

MWI

SECTION

METER, WARNING LAMP & INDICATOR

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METER SYSTEM

< SYSTEM DESCRIPTION >

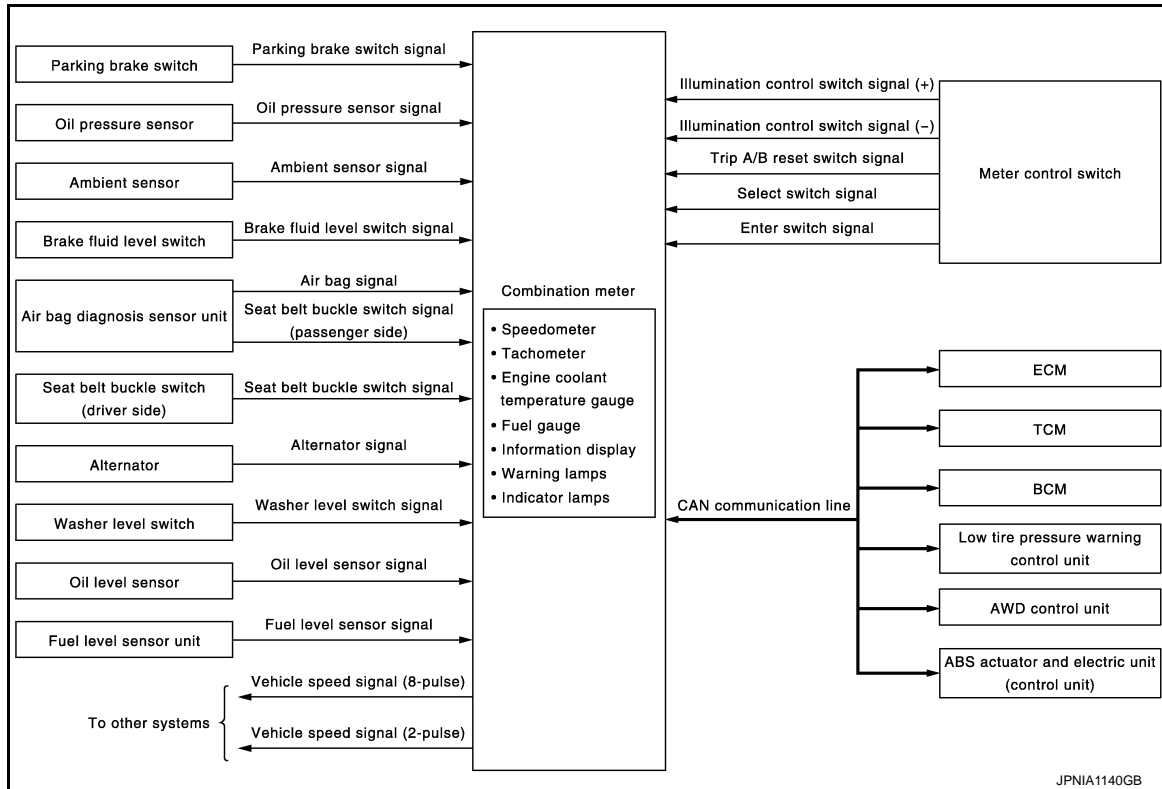
SYSTEM DESCRIPTION

METER SYSTEM

METER SYSTEM

METER SYSTEM : System Diagram

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METER SYSTEM : System Description

INFOID:000000009189291

COMBINATION METER

- The combination meter receives the signals that are required to control the operation of each meter gauge, indicator lamp/warning lamp, and information display from each unit, switch, and sensor.
- The combination meter is equipped with the drive computer function. Using the signal obtained from each unit, switch, and sensor, the combination meter displays warnings and information to the information display.
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to [WCS-3. "WARNING CHIME SYSTEM : System Description"](#) for details.
- The combination meter integrates the meter circuit check function, the dot matrix check function that checks the information display operation, and the segment check function that checks the shift position indicator operation.

METER CONTROL FUNCTION LIST

System		Description	Signal source
Meter gauges	Speedometer	Receives the vehicle speed signal, and indicates the vehicle speed.	ABS actuator and electric unit (control unit)
	Tachometer	Receives the engine speed signal, and indicates the engine speed.	ECM
	Fuel gauge	Receives the fuel level sensor signal, and indicates the remaining fuel level.	Fuel level sensor unit
	Engine coolant temperature gauge	Receives the engine coolant temperature signal, and indicates the engine coolant temperature.	ECM

METER SYSTEM

< SYSTEM DESCRIPTION >

System		Description	Signal source
Shift position indicator	Shift position indicator	Receives the shift position signal, and displays the shift position.	TCM
Oil pressure warning lamp	Oil pressure warning lamp	Receives the oil pressure sensor signal, and illuminates the lamp.	Oil pressure sensor
Up-shift indicator	Up-shift indicator	Receives the engine speed signal and shift position signal (manual mode status), and illuminates/turns off/blinks the indicator.	ECM
			TCM
Master warning lamp	Master warning lamp	Illuminates the lamp according to warning output on information display.	—
Information display	Instantaneous fuel consumption display	Calculates the instantaneous fuel consumption based on received vehicle speed signal and fuel consumption monitor signal, and displays the result.	ECM
	Vehicle speed display	Based on the received vehicle speed signal, displays the vehicle speed.	ABS actuator and electric unit (control unit)
	CRUISE control system status display	Based on the received ASCD status signal, displays the CRUISE control system setting status.	ECM

METER SYSTEM

< SYSTEM DESCRIPTION >

System		Description	Signal source	
Information display	Average fuel consumption display	Based on the received vehicle speed signal and fuel consumption monitor signal, calculates the average fuel consumption from the previous reset to the next reset, and displays the result.	ECM	A
			ABS actuator and electric unit (control unit)	B
	Average vehicle speed display	Calculates average vehicle speed in a reset-to-reset interval based on received vehicle speed signal and displays it.	ABS actuator and electric unit (control unit)	C
	Travel time display	Displays the accumulated key switch ON time from a previous reset to the next reset.	—	
	Travel distance display	Calculates accumulated travel distance in a reset-to-reset interval based on received vehicle speed signal and displays it.	ABS actuator and electric unit (control unit)	D
	Possible driving distance display	Based on the received fuel consumption monitor signal, vehicle speed signal, and fuel level sensor signal, calculates the possible driving distance, and displays the result.	ECM	E
			ABS actuator and electric unit (control unit)	F
			Fuel level sensor unit	
	Ambient air temperature display	Based on the received ambient sensor signal, corrects the ambient air temperature value, and displays the result.	Ambient sensor	G
	Illumination control display	Based on the received illumination control switch signal, displays the illumination status.	Meter control switch	
	Travel time interruption display	Displays a warning of duration after IGN ON. (If enabled)	—	H
	Low ambient air temperature display	Based on the ambient sensor signal, displays a warning when the ambient air temperature becomes 3 °C (37 °F) or less. (If enabled)	Ambient sensor	I
	Engine oil maintenance display	The distance for engine oil replacement can be set.	—	J
	Engine oil maintenance warning display	Displays a warning when the arbitrarily set engine oil replacement distance is reached.	—	
	Engine oil level normal display	Based on the received oil level sensor signal, displays that the engine oil level is at a normal value.	Oil level sensor	K
	Engine oil level display	Based on the received oil level sensor signal, displays the engine oil level.	Oil level sensor	
	Engine oil level warning display	Based on the received oil level sensor signal, displays a warning on engine oil level.	Oil level sensor	L
	Transmission oil maintenance display	The distance for transmission oil replacement can be set.	—	M
	Transmission oil maintenance warning display	Displays a warning when the arbitrarily set transmission oil replacement distance is reached.	—	
	Oil filter maintenance display	The distance for oil filter replacement can be set.	—	MWI
	Oil filter maintenance warning display	Displays a warning when the arbitrarily set oil filter replacement distance is reached.	—	
	Tire maintenance display	The distance for tire replacement can be set.	—	O
	Tire maintenance warning display	Displays a warning when the arbitrarily set tire replacement distance is reached.	—	
	Other maintenance display	The replacement distance for the arbitrarily set parts can be set.	—	P
	Other maintenance warning display	Displays a warning when the arbitrarily set parts replacement distance is reached.	—	

METER SYSTEM

< SYSTEM DESCRIPTION >

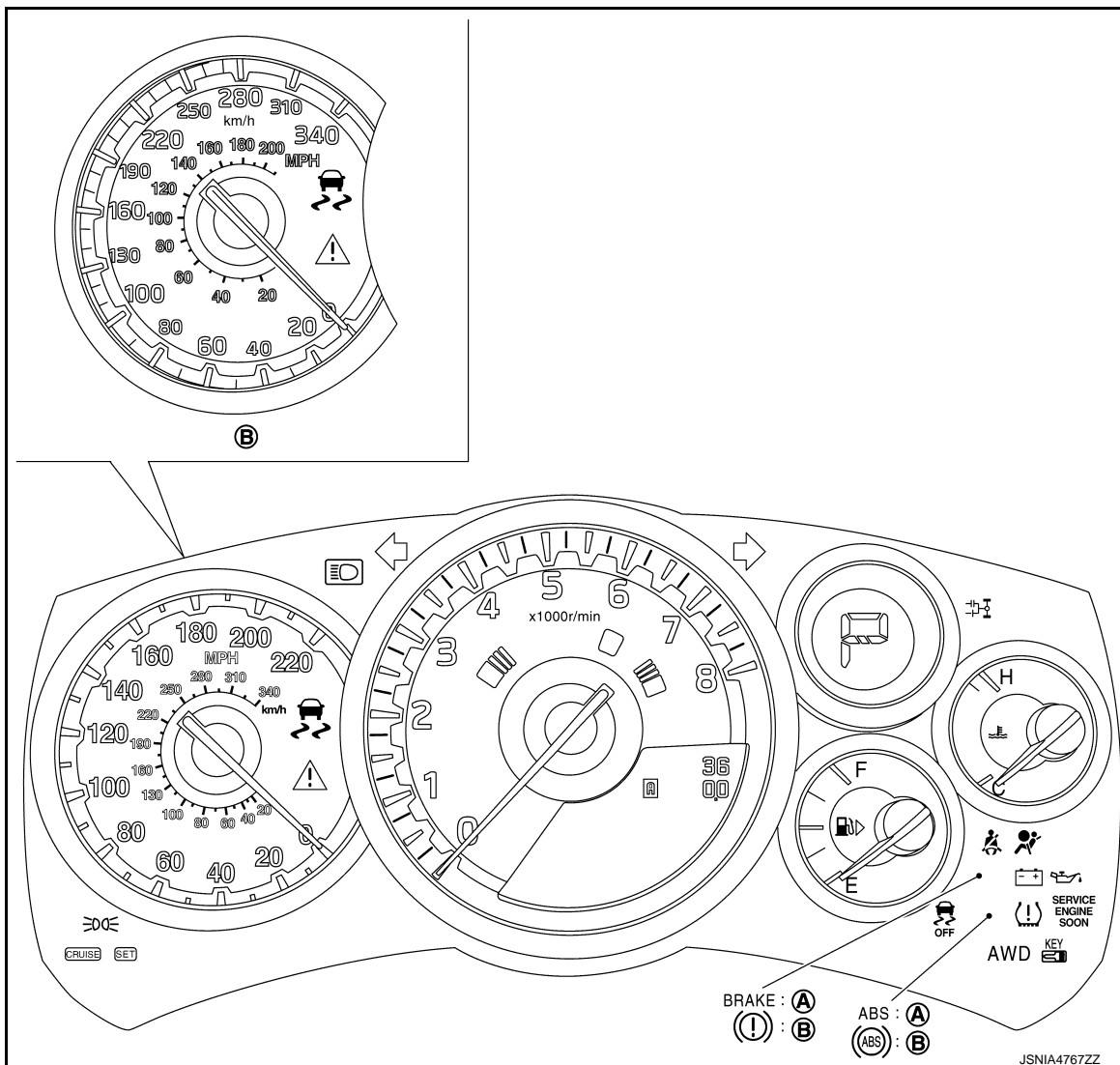
System		Description	Signal source
Information display	Door open warning display	Based on the received door switch signal, displays a warning that a door is ajar.	BCM
	Trunk open warning display	Based on the received trunk switch signal, displays a warning that the trunk is ajar.	BCM
	Parking brake release warning display	Based on the received parking brake switch signal and vehicle speed signal, displays a warning that the parking brake is not released.	Parking brake switch ABS actuator and electric unit (control unit)
	Low fuel warning display	Receives the fuel level sensor signal, and displays a warning if the fuel level decreases to approximately 13.5 ℓ (3-5/8 US gal, 3 Imp gal) or less [1.0 ℓ (1/4 US gal, 1/4 Imp gal) fuel residues included].	Fuel level sensor unit
	Low washer fluid warning display	Based on the received washer level switch signal, displays a warning for washer level.	Washer level switch
	Engine oil level sensor abnormality warning display	Based on the received oil level sensor signal, displays the engine oil level sensor malfunction warning.	Oil level sensor
	Shift lever position warning display	Based on the received shift lever position warning display signal, displays the shift lever position warning.	TCM
	Shift “ P ” warning display	Based on the received shift lever position check display signal, issues a warning to change the shift position to P range.	TCM
	Transmission system check display	Based on the received transmission system check display signal, displays that the transmission system check is in progress.	TCM
	Run-flat tire warning display	Based on the received run-flat tire warning display signal, displays a warning that the tire is punctured.	Low tire pressure warning control unit
	Transmission clutch high temperature warning display	Based on the received transmission clutch high temperature warning display signal, displays a warning that the transmission clutch temperature is high.	TCM
	Transmission oil high temperature warning display	Based on the received transmission oil high temperature warning display signal, displays a warning that the transmission oil temperature is high.	TCM
	Low tire pressure warning display	Based on the received low tire pressure warning display signal, displays a warning that the tire internal pressure is low.	Low tire pressure warning control unit
	AWD clutch high temperature warning display	Based on the received AWD clutch high temperature warning display signal, displays a warning that the AWD clutch temperature is high.	AWD control unit
	Front/rear tire size discrepancy warning display	Based on the received front/rear tire size discrepancy warning display signal, displays a warning that there is a difference between front and rear tire speed.	AWD control unit
	Transmission system warning display	Based on the received transmission system warning display signal, displays a warning that a malfunction is present in the transmission system.	TCM
	Tire pressure monitoring system warning display	Based on the received tire pressure monitoring system warning display signal, displays a warning that an abnormality is present in the tire pressure warning system.	Low tire pressure warning control unit
	AWD system warning display	Based on the received AWD system warning display signal, displays a warning that a malfunction is present in the AWD system.	AWD control unit

