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 92 ECM CIRCUIT

INFOID:0000000001328839

1. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 20 CAN COMM CIRCUIT” other than “DTC 92 ECM CIRCUIT” is indicated in self-diagnosis item in the display.

Is it indicated?

YES >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ECM

1. Perform self-diagnosis of ECM.
2. Check if malfunction is indicated.

Is malfunction indicated?

YES >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 96 NP RANGE

INFOID:0000000001328840

1. CHECK CONNECTOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector, and connect them securely again.
3. Erase DTC and then perform ICC system running test. Then perform self-diagnosis of ICC system again.

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

2. CHECK NP RANGE SWITCH SIGNAL

With “Data Monitor” of “ICC”, check that “NP RANGE SW” operates normally.

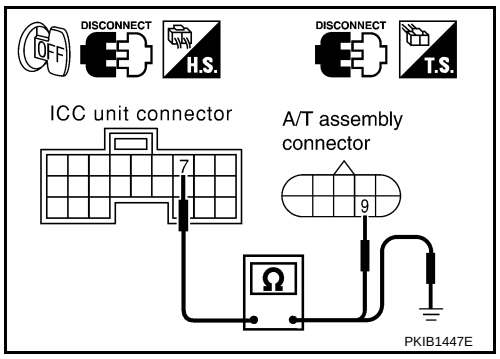
OK or NG

OK >> GO TO 5.

NG >> GO TO 3.

3. CHECK HARNESS BETWEEN ICC UNIT AND TCM

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and A/T assembly connector.
3. Check continuity between ICC unit harness connector and A/T assembly harness connector.



ICC unit connector	Terminal	A/T assembly connector	Terminal	Continuity
M88	7	F44	9	Yes

4. Check continuity between ICC unit harness connector and ground.

ICC unit connector	Terminal	Ground	Continuity
M88	7		No

OK or NG

OK >> GO TO 4.

NG >> 1. Repair harness between ICC unit and A/T assembly.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

4.CHECK TCM START SIGNAL CIRCUIT

Check TCM start signal. Refer to AT-99, "Diagnosis Procedure".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Repair or replace damaged parts.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

5.CHECK SHIFT POSITION SIGNAL

With TCM diagnosis, check that shift operates normally. Refer to AT-103, "Diagnosis Procedure".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Perform TCM self-diagnosis.
2. After repairing or replacing applicable item, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 97 AT CIRCUIT

INFOID:0000000001328841

1.CHECK AT CIRCUIT

With TCM diagnosis, check that shift operates normally. Refer to AT-103, "Diagnosis Procedure".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Perform TCM self-diagnosis.
2. After repairing or replacing applicable item, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 98 GEAR POSITION

INFOID:0000000001328842

1.PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 43 ABS/TCS/VDC CIRC” or “DTC 41 VHCL SPEED SE CIRC” other than “DTC 98 GEAR POSITION” is indicated in self-diagnosis item in the display.

Is any indicated?

YES >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> GO TO 2.

2.CHECK VEHICLE SPEED SIGNAL

With “Data Monitor” of “ICC”, check that “VHCL SPEED SE” is normal.

OK or NG

OK >> GO TO 3.

NG >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3.CHECK SHIFT GEAR POSITION

Check that gear positions are correct in A/T.

OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. CHECK TCM GEAR POSITION SIGNAL

With “Data Monitor” of “TCM”, check that gear positions are correct.

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Perform TCM self-diagnosis.
2. After repairing or replacing applicable item, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

5. CHECK TCM TURBINE ROTATION

With TCM diagnosis, check that turbine rpm is normal. Refer to AT-106, "Diagnosis Procedure".

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Perform TCM self-diagnosis.
2. After repairing or replacing applicable item, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 102 RADAR STAIN

INFOID:0000000001328843

1. VISUAL INSPECTION 1

Check that there is no contamination and foreign material on ICC sensor body window.

OK or NG

OK >> GO TO 2.
NG >> 1. If any, remove them.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

2. VISUAL INSPECTION 2

Check ICC sensor body window for cracks.

OK or NG

OK >> GO TO 3.
NG >> 1. Replace ICC sensor, and adjust laser beam aiming.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3. ASKING COMPLAINTS

1. Ask if there is any trace of contamination or foreign material on ICC sensor.
2. Ask if vehicle was driven in snow or ICC sensor was frosted.
3. Ask if ICC sensor was fogged temporarily. (Front window glass may have also tended to be fogged.)