METER SYSTEM

< SYSTEM DESCRIPTION >

System	Description	Signal source
Anti-lock braking system (ABS) warning display	Based on the received ABS warning display signal, displays a warning that a malfunction has occurred to ABS.	ABS actuator and electric unit (control unit)
Vehicle dynamic control (VDC) system warning display	Based on the received VDC warning display signal, displays a warning that a malfunction is present in VDC.	ABS actuator and electric unit (control unit)
Engine system warning display	Based on the received engine status signal, displays a warning that a malfunction is present in the engine system.	ECM
CRUISE control system warning display	Based on the received ASCD status signal, detects the CRUISE system malfunction, and displays a warning that an inspection is necessary.	ECM
Engine oil low pressure warning display	Based on the received oil pressure sensor signal, displays a warning that the engine oil pressure is low.	Oil pressure sensor
Low brake fluid warning display	Based on the received brake fluid level switch signal, displays a warning that the brake fluid is decreased.	Brake fluid level switch

ARRANGEMENT OF COMBINATION METER



A. For U.S.A.

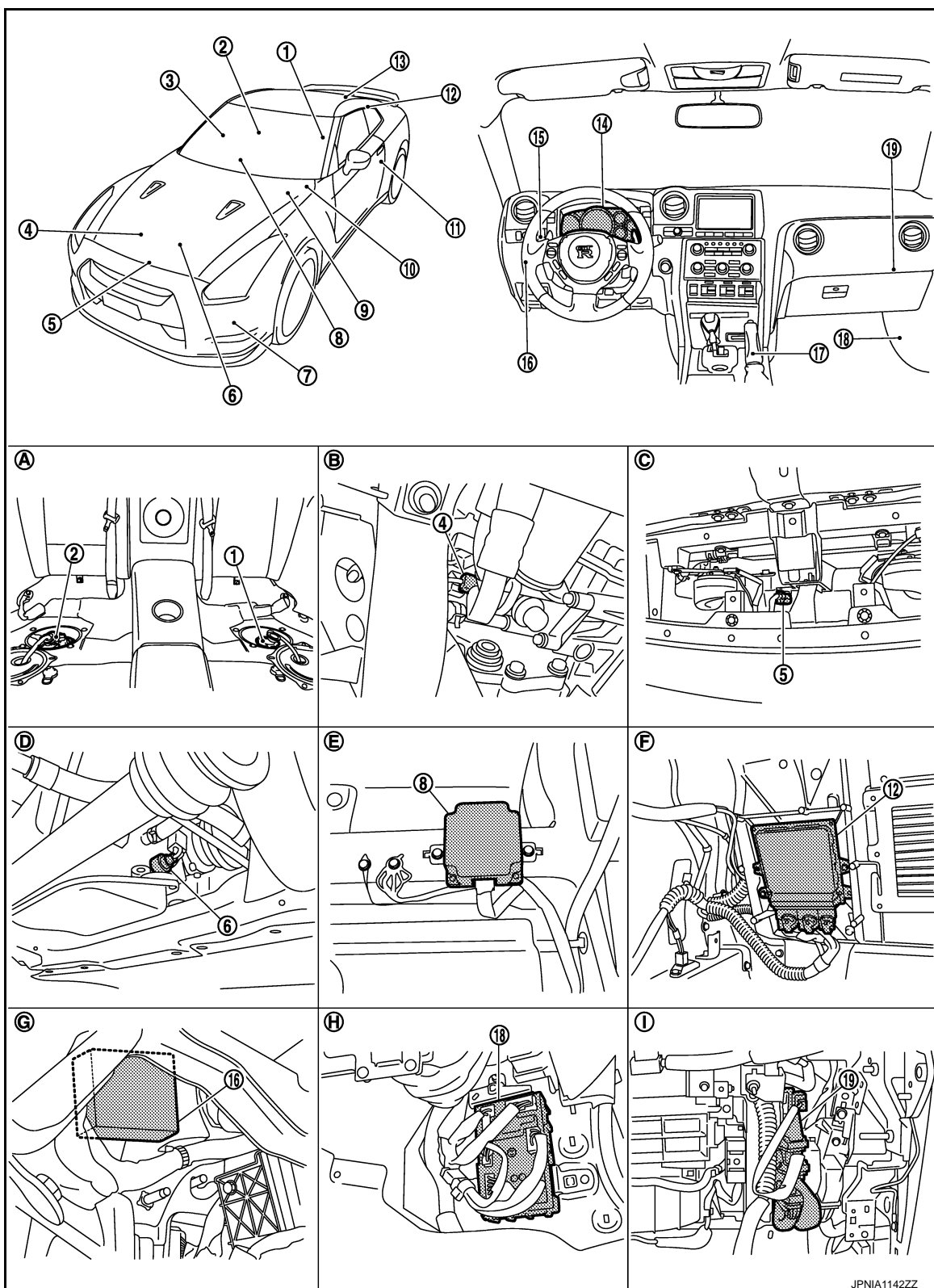
B. For Canada

METER SYSTEM

< SYSTEM DESCRIPTION >

METER SYSTEM : Component Parts Location

INFOID:000000009189292



1. Fuel level sensor unit (Sub)
4. Oil pressure sensor
7. Washer level switch

2. Fuel level sensor unit (Main)
5. Ambient sensor
8. AWD control unit

3. Door switch (passenger side)
6. Oil level sensor
9. Brake fluid level switch

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

METER SYSTEM : Component Description

INFOID:000000009189293

Unit	Description
Combination meter	Based on received signals from each unit, switch, and sensor, controls the following items. <ul style="list-style-type: none"> Speedometer Engine coolant temperature gauge Warning lamp Information display Tachometer Fuel gauge Indicator lamp
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge signal to the combination meter.
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combination meter.
ECM	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Engine speed signal Fuel consumption monitor signal Engine status signal Engine coolant temperature signal Malfunction indicator lamp signal ASCD status signal
ABS actuator and electric unit (control unit)	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Vehicle speed signal VDC warning display signal ABS warning display signal
BCM	Transmits signals received from each unit and switch to the combination meter via CAN communication.
TCM	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Shift position signal Transmission oil high temperature warning display signal Transmission system warning display signal Shift lever position check display signal Shift lever position warning display signal Transmission clutch high temperature warning display signal Transmission system check display signal
AWD control unit	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> AWD clutch high temperature warning display signal Front/rear tire size discrepancy warning display signal AWD system warning display signal
Low tire pressure warning control unit	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Run-flat tire warning display signal Tire pressure monitoring system warning display signal Low tire pressure warning display signal

METER SYSTEM

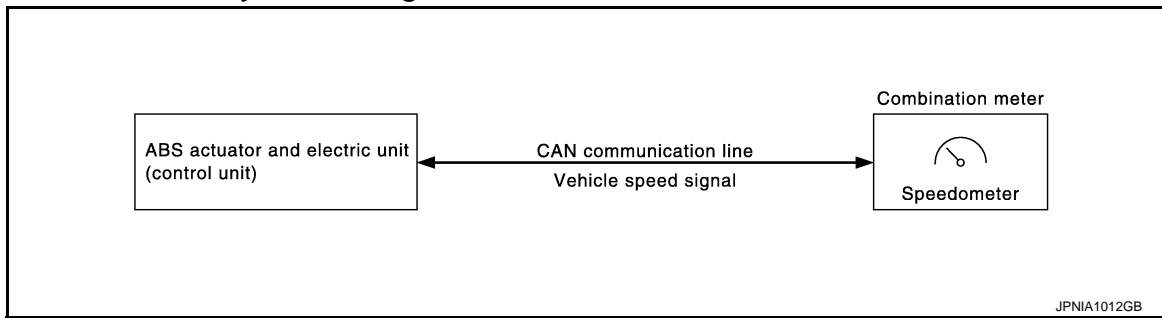
< SYSTEM DESCRIPTION >

Unit	Description
Meter control switch	Transmits the following signals to the combination meter. <ul style="list-style-type: none"> • Illumination control switch signal (+) • Trip A/B reset switch signal • Enter switch signal • Illumination control switch signal (-) • Select switch signal
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.
Parking brake switch	Transmits the parking brake switch signal to the combination meter.
Oil level sensor	Transmits the oil level sensor signal to the combination meter.
Washer level switch	Transmits the washer level switch signal to the combination meter.
Ambient sensor	Transmits the ambient sensor signal to the combination meter.