Is there any symptom?

YES >> Explain difference in displays between contamination detection result and current indication to customer, and tell them “This is not malfunction”.

NO >> 1. Replace ICC sensor, and adjust laser beam aiming.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 103 LASER SENSOR FAIL

INFOID:0000000001328844

1. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.

2. Check if “DTC 11 CONTROL UNIT” or “DTC 20 CAN COMM CIRCUIT” item other then “DTC 103 LASER SENSOR FAIL” is indicated in self-diagnosis item in the display.

Is any indicated?

YES >> Go to applicable item inspection. Refer to ACS-36, "DTC 11 CONTROL UNIT", and ACS-36, "DTC 20 CAN COMM CIRCUIT".

NO >> 1. Replace ICC sensor, and adjust laser beam aiming.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 104 LASER AIMING INCMP

INFOID:0000000001328845

1.CHECK DIAGNOSIS

1. Adjust laser beam aiming. Erase DTC and perform ICC system running test.
2. After that, perform self-diagnosis of ICC system.
3. Check if “DTC 104 LASER AIMING INCMP” is indicated.

Is it indicated?

YES >> 1. Replace ICC sensor, and adjust laser beam aiming.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> INSPECTION END

DTC 107 LASER COMM FAIL

INFOID:0000000001328846

1.PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 11 CONTROL UNIT” or “DTC 20 CAN COMM CIRCUIT” item other than “DTC 107 LASER COMM FAIL” is indicated in the self-diagnosis item in the display.

Is any indicated?

YES >> Go to applicable item inspection. Refer to ACS-36, "DTC 11 CONTROL UNIT", and ACS-36, "DTC 20 CAN COMM CIRCUIT".

NO >> 1. Replace ICC sensor, and adjust laser beam aiming.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

DTC 109 LASER HIGH TEMP

INFOID:0000000001328847

1.CHECK SYMPTOM

Check if cooling system malfunctions.

Does it malfunction?

YES >> 1. Repair cooling system.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NO >> 1. Replace ICC sensor, and adjust laser beam aiming.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

TROUBLE DIAGNOSIS FOR SYMPTOMS

Symptom Chart

INFOID:0000000001328848

Symptoms		Reference page
Operation	MAIN switch does not switch ON.	Symptom 1 ACS-55
	MAIN switch does not switch OFF.	Symptom 1 ACS-55
	Cruise does not function for setting (powering functions).	Symptom 2 ACS-56
	CANCEL switch does not function.	Symptom 3 ACS-56
	Resume does not function.	Symptom 3 ACS-56
	Set speed does not increase.	Symptom 3 ACS-56
	Set distance to the vehicle ahead cannot be changed.	Symptom 3 ACS-56
	ICC is not cancelled when the A/T selector lever is in other than “D” and “M” position.	Symptom 4 ACS-57
Display/Chime	ICC system display does not appear.	Check combination meter. Refer to DI-15, "Trouble Diagnosis".
	Chime does not function.	Symptom 5 ACS-57
Control	Driving force is hunting.	Symptom 6 ACS-58
Function to detect the vehicle ahead	System frequently cannot detect the vehicle ahead.	Symptom 7 ACS-58
	Distance to detect the vehicle ahead is short.	Symptom 7 ACS-58
	System misidentifies a vehicle even though there is no vehicle ahead.	• Refer to ACS-14. • Refer to ACS-11, "ICC System Running Test".
	System misidentifies a vehicle in the next lane.	• Refer to ACS-14. • Refer to ACS-11, "ICC System Running Test".
	System does not detect a vehicle at all.	Symptom 8 ACS-59

Symptom 1 MAIN Switch Does Not Turn ON*1, MAIN Switch Does Not Turn OFF*2

INFOID:0000000001328849

NOTE:
- *1: The ICC system display in the combination meter does not illuminate.
- *2: The ICC system display in the combination meter remains powered.

1.CHECK MAIN SWITCH

With “Data Monitor” of “ICC”, check that MAIN switch operates normally.

OK or NG

OK >> GO TO 2.
NG >> GO TO 3.