SPEEDOMETER

SPEEDOMETER : System Diagram

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SPEEDOMETER : System Description

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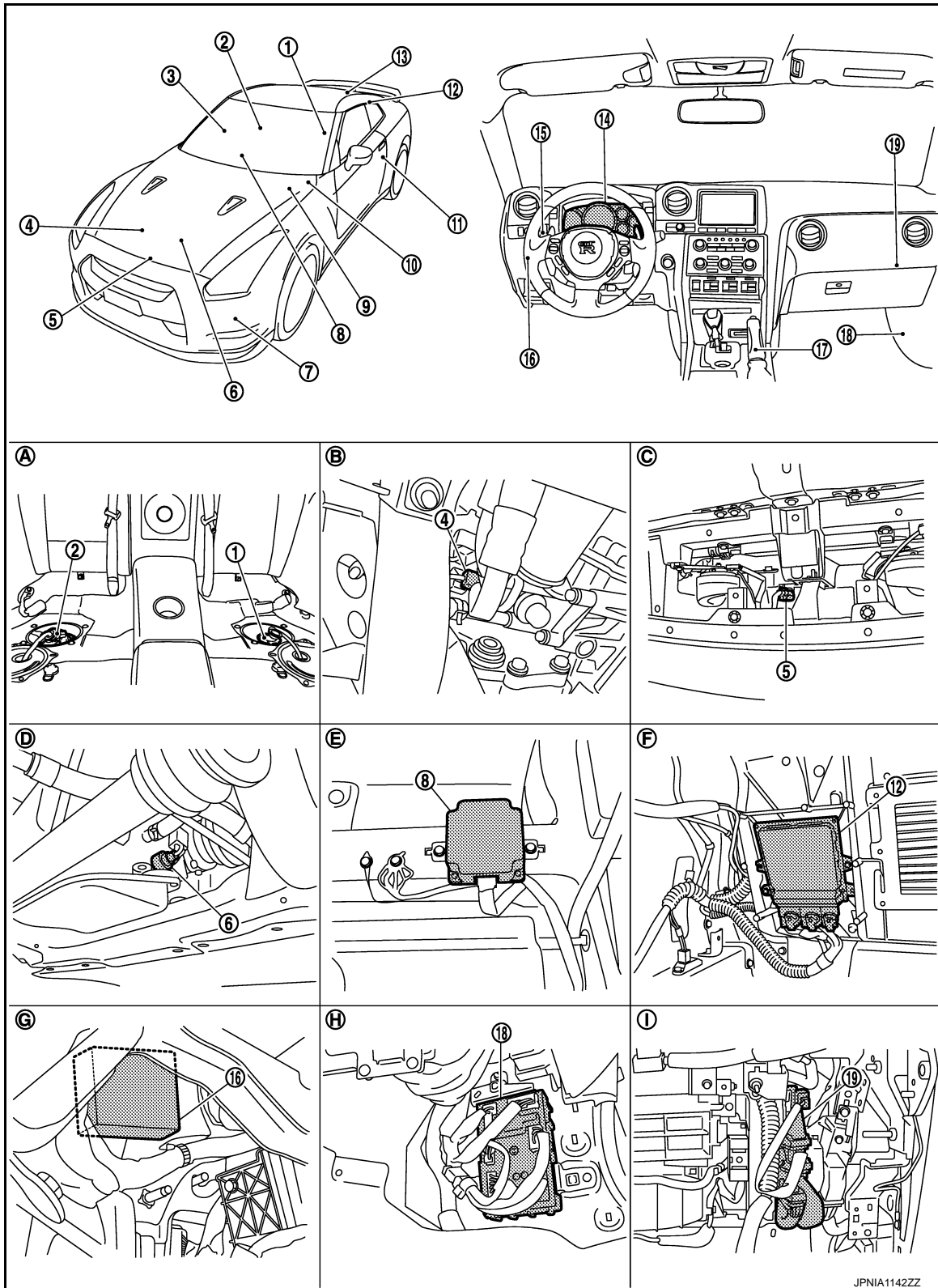
- ABS actuator and electric unit (control unit) converts the rectangular wave signal from wheel sensor to the vehicle speed signal, and transmits the signal to the combination meter via CAN communication.
- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication, and indicates the vehicle speed.

METER SYSTEM

< SYSTEM DESCRIPTION >

SPEEDOMETER : Component Parts Location

INFOID:000000009189296



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

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|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

SPEEDOMETER : Component Description

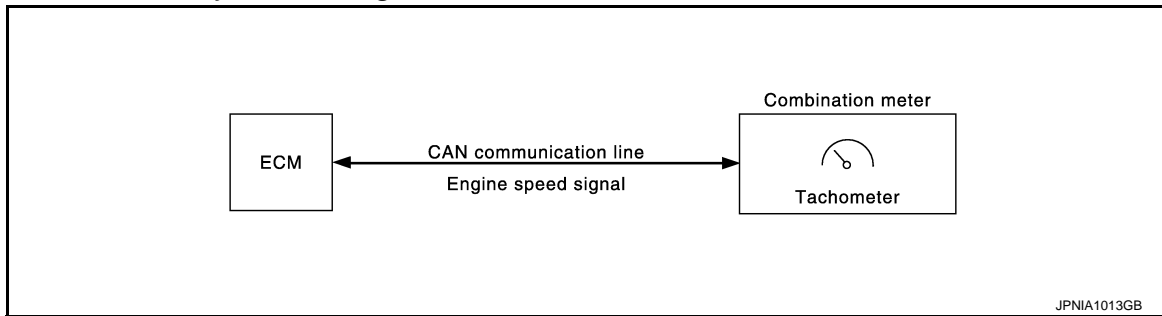
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Unit	Description
Combination meter	Using the vehicle speed signal received from the ABS actuator and electric unit (control unit) via CAN communication, indicates the vehicle speed.
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication.

TACHOMETER

TACHOMETER : System Diagram

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TACHOMETER : System Description

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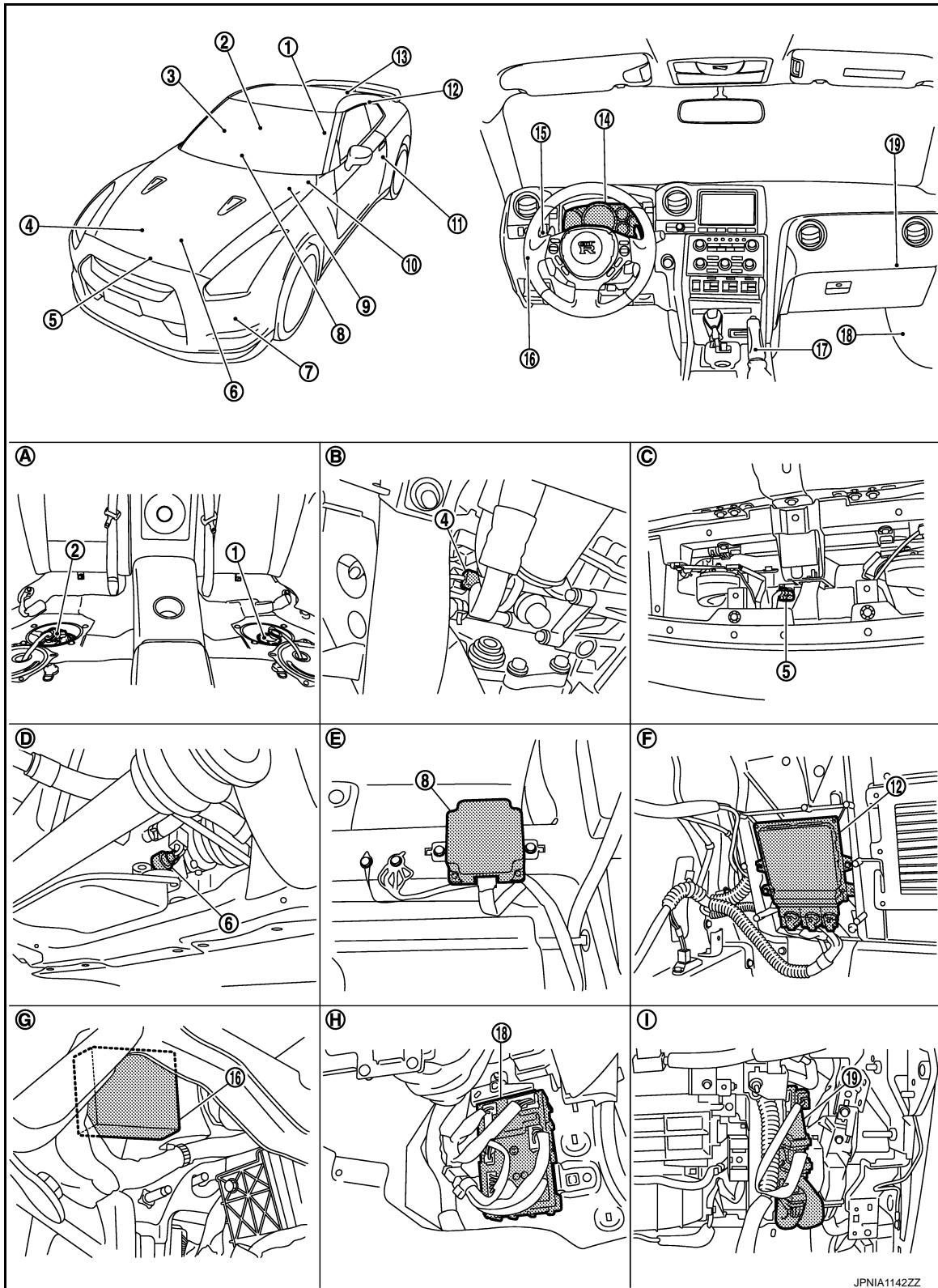
- ECM reads the crankshaft position signal from the crankshaft position sensor, and transmits the engine speed signal to the combination meter via CAN communication.
- The combination meter receives the engine speed signal from ECM via CAN communication, and indicates the engine speed.

METER SYSTEM

< SYSTEM DESCRIPTION >

TACHOMETER : Component Parts Location

INFOID:000000009189300



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

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|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

TACHOMETER : Component Description

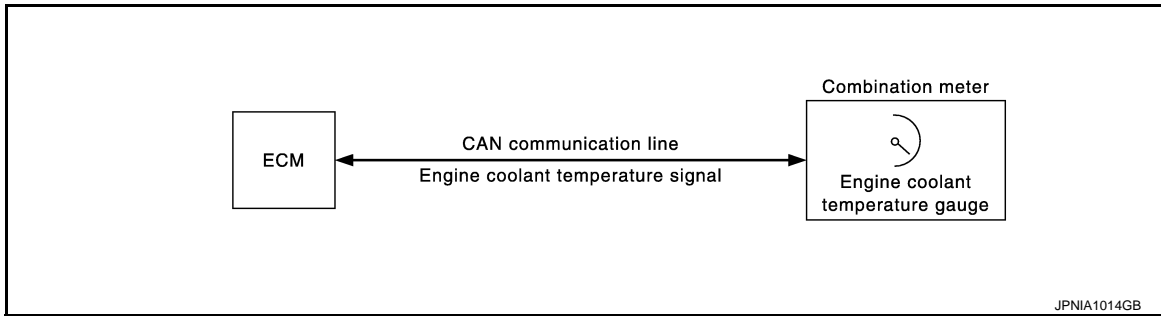
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Unit	Description
Combination meter	Using the engine speed signal received from ECM via CAN communication, indicates the engine speed.
ECM	Transmits the engine speed signal to the combination meter via CAN communication.

ENGINE COOLANT TEMPERATURE GAUGE

ENGINE COOLANT TEMPERATURE GAUGE : System Diagram

INFOID:000000009189302



ENGINE COOLANT TEMPERATURE GAUGE : System Description

INFOID:000000009189303

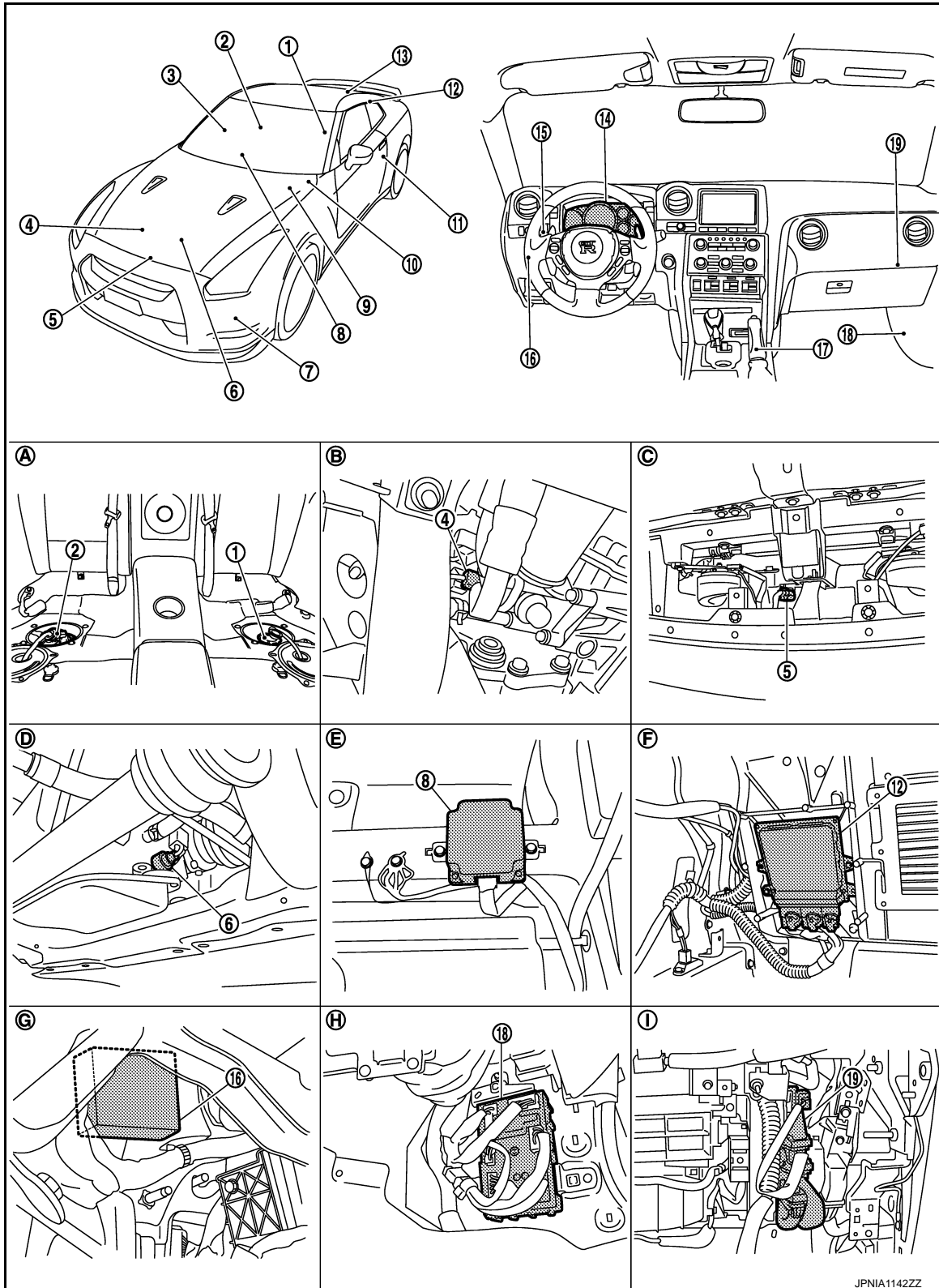
- ECM reads the engine coolant temperature signal from the engine coolant temperature sensor, and transmits the signal to the combination meter via CAN communication.
- The combination meter receives the engine coolant temperature signal from ECM via CAN communication, and indicates the engine coolant temperature.

METER SYSTEM

< SYSTEM DESCRIPTION >

ENGINE COOLANT TEMPERATURE GAUGE : Component Parts Location

INFOID:000000009189304



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

ENGINE COOLANT TEMPERATURE GAUGE : Component Description

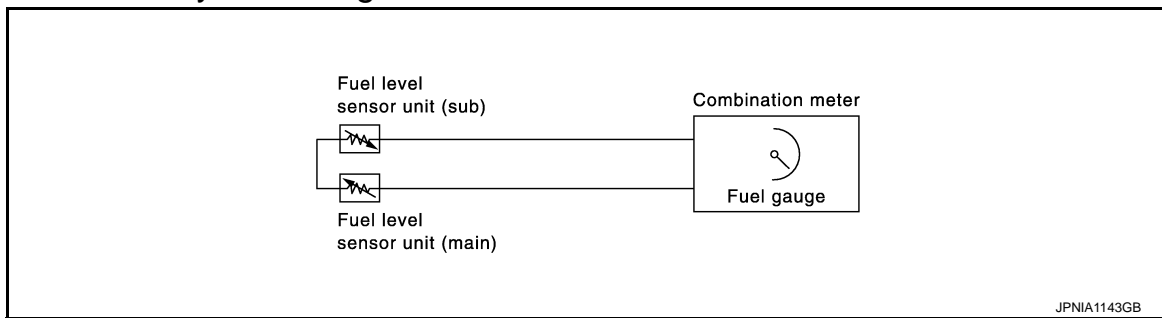
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Unit	Description
Combination meter	Using the engine coolant temperature signal received from ECM via CAN communication, indicates the engine coolant temperature.
ECM	Transmits the engine coolant temperature signal to the combination meter via CAN communication.

FUEL GAUGE

FUEL GAUGE : System Diagram

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FUEL GAUGE : System Description

INFOID:0000000009189307

CONTROL OUTLINE

The combination meter reads the fuel level sensor signal (resistance value) from the fuel level sensor unit, and indicates the fuel level to the fuel gauge.

REFUEL CONTROL

When the ignition switch is turned from OFF to ON, or when all the following conditions are met, it performs a control to move the fuel gauge pointer faster than normal.

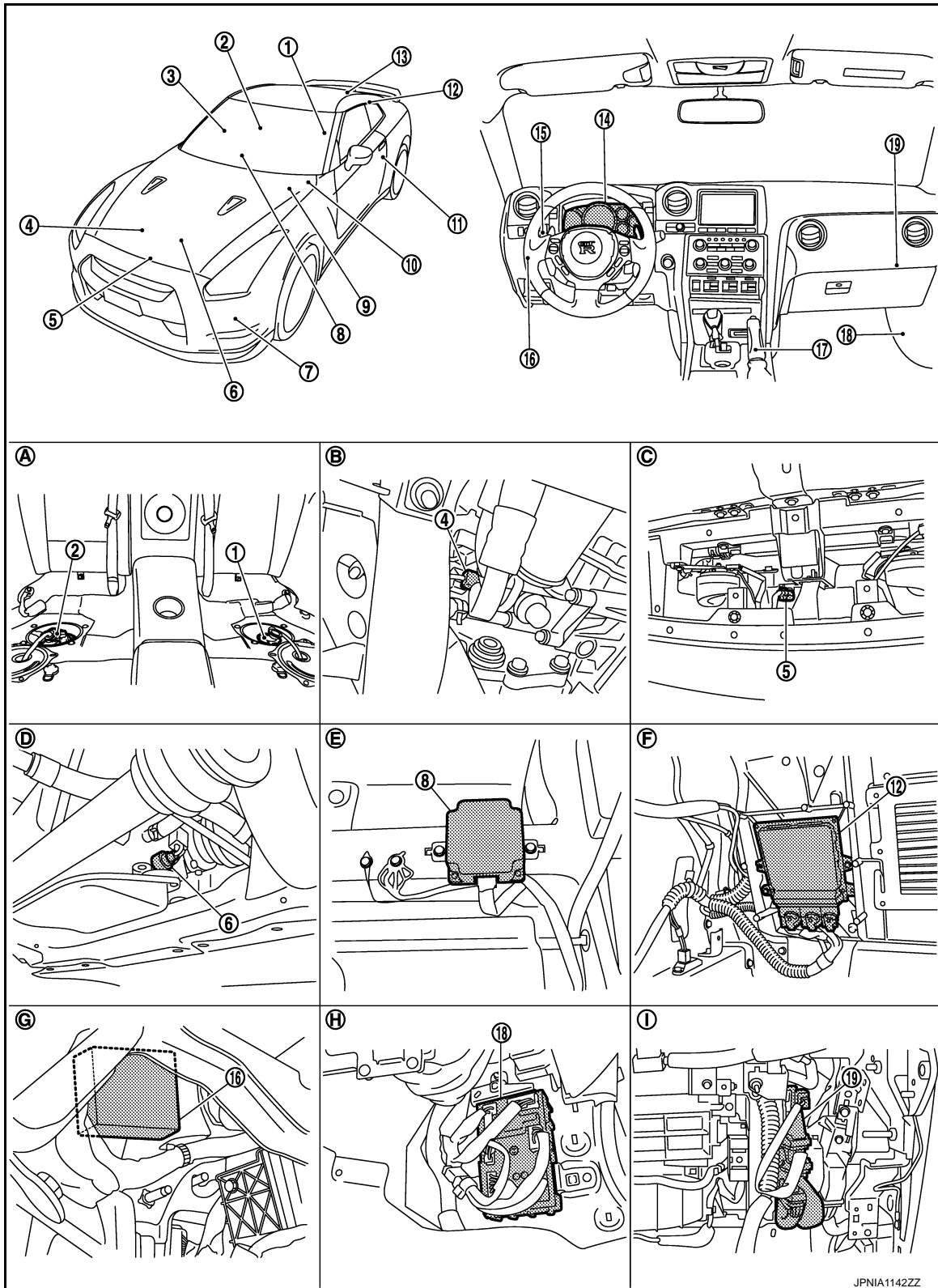
- Ignition switch ON
- Vehicle stop status
- Fuel level fluctuation is 15 ℓ (4 US gal, 3-1/4 Imp gal) or more.

METER SYSTEM

< SYSTEM DESCRIPTION >

FUEL GAUGE : Component Parts Location

INFOID:000000009189308



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

FUEL GAUGE : Component Description

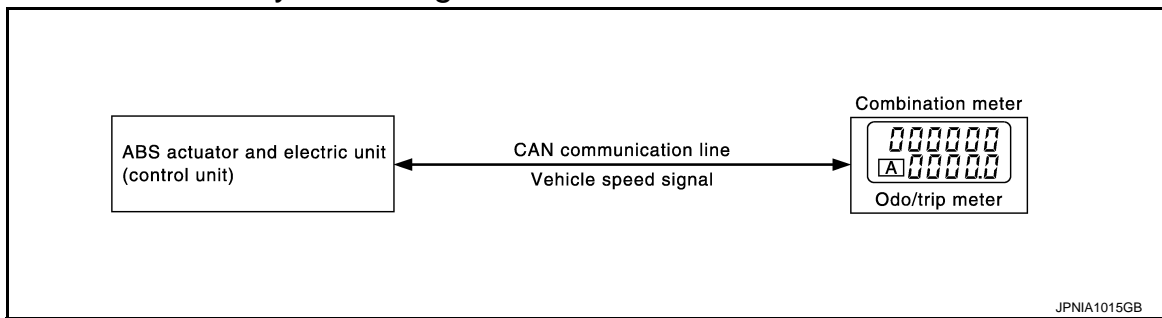
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Unit	Description
Combination meter	Reads the fuel level sensor signal (resistance value) from the fuel level sensor unit, and indicates the remaining fuel level.
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel level sensor signal to the combination meter.