2.CHECK CONNECTOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector.
3. Check connector housing for disconnected, loose, bent, and collapsed terminals.

OK or NG

OK >> GO TO 3.
NG >> Poor connector connection
1. Repair ICC unit connector.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 20 CAN COMM CIRCUIT” is indicated.

Is it indicated?

YES >> Refer to ACS-36, "DTC 20 CAN COMM CIRCUIT".
NO >> Refer to ACS-40, "DTC 46 OPERATION SW CIRC".

Symptom 2 ICC System Cannot Be Set (MAIN Switch Turns ON/OFF)

INFOID:0000000001328850

The ICC cannot be set in the following cases.
- When the vehicle speed is not in range of approx. 40 km/h (25 MPH) to 144 km/h (90 MPH).
- When the A/T selector lever is in gears other than “D” and “M” position.
- While the brake is in operation.

1. CHECK CAUSE OF AUTOMATIC CANCELLATION

With “CAUSE OF AUTO-CANCEL” in “Work Support”, check if any cause of cancellation exists.

OK or NG

OK >> Cancel with appropriate cause, and go to specified diagnosis.
- “OPE SW VOLT CIRC”: Refer to ACS-40, "DTC 46 OPERATION SW CIRC".
- “VHCL SPD UNMATCH”: Refer to ACS-37, "DTC 41 VHCL SPEED SE CIRC".
- “IGN LOW VOLT”: Refer to ACS-37, "DTC 31 POWER SUPPLY CIR, DTC 34 POWER SUPPLY CIR 2".

NG >> GO TO 2.

2. PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

Perform self-diagnosis of ICC system to check for malfunctioning items.

OK or NG

OK >> GO TO 3.
NG >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

3. CHECK SWITCHES AND VEHICLE SPEED SIGNAL

With “Data Monitor” of “ICC”, check that switches and vehicle speed signal operate normally.
- VHCL SPEED SE
- D RANGE SW
- BRAKE SW
- SET/COAST SW

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and Perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG-1 >> “VHCL SPEED SE” NG: Refer to ACS-37, "DTC 41 VHCL SPEED SE CIRC".
NG-2 >> “D RANGE SW” NG: Refer to ACS-57, "Symptom 4 ICC System Is Not Cancelled When the A/T Selector Lever Is in Other Than "D" and "M" Position".
NG-3 >> “BRAKE SW” NG: Refer to ACS-38, "DTC 45 BRAKE SW/STOP L SW".
NG-4 >> “SET/COAST SW” NG: Refer to ACS-40, "DTC 46 OPERATION SW CIRC".

Symptom 3 ICC System Cannot Be Operated by CANCEL Switch, RESUME/ACCEL-ERATE Switch or DISTANCE Switch

INFOID:0000000001328851

RESUME does not function in the following cases.

- When MAIN switch is turned off once.
- When the vehicle speed is less than 40 km/h (25 MPH).

1.CHECK SWITCHES

With “Data Monitor” of “ICC”, check that switches operate normally.
- “RESUME/ACC SW”
- “CANCEL SW”
- “DISTANCE ADJ”

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 20 CAN COMM CIRCUIT” is indicated.

Is it indicated?

YES >> Refer to ACS-36, "DTC 20 CAN COMM CIRCUIT".
NO >> Refer to ACS-40, "DTC 46 OPERATION SW CIRC".

Symptom 4 ICC System Is Not Cancelled When the A/T Selector Lever Is in Other Than "D" and "M" Position

INFOID:0000000001328852

1.CHECK D RANGE SWITCH

With “Data Monitor” of “ICC”, check that “D RANGE SW” operates normally.

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 20 CAN COMM CIRCUIT” is indicated.

Is it indicated?

YES >> Refer to ACS-36, "DTC 20 CAN COMM CIRCUIT".
NO >> GO TO 3.

3.CHECK D RANGE SWITCH

With TCM “Data Monitor” of “ICC”, check that “D” position switch operates normally.

OK or NG

OK >> 1. Replace ICC unit.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

NG >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Symptom 5 Chime Does Not Sound

INFOID:0000000001328853

The chime may not sound occasionally in the following cases even if the distance from the vehicle ahead is short:
- When the speed difference from that of the vehicle ahead is small (both vehicles driving at similar speed).
- When the vehicle ahead drives at faster speed (the actual distance is increasing).
- When depressing the accelerator.
- Chime does not sound when the vehicle is not driving.

- Chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the ACS-58, "Symptom 7 ICC System Frequently Cannot Detect the Vehicle Ahead/ Detection Zone Is Short".

1.CHECK ICC WARNING CHIME

With “Active Test” of “ICC”, check that ICC warning chime operates normally.

OK or NG

OK >> Determine preceding vehicle detection status when malfunction occurred. If chime should have sounded: after replacing ICC unit. Perform ICC system running test, and then perform self-diagnosis of ICC system again.
NG >> GO TO 2.

2.PERFORM SELF-DIAGNOSIS OF ICC SYSTEM

1. Perform self-diagnosis of ICC system.
2. Check if “DTC 20 CAN COMM CIRCUIT” is indicated.

Is it indicated?

YES >> Refer to ACS-36, "DTC 20 CAN COMM CIRCUIT".
NO >> GO TO 3.

3.PERFORM SELF-DIAGNOSIS OF UNIFIED METER AND A/C AMP.

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-27, "CONSULT-III Function (METER/M&A)".

OK or NG

OK >> 1. Replace combination meter.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
NG >> 1. Repair or replace applicable item.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Symptom 6 Driving Force Is Hunting

INFOID:0000000001328854

1.CHECK SELF-DIAGNOSIS OF ECM

Perform self-diagnosis of ECM.

OK or NG

OK >> Refer to ACS-58, "Symptom 7 ICC System Frequently Cannot Detect the Vehicle Ahead/ Detection Zone Is Short".
NG >> 1. Repair or replace applicable parts.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Symptom 7 ICC System Frequently Cannot Detect the Vehicle Ahead/ Detection Zone Is Short

INFOID:0000000001328855

The detection function may become unstable in the following cases.
- When the reflector of the vehicle ahead is deficient/ not clean enough to reflect the radar.
- When driving a road with extremely sharp corners.
- When the radar cannot detect the reflector of the vehicle ahead as the vehicle ahead is passing a hill or passing the peak.

1.VISUAL CHECK

Check ICC sensor body window for contamination and foreign materials.

OK or NG

OK >> If any contamination or foreign materials are found, remove them. Then perform ICC system running test.
NG >> GO TO 2.

2.CHECK FUNCTION

After adjusting ICC sensor beam aiming, perform ICC system running test. Check that preceding vehicle detection performance has been improved.

OK or NG

OK >> INSPECTION END
NG >> 1. Replace ICC sensor, and perform laser beam aiming adjustment.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

Symptom 8 the System Does Not Detect the Vehicle Ahead at All

INFOID:0000000001328856

1.VISUAL CHECK 1

With ignition switch turned ON (engine not started), check that all indicator lamps in ICC system display are continuously lit. (Check for a missing segment in preceding vehicle detection display.)

OK or NG

OK >> GO TO 2.
NG >> Check for combination meter. Refer to DI-15, "Trouble Diagnosis".

2. VISUAL CHECK 2

Check ICC sensor body window for contamination and foreign materials.

OK or NG

OK >> If any contamination or foreign materials are found, remove them. Perform ICC system running test.
NG >> GO TO 3.

3.VISUAL CHECK 3

Check ICC sensor body window for cracks and scratches.

OK or NG

OK >> GO TO 4.
NG >> 1. Replace ICC sensor, and perform laser beam aiming adjustment.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

4.ADJUST ICC SENSOR

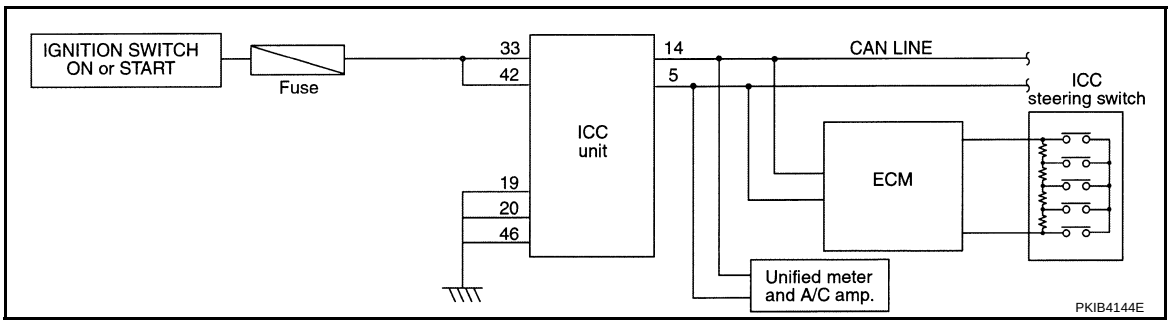
After adjusting ICC sensor beam aiming, perform ICC system running test. Check that preceding vehicle detection performance has been improved.