ODO/TRIP METER

ODO/TRIP METER : System Diagram

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ODO/TRIP METER : System Description

INFOID:000000009189311

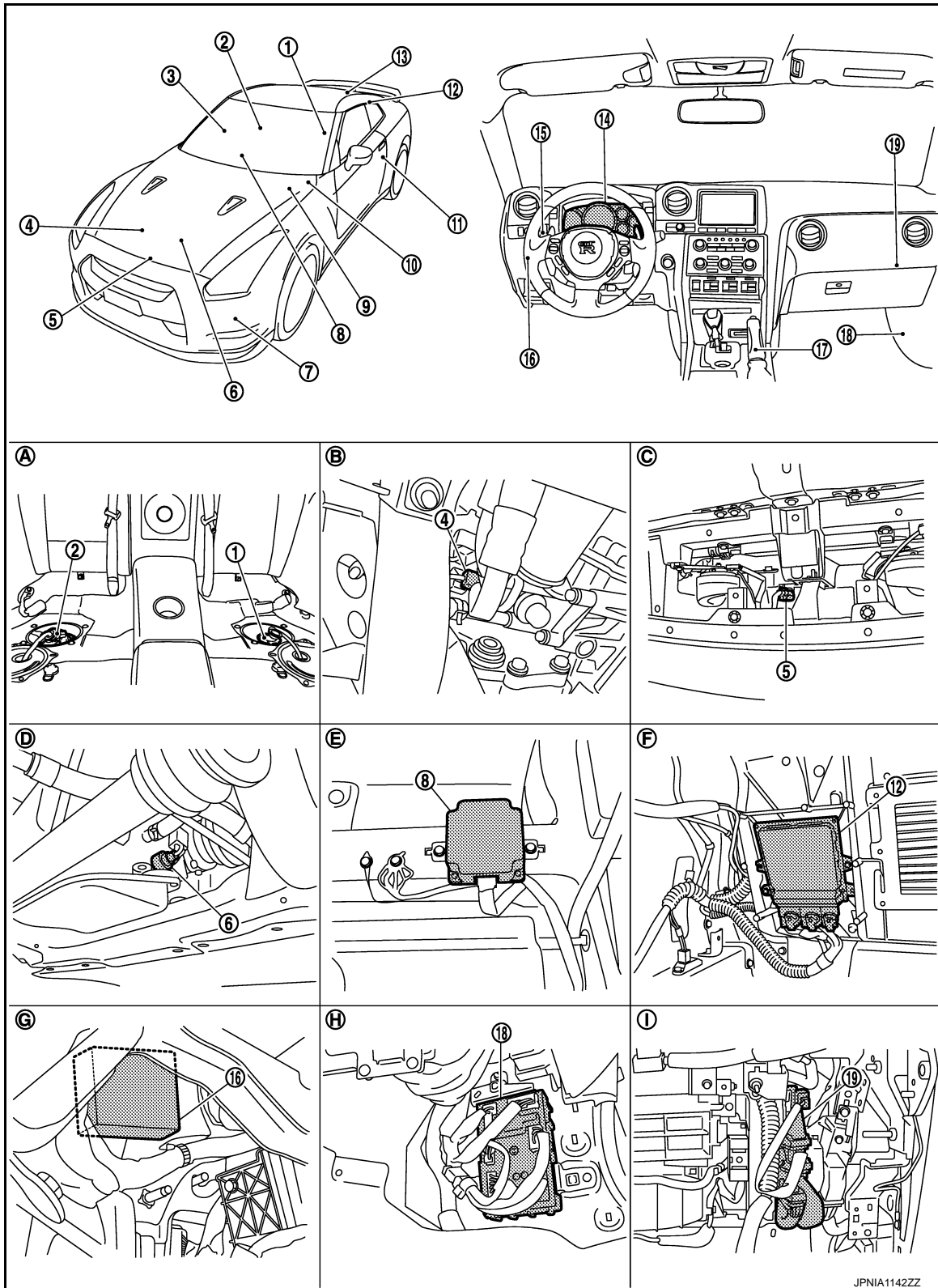
- ABS actuator control unit reads the rectangular wave signal received from wheel sensor, and transmits the vehicle speed signal to the combination meter via CAN communication.
- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication, then calculates and displays the travel distance.

METER SYSTEM

< SYSTEM DESCRIPTION >

ODO/TRIP METER : Component Parts Location

INFOID:000000009189312



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

ODO/TRIP METER : Component Description

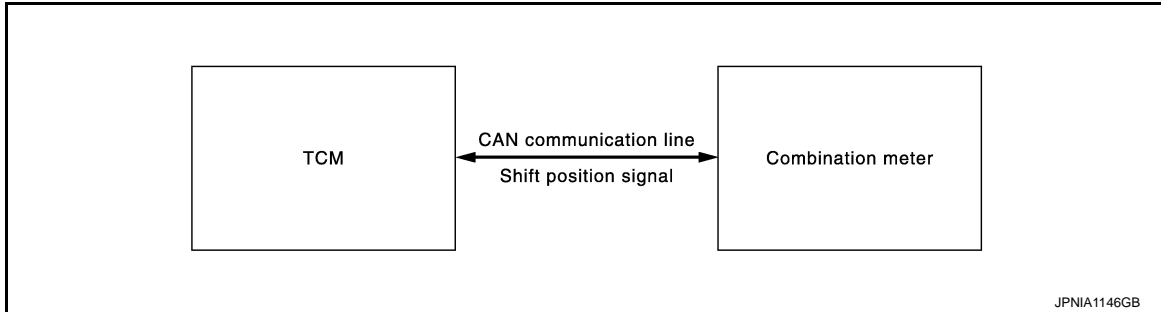
INFOID:000000009189313

Unit	Description
Combination meter	Converts the vehicle speed signal received from the ABS actuator and electric unit (control unit) via CAN communication to mileage, and displays the accumulated mileage to the odometer and tripmeter.
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication.

SHIFT POSITION INDICATOR

SHIFT POSITION INDICATOR : System Diagram

INFOID:000000009189314



SHIFT POSITION INDICATOR : System Description

INFOID:000000009189315

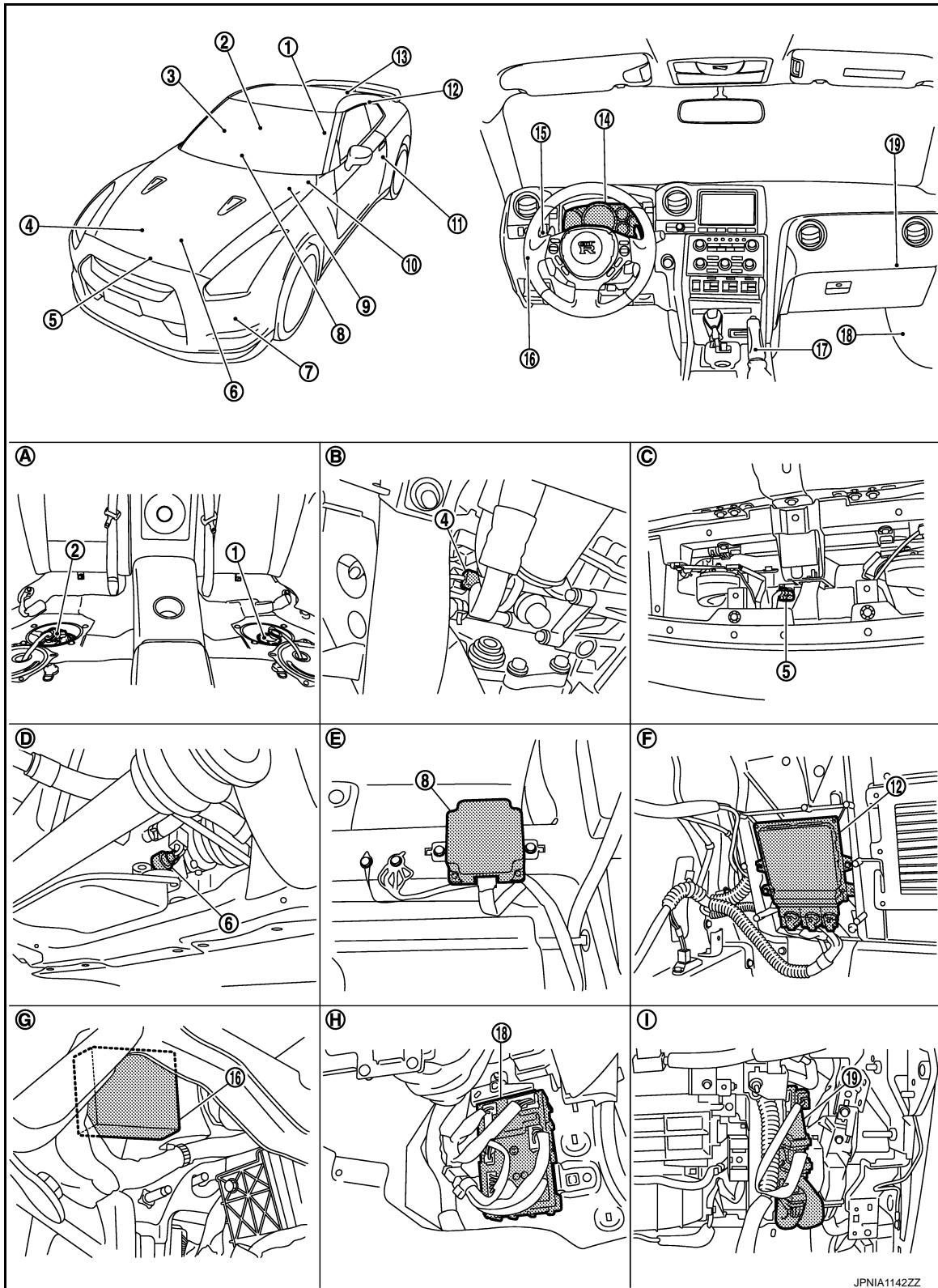
- The combination meter receives the shift position signal from TCM via CAN communication, and displays the shift position to the shift position indicator.
- The combination meter receives the shift position signal from TCM via CAN communication. If the status does not allow a shift change, it blinks the shift position indicator.

METER SYSTEM

< SYSTEM DESCRIPTION >

SHIFT POSITION INDICATOR : Component Parts Location

INFOID:000000009189316



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

SHIFT POSITION INDICATOR : Component Description

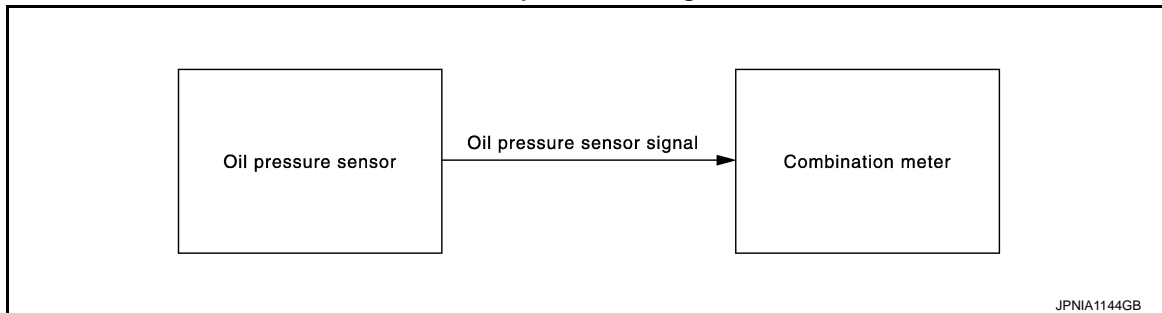
INFOID:000000009189317

Unit	Description
Combination meter	<ul style="list-style-type: none">Receives the shift position signal from TCM via CAN communication, and displays the shift position to the shift position indicator.Receives the shift position signal from TCM via CAN communication, and if the status does not allow a shift change, it blinks the shift position display in the shift position indicator.
TCM	Transmits the shift position signal to the combination meter via CAN communication.