OK or NG

OK >> INSPECTION END
NG >> 1. Replace ICC sensor, and perform laser beam aiming adjustment.
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

SELF-DIAGNOSIS BY ICC SYSTEM DISPLAY WILL NOT RUN

INFOID:0000000001544638



Possible Irregular Condition

Open or short lines	Symptoms	Malfunction causes
ICC unit power supply malfunction	No voltage supply from ignition switch	Fuse blown
		Harness open
		Harness shorted
	Ground cable not connected	Harness open
		Harness shorted
ICC steering switch malfunction	No signal transmitted	Harness open
		Harness shorted
		Spiral cable open
		Spiral cable shorted
		Switch or ECM malfunction
CAN communication system malfunction	Signal not transmitted	Harness open
		Harness shorted
		CAN communication outside the standard.
Combination meter system malfunction	Indication not possible	Indicator display malfunction
		ICC system display segments disappear.
ICC unit malfunction		ICC unit internal malfunction.

1.CHECK FUSES

Check that any of the fuses is blown.

Unit	Power source	Fuse No.
ICC unit	Ignition switch (ON)	12
	Battery	35

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK ICC SYSTEM DISPLAY

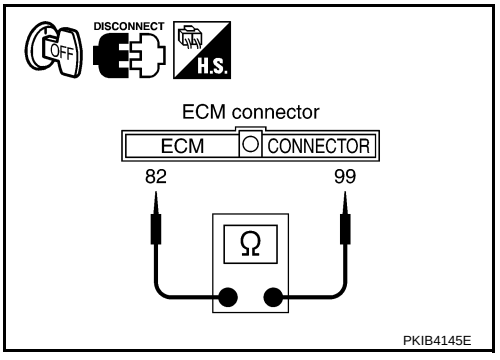
1. Turn ignition switch ON.
2. Check if all displays illuminate.

Do all displays illuminate?

YES >> GO TO 3.
NO >> GO TO 6.

3.CHECK HARNESS BETWEEN ECM AND ICC STEERING SWITCH

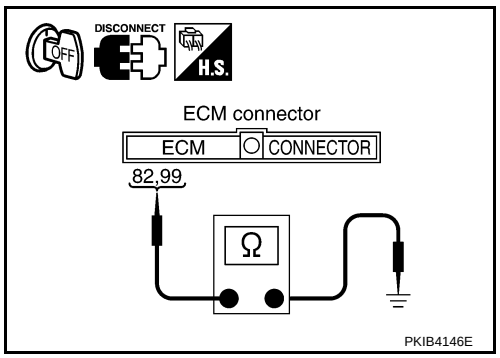
1. Turn ignition switch OFF.
2. Disconnect ECM connector, and check terminals for bend and looseness.
3. Check continuity between ECM harness connector terminals.



ECM connector	Terminal		Condition	Resistance (Approx.)
M90	82	99	When MAIN switch pressed	0 Ω
			When MAIN switch released	5.5 kΩ

4. Check continuity between ECM harness connector and ground.

ECM connector	Terminal		Continuity
M90	82	Ground	No
	99		



OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. CHECK ICC STEERING SWITCH

Check ICC steering switch. Refer to ACS-63, "ICC Steering Switch".

OK or NG

OK >> 1. Repair or replace harness between ECM and ICC steering switch.
2. Perform self-diagnosis mode for ICC system.
NG >> 1. Replace ICC steering switch.
2. Perform self-diagnosis mode for ICC system.

5. CHECK SELF-DIAGNOSIS

1. Connect ECM connector.
2. Turn ignition switch ON.
3. Perform self-diagnosis mode for ICC system.

OK or NG

OK >> INSPECTION END
NG >> GO TO 6.

6. CHECK CONNECTOR FOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector, and check terminals for bend and looseness.
3. Connect ICC unit connector.
4. Turn ignition switch ON.
5. Check if all displays illuminate.

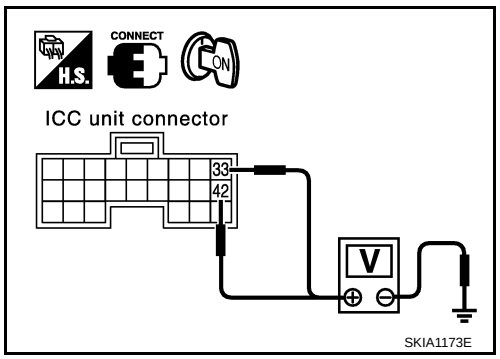
Do all displays illuminate?

YES >> Perform self-diagnosis again.
NO >> GO TO 7.

7. CHECK POWER SUPPLY CIRCUIT FOR ICC UNIT

Check voltage between ICC unit harness connector terminals.

ICC unit connector	Terminal		Voltage (Approx.)
	(+)	(–)	
M89	33	Ground	Battery voltage
	42		

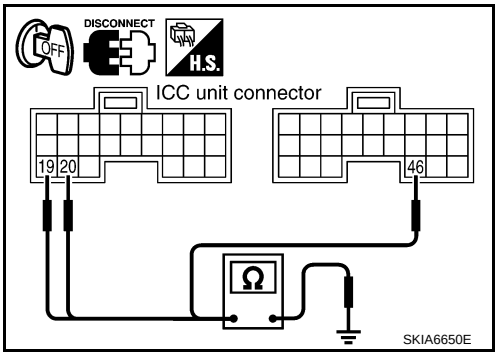


OK or NG

OK >> GO TO 8.
NG >> Repair ICC unit power supply harness.

8. CHECK GROUND CIRCUIT FOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector.
3. Check continuity between ICC unit harness connector and ground.



ICC unit connector	Terminal		Continuity
M88	19	Ground	Yes
	20		
M89	46		

OK or NG

OK >> GO TO 9.
NG >> Repair ICC unit ground harness.

9. CHECK DISPLAYS

1. Connect ICC unit connector.
2. Turn ignition switch ON.
3. Check if all displays illuminate.

Do all displays illuminate?

YES >> Perform self-diagnosis again.
NO >> GO TO 10.

10. CHECK CAN COMMUNICATION

Perform self-diagnosis with CONSULT-III, and check CAN communication system for malfunction.

OK or NG

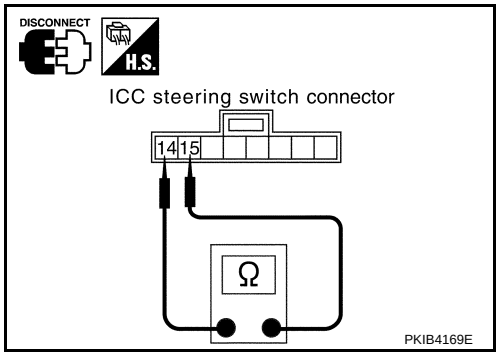
OK >> Replace combination meter.
NG >> CAN communication inspection. Refer to ACS-36, "DTC 20 CAN COMM CIRCUIT".

ELECTRICAL COMPONENT INSPECTION

ICC Steering Switch

INFOID:0000000001328857

1. Disconnect ICC steering switch.
2. Check resistance between ICC steering switch connector terminals by pressing each switch.

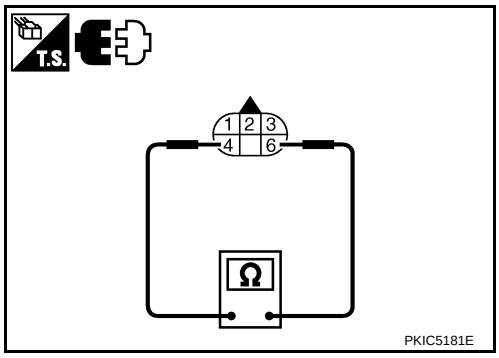


Terminals		Switch	Condition	Resistance [kΩ]
14	15	MAIN	Pressed	Approx. 0
			Released	Approx. 5.5
		CANCEL	Pressed	Approx. 0.3
			Released	Approx. 5.5
		DISTANCE	Pressed	Approx. 0.7
			Released	Approx. 5.5
		SET/COAST	Pressed	Approx. 1.4
			Released	Approx. 5.5
		RESUME/ACCELERATE	Pressed	Approx. 2.6
			Released	Approx. 5.5

Booster Solenoid

INFOID:0000000001328858

Disconnect booster solenoid/release switch connector, and measure resistance between terminals 4 and 6.