OIL PRESSURE WARNING LAMP

OIL PRESSURE WARNING LAMP : System Diagram

INFOID:000000009189318



OIL PRESSURE WARNING LAMP : System Description

INFOID:000000009189319

OIL PRESSURE WARNING LAMP

Control Outline

The combination meter reads the oil pressure sensor signal from oil pressure sensor, and illuminates/turns off the oil pressure warning lamp.

NOTE:

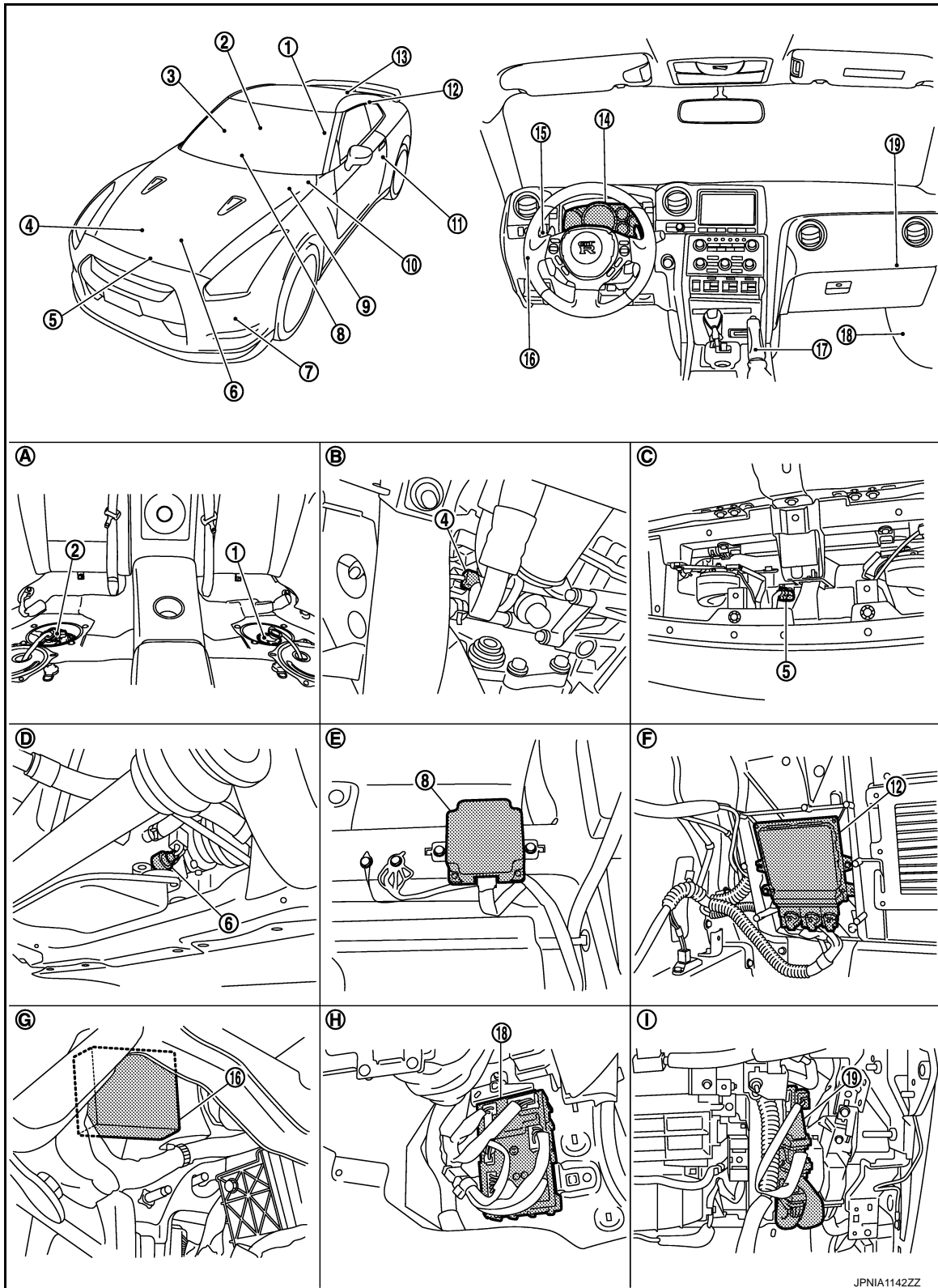
The display of engine oil pressure warning on the information display is shown/turned off simultaneously with the illumination/turning off of the oil pressure warning lamp.

METER SYSTEM

< SYSTEM DESCRIPTION >

OIL PRESSURE WARNING LAMP : Component Parts Location

INFOID:000000009189320



1. Fuel level sensor unit (Sub)
4. Oil pressure sensor
7. Washer level switch

2. Fuel level sensor unit (Main)
5. Ambient sensor
8. AWD control unit

3. Door switch (passenger side)
6. Oil level sensor
9. Brake fluid level switch

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

OIL PRESSURE WARNING LAMP : Component Description

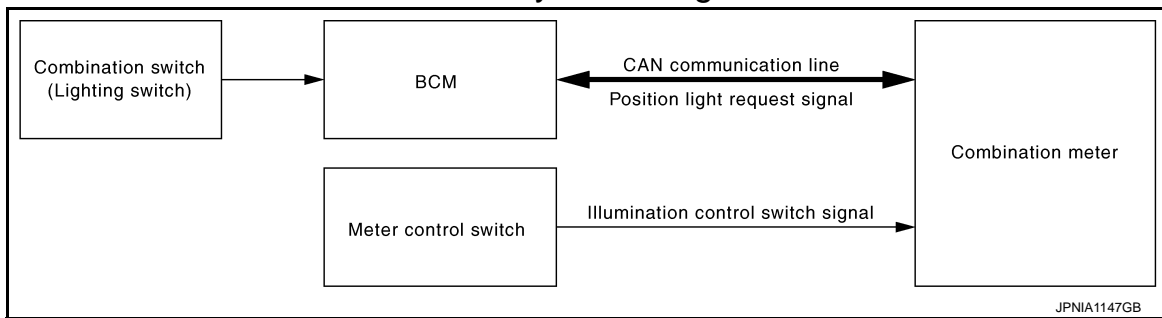
INFOID:000000009189321

Unit	Description
Combination meter	Using the oil pressure sensor signal received from oil pressure sensor, illuminates/turns off the oil pressure warning lamp.
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combination meter.

METER ILLUMINATION CONTROL

METER ILLUMINATION CONTROL : System Diagram

INFOID:000000009189322

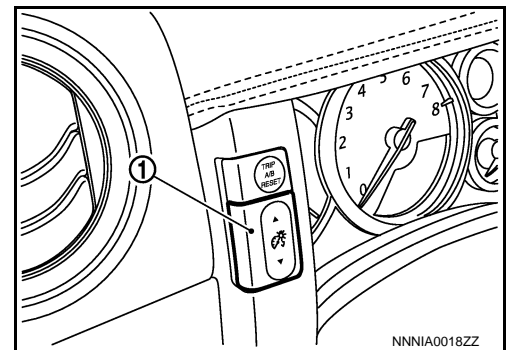


METER ILLUMINATION CONTROL : System Description

INFOID:000000009189323

METER ILLUMINATION CONTROL FUNCTION

Every time when the illumination control switch (1) is pressed, the illuminance of meter illumination can be adjusted in 22 steps. (Illuminance can be adjusted both in daytime and nighttime modes.)

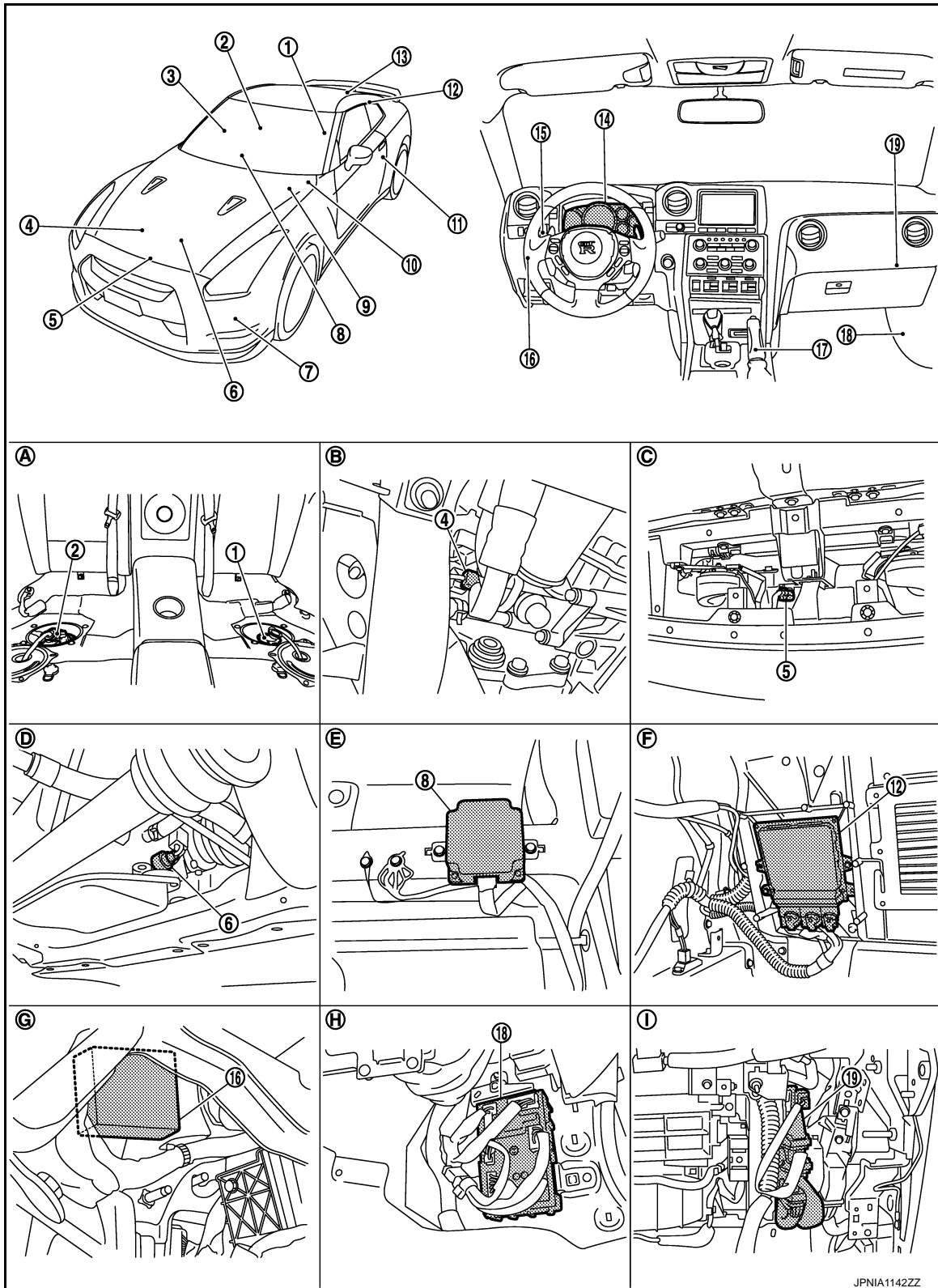


METER SYSTEM

< SYSTEM DESCRIPTION >

METER ILLUMINATION CONTROL : Component Parts Location

INFOID:000000009189324



- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |

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METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