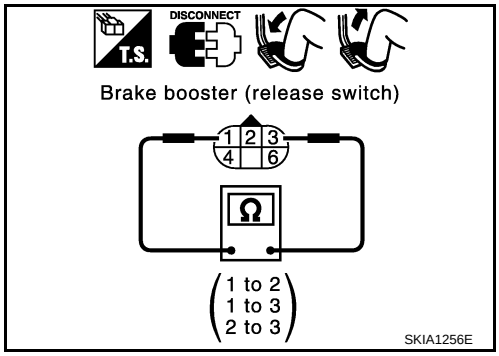


Terminals		Resistance [Ω]
4	6	Approx. 1.4

Release Switch

INFOID:0000000001328859

Disconnect booster solenoid/release switch connector and check resistance between the terminals.



Condition	1 - 3	1 - 2	2 - 3
Release the brake pedal.	Continuity should exist.	Continuity should not exist.	Continuity should not exist.
Depress the brake pedal.	Continuity should not exist. (Note)	Continuity should exist. (Note)	Continuity should not exist.

NOTE:

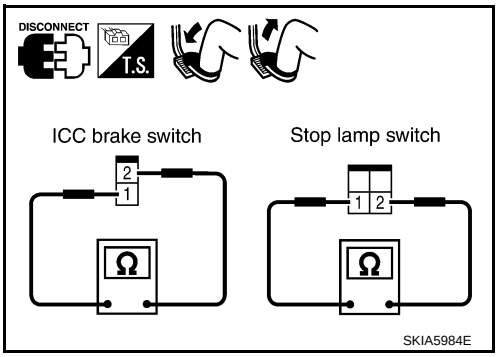
If pedal is depressed insufficiently, resistance value may remain unchanged.

ICC Brake Switch and Stop Lamp Switch

INFOID:0000000001328860

Condition	Continuity	
	ICC brake switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

Check each switch after adjusting brake pedal, refer to BR-5.

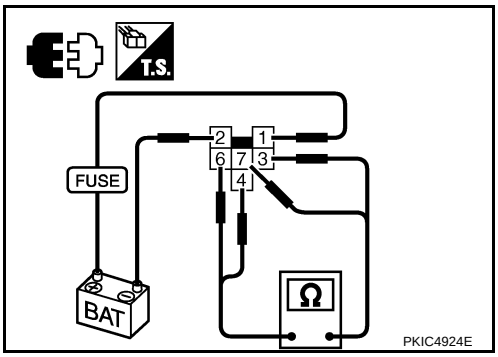


ICC Brake Hold Relay

INFOID:0000000001328861

Disconnect ICC brake hold relay, and check continuity between terminals.