METER ILLUMINATION CONTROL : Component Description

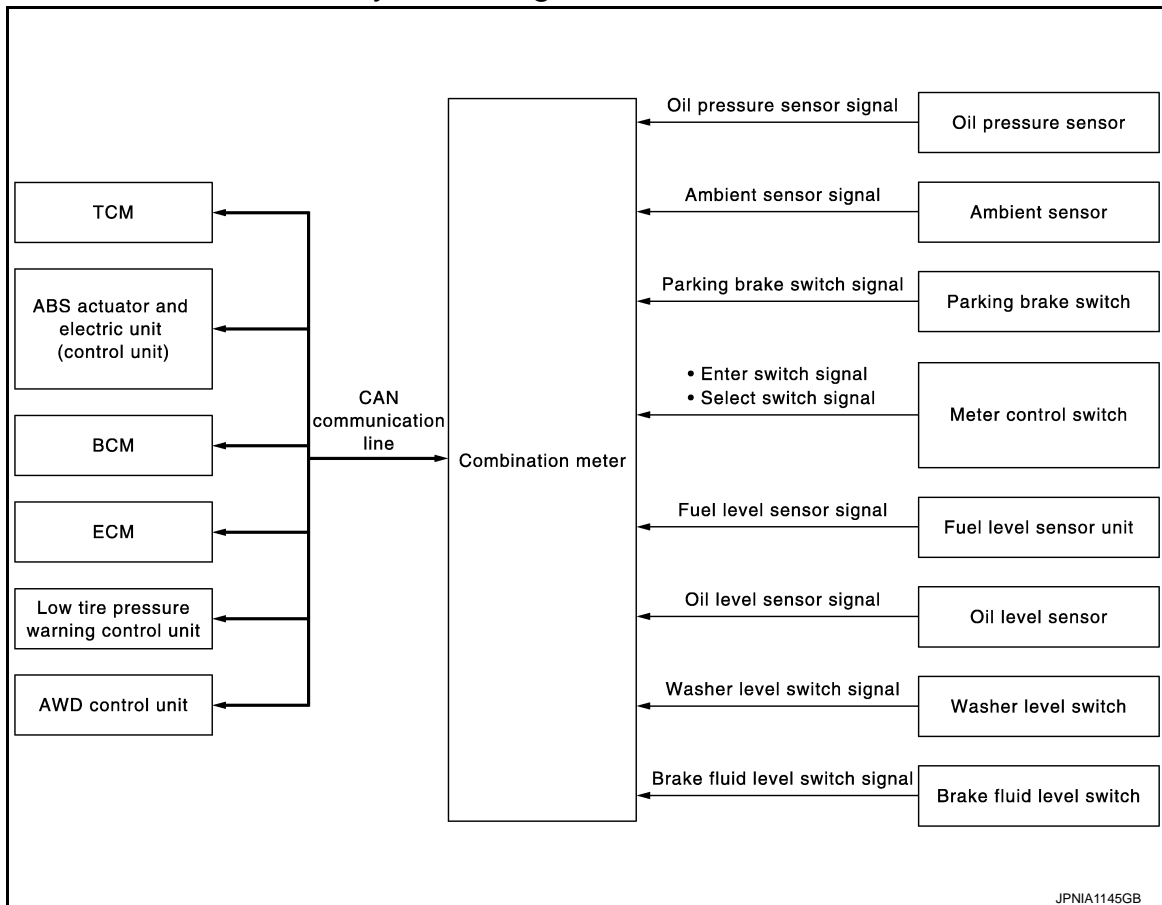
INFOID:000000009189325

Unit	Description
Combination meter	Controls the meter illumination with the illumination control switch signal from the meter control switch and the position light request signal from BCM via CAN communication.
BCM	Transmits the position light request signal to the combination meter via CAN communication.
Meter control switch	Transmits the following signals to the combination meter. <ul style="list-style-type: none"> • Illumination control switch signal (+) • Illumination control switch signal (-)
Combination switch (Lighting switch)	Using the combination switch reading function, BCM reads the combination switch status.

INFORMATION DISPLAY

INFORMATION DISPLAY : System Diagram

INFOID:000000009189326



INFORMATION DISPLAY : System Description

INFOID:000000009189327

DESCRIPTION

METER SYSTEM

< SYSTEM DESCRIPTION >

- The combination meter inputs the information required to control the operation of information display by using the communication signals and others from each unit. A
- The combination meter integrates the drive computer function, and performs the warning display/information display by using the signals received from each unit, sensor, and switch. B
- When the enter switch signal or select switch signal is received, the combination meter can check, change screens, perform setting, or reset the warning, indication, information, and setting on the information display.

INSTANTANEOUS FUEL CONSUMPTION

Control Outline

- The combination meter receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator control unit via CAN communication. C
- Based on the fuel consumption monitor signal and vehicle speed signal that are received via CAN communication, the combination meter calculates the instantaneous fuel consumption, and displays the result. D

VEHICLE SPEED

Control Outline

- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication. E
- Based on the vehicle speed signal received via CAN communication, the combination meter displays the vehicle speed. F

CRUISE CONTROL SYSTEM STATUS

Control Outline

- The combination meter receives the ASCD status signal from ECM via CAN communication. G
- Based on the ASCD status signal received via CAN communication, the combination meter displays the CRUISE control system setting status. H

NOTE:

When the CRUISE control system is OFF, the CRUISE control system status is not displayed. I

AVERAGE FUEL CONSUMPTION

Control Outline

- The combination meter receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator control unit via CAN communication. J
- Based on the fuel consumption monitor signal and vehicle speed signal that are received via CAN communication, the combination meter calculates the average fuel consumption, and displays the result. K
- The average fuel consumption displayed on the information display is updated at approximately 30-second intervals.

NOTE:

"—" is displayed for approximately 30 seconds just after the reset operation and after the ignition switch is OFF → ON. It is displayed simultaneously until the vehicle is driven approximately 500 m (0.3 mile). L

AVERAGE VEHICLE SPEED

Control Outline

- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication. M
- Based on the vehicle speed signal received via CAN communication and on the travel time measured in combination meter, the combination meter calculates the average vehicle speed, and displays the result. MWI
- The average vehicle speed displayed on the information display is updated at approximately 30-second intervals. O

NOTE:

"—" is displayed for 30 seconds just after the reset operation and after the ignition switch is OFF → ON. It is displayed simultaneously until the vehicle is driven approximately 500 m (0.3 mile). P

TRAVEL TIME

Control Outline

The combination meter measures and displays travel time (ignition switch ON time).

TRAVEL DISTANCE

Control Outline

METER SYSTEM

< SYSTEM DESCRIPTION >

The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication, then calculates and displays the travel distance.

POSSIBLE DRIVING DISTANCE

Control Outline

- The combination meter receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator control unit via CAN communication.
- Based on the signal received via CAN communication and on the fuel level sensor signal received from the fuel level sensor unit, the combination meter calculates the possible driving distance, and displays the result.

NOTE:

- “—” is displayed for 30 seconds after the ignition switch is OFF → ON. It is displayed simultaneously until the vehicle is driven approximately 500 m (0.3 mile).
- The indicated values may not match each other when refueling with the ignition switch ON. Refer to [MWI-16. "FUEL GAUGE : System Description"](#).

AMBIENT AIR TEMPERATURE

- Combination meter calculates outside air temperature based on the signal received from ambient sensor, and displays the result on information display.
- Combination meter corrects the indicated temperature using ignition switch signal, ambient sensor signal and vehicle speed signal.

Correction Process (Right after ignition switch is turned ON)

The detected temperature by ambient sensor is displayed when the vehicle enters in both of the following condition.

- When the detected temperature is higher than the indicated temperature on information display.
- When the duration of ignition switch OFF to ON is long.

The last indicated temperature is displayed when the vehicle enters in either of the following conditions.

- When the detected temperature by ambient sensor is lower than the indicated temperature on information display.
- When the duration of ignition switch OFF to ON is short.

Correction Process (When the ignition switch is ON)

The detected temperature by ambient sensor is displayed under the following condition.

- When the detected temperature is lower than the indicated temperature on information display.

The indicated temperature is not updated under the following condition.

- When the detected temperature by ambient sensor is higher than the indicated temperature on information display [at a speed of 20 km/h (12 MPH) or less].

The indicated temperature on information display rises slowly to reach the detected temperature by ambient sensor under the following condition.

- When the detected temperature is higher than the indicated temperature on information display [at a speed of more than 20 km/h (12 MPH)].

The indicated temperature on information display rises to reach the detected temperature by ambient sensor under the following condition.

- When the detected temperature is higher than the indicated temperature on information display [while driving a certain period of time at a speed of more than 20 km/h (12 MPH)].

NOTE:

- “—” is displayed for 2.5 seconds right after ignition switch is turned ON.
- If a battery or combination meter is removed and installed, the detected temperature by ambient sensor is displayed, right after ignition switch is turned ON.
- The indicated temperature may be higher than the actual temperature because of heat radiation from engine or reflection of heat on road surface.

SETTING

METER SYSTEM

< SYSTEM DESCRIPTION >

Setting item list

Items				Setting range	Setting unit (Press and hold for 1 second or more)	Description
Alert	Up shift			AUTO, OFF, 3000 rpm – 6300 rpm	100 rpm (500 rpm)	The engine speed signal is received from ECM via CAN communication, and the up-shift indicator can be set to ON/blink/OFF depending on the engine speed.
	Timer			OFF, 0.5HOUR–6HOUR	30 minutes (60 minutes)	An alarm message is displayed on the information display when the set travel time is reached.
	ICY			ON/OFF	—	When the ambient air temperature becomes 3 °C (37 °F) or lower, the ambient sensor signal is received from the ambient sensor and a freeze caution alarm message is displayed on the information display.
Maintenance	Oil	Engine	Replace-ment distance	No setting – 15000 km No setting – 9500 miles	500 km (1000 km) 250 miles (500 miles)	<ul style="list-style-type: none">• An engine oil replacement distance warning is displayed on the information display.• When the set distance is reached, a warning is displayed requesting replacement of the engine oil.
			Remain-ing amount	—	—	<ul style="list-style-type: none">• The oil level sensor signal is received from oil level sensor, and the engine oil level is displayed in 5 steps.• The oil level sensor signal is received from the oil level sensor, and an indication is displayed that the engine oil level is at a normal value.• The oil level sensor signal is received from the oil level sensor, and an indication is displayed that the engine oil level is abnormal.
	Trans-mission	Replace-ment distance	No setting – 90000 km No setting – 55500 miles	500 km (1000 km) 250 miles (500 miles)	When the set distance is reached, a warning is displayed requesting replacement of the transmission oil.	
	Filter		Replace-ment distance	No setting – 15000 km No setting – 9500 miles	500 km (1000 km) 250 miles (500 miles)	When the set distance is reached, a warning is displayed requesting replacement of the oil filter.
	Tire		Replace-ment distance	No setting – 30000 km No setting – 18500 miles	500 km (1000 km) 250 miles (500 miles)	When the set distance is reached, a warning is displayed requesting replacement of the tires.
Options	Language	ENGLISH/FRANCAIS		—	—	Changing the language setting can be performed.
	Unit	METRIC/US		—	—	Changing the unit setting can be performed.

NOTE:
Engine oil level display

METER SYSTEM

< SYSTEM DESCRIPTION >

When the following conditions are satisfied, the combination meter reads the resistance value of oil level sensor, and displays the oil level on the information display. The combination meter does not read the oil level sensor resistance value within 5 minutes after the previous reading of oil level sensor resistance value by the combination meter.

1. Turn the ignition switch OFF.
2. Wait for 5 minutes or more, then open the driver door.

DOOR OPEN WARNING

Control Outline

The combination meter receives the door switch signal from BCM via CAN communication, then judges and displays the door open warning.

TRUNK OPEN WARNING

Control Outline

The combination meter receives the trunk switch signal from BCM via CAN communication, then judges and displays the trunk open warning.