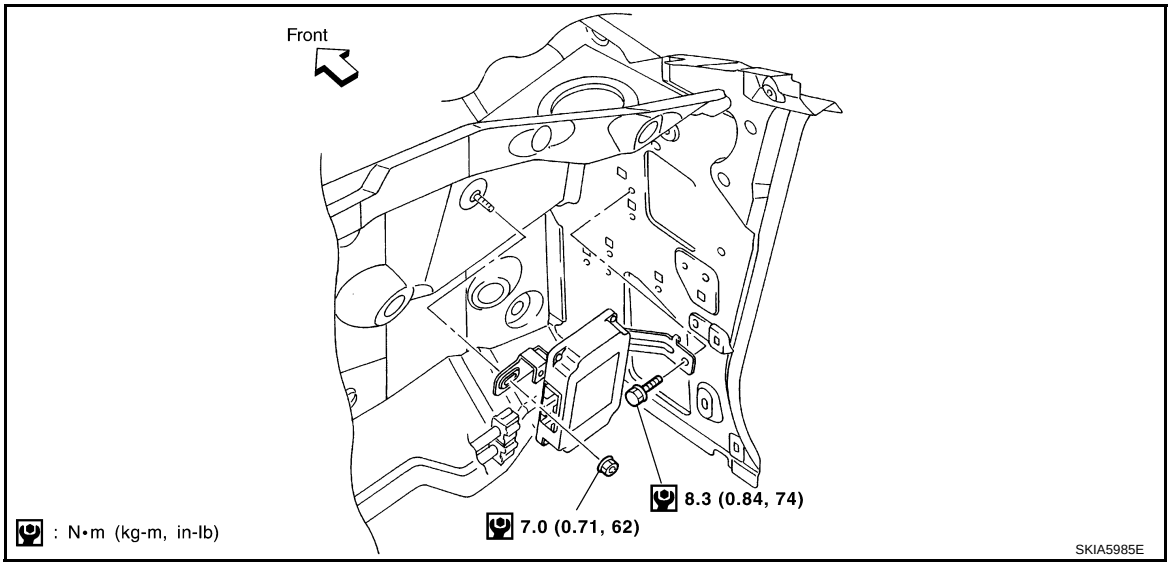
Terminals		Condition	Continuity
3	4	Applying battery voltage to between terminals 1 and 2.	No
6	7		Yes
3	4	No battery voltage	Yes
6	7		No



REMOVAL AND INSTALLATION

ICC Unit

INFOID:0000000001328862



REMOVAL

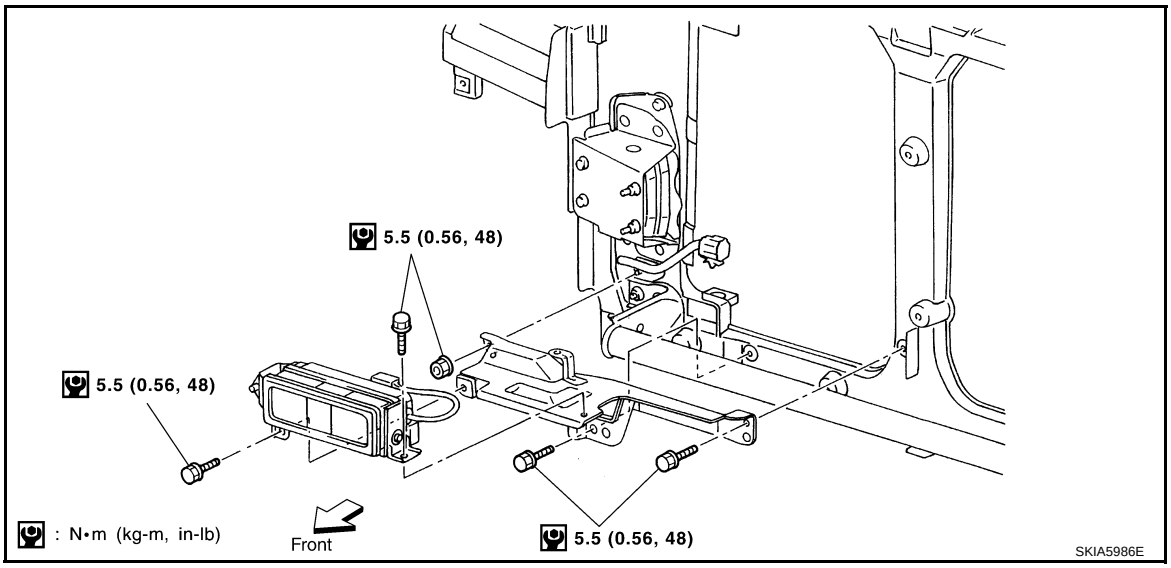
1. Remove the instrument passenger lower panel. Refer to IP-11, "Removal and Installation".
2. Remove the ECM.
3. Disconnect ICC unit connector.
4. Remove a mounting bolt and a nut from ICC unit.

INSTALLATION

Installation is the reverse order of removal.

ICC Sensor

INFOID:0000000001328863



REMOVAL

1. Remove the front bumper. Refer to EI-15, "Removal and Installation".
2. Disconnect ICC sensor connector.
3. Remove mounting bolts from ICC sensor.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:
Adjust the laser beam aiming every time the ICC sensor is removed or installed.

ICC Steering Switch

INFOID:0000000001328864

Refer to PS-12, "Removal and Installation".