PARKING BRAKE RELEASE WARNING

Control Outline

Based on the vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN communication and on the parking brake switch signal received from parking brake switch, the combination meter judges and displays the parking brake release warning.

Warning Operation Condition

The system judges that the parking brake is not released when the following conditions are satisfied.

- Vehicle speed is 7 km/h (4.3 MPH) or higher
- Parking brake switch ON

LOW FUEL WARNING

Control Outline

- Using the fuel gauge signal sent from the fuel level sensor unit, the combination meter judges and displays the fuel level warning.

Warning Operation Condition

- Fuel level: Approximately 13.5 ℓ (3-5/8 US gal, 3 Imp gal) or less [1.0 ℓ (1/4 US gal, 1/4 Imp gal) fuel residues included].

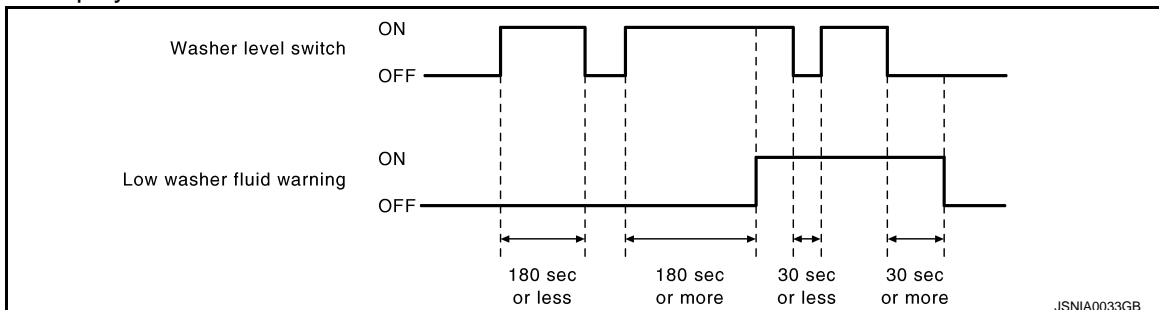
LOW WASHER FLUID WARNING

Control Outline

- The combination meter receives the washer level switch signal from the washer level switch.
- Based on the received washer level switch signal, the combination meter displays the low washer fluid warning.

Warning Operation Condition

- The low washer fluid warning is displayed if the washer level switch remains ON for 180 seconds or more.
- Even when the washer level switch is turned OFF while displaying the low washer fluid warning, the warning remains displayed if it is within 30 seconds.



ENGINE OIL LEVEL SENSOR ABNORMALITY WARNING

Control Outline

METER SYSTEM

< SYSTEM DESCRIPTION >

Under the following conditions, the combination meter displays the oil level sensor warning.

- Oil level sensor is open (resistance value of oil level sensor signal circuit exceeds 20 Ω).
- Oil level sensor is shorted (resistance value of oil level sensor signal circuit is less than 3 Ω).

SHIFT LEVER POSITION WARNING

Control Outline

- The combination meter receives the shift lever position warning display signal from TCM via CAN communication.
- Based on the shift lever position warning display signal received via CAN communication, the combination meter displays the shift lever position warning.

SHIFT “ P ” WARNING

Control Outline

- The combination meter receives the shift lever position check display signal from TCM via CAN communication.
- Based on the shift lever position check display signal received via CAN communication, the combination meter displays the shift “ P ” warning.

TRANSMISSION SYSTEM CHECK

Control Outline

- The combination meter receives the transmission system check display signal from TCM via CAN communication.
- Based on the transmission system check display signal received via CAN communication, the combination meter displays the transmission system check.

RUN-FLAT TIRE WARNING

Control Outline

- The combination meter receives the run-flat tire warning display signal from the low tire pressure warning control unit via CAN communication.
- Based on the run-flat tire warning display signal received via CAN communication, the combination meter displays the run-flat tire warning.

TRANSMISSION CLUTCH HIGH TEMPERATURE WARNING

Control Outline

- The combination meter receives the transmission clutch high temperature warning display signal from TCM via CAN communication.
- Based on the transmission clutch high temperature warning display signal received via CAN communication, the combination meter displays the transmission clutch high temperature warning.

TRANSMISSION OIL HIGH TEMPERATURE WARNING

- The combination meter receives the transmission oil high temperature warning display signal from TCM via CAN communication.
- Based on the transmission oil high temperature warning display signal received via CAN communication, the combination meter displays the transmission oil high temperature warning.

LOW TIRE PRESSURE WARNING

Control Outline

- The combination meter receives the low tire pressure warning display signal from the low tire pressure warning control unit via CAN communication.
- Based on the low tire pressure warning display signal received via CAN communication, the combination meter displays the low tire pressure warning.

AWD CLUTCH HIGH TEMPERATURE WARNING

Control Outline

- The combination meter receives the AWD clutch high temperature warning display signal from the AWD control unit via CAN communication.
- Based on the AWD clutch high temperature warning display signal received via CAN communication, the combination meter displays the AWD clutch high temperature warning.

FRONT/REAR TIRE SIZE DISCREPANCY WARNING

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METER SYSTEM

< SYSTEM DESCRIPTION >

Control Outline

- The combination meter receives the front/rear tire discrepancy warning display signal from the AWD control unit via CAN communication.
- Based on the front/rear tire discrepancy warning display signal received via CAN communication, the combination meter displays the front/rear tire discrepancy warning.

TRANSMISSION SYSTEM WARNING

Control Outline

- The combination meter receives the transmission system warning display signal from TCM via CAN communication.
- Based on the transmission system warning display signal received via CAN communication, the combination meter displays the transmission system warning.

TIRE PRESSURE MONITORING SYSTEM WARNING

Control Outline

- The combination meter receives the tire pressure monitoring system warning display signal from the low tire pressure warning control unit via CAN communication.
- Based on the tire pressure monitoring system warning display signal received via CAN communication, the combination meter displays the tire pressure monitoring system warning.

AWD SYSTEM WARNING

Control Outline

- The combination meter receives the AWD system warning display signal from the AWD control unit via CAN communication.
- Based on the AWD system warning display signal received via CAN communication, the combination meter displays the AWD system warning.

ANTI-LOCK BRAKING SYSTEM (ABS) WARNING

Control Outline

- The combination meter receives the ABS warning display signal from the ABS control unit via CAN communication.
- Based on the ABS warning display signal received via CAN communication, the combination meter displays the anti-lock braking system (ABS) warning.

VEHICLE DYNAMIC CONTROL (VDC) SYSTEM WARNING

Control Outline

- The combination meter receives the VDC warning display signal from the ABS control unit via CAN communication.
- Based on the VDC warning display signal received via CAN communication, the combination meter displays the vehicle dynamic control (VDC) system warning.

ENGINE SYSTEM WARNING

Control Outline

- The combination meter receives the engine status signal from ECM via CAN communication.
- Based on the engine status signal received via CAN communication, the combination meter displays the engine system warning.

CRUISE CONTROL SYSTEM WARNING

Control Outline

- The combination meter receives the ASCD status signal from ECM via CAN communication.
- Based on the ASCD status signal received via CAN communication, the combination meter displays the cruise control system warning.

ENGINE OIL LOW PRESSURE WARNING

Control Outline

- The combination meter receives the oil pressure sensor signal from the oil pressure sensor.
- Based on the received oil pressure sensor signal, the combination meter displays the insufficient engine oil low pressure warning.

METER SYSTEM

< SYSTEM DESCRIPTION >

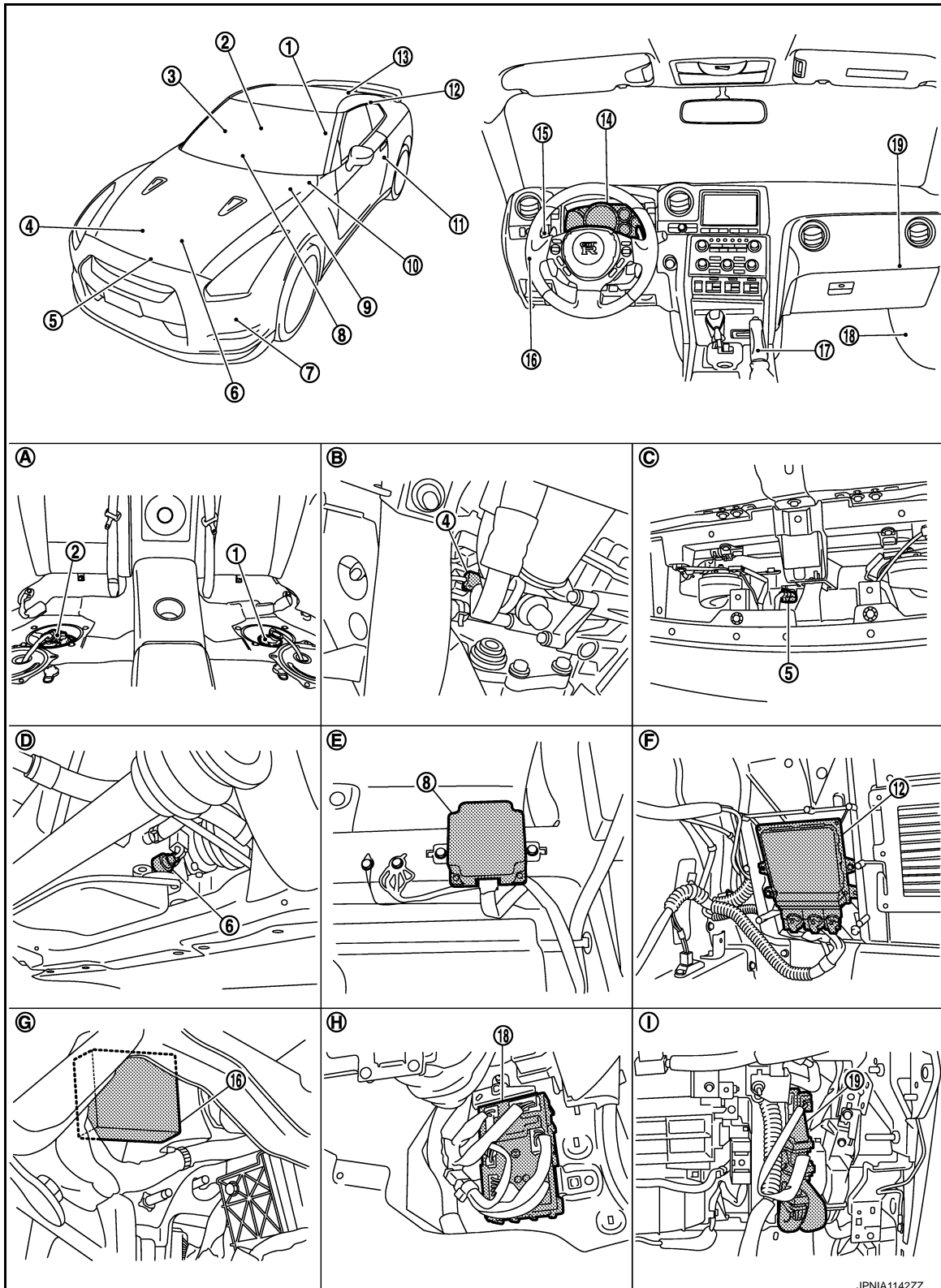
LOW BRAKE FLUID WARNING

Control Outline

- The combination meter receives the brake fluid level switch signal from the brake fluid level switch.
- Based on the received brake fluid level switch signal, the combination meter displays the low brake fluid warning.

INFORMATION DISPLAY : Component Parts Location

INFOID:000000009189328



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MWI

METER SYSTEM

< SYSTEM DESCRIPTION >

- | | | |
|---|---|--|
| 1. Fuel level sensor unit (Sub) | 2. Fuel level sensor unit (Main) | 3. Door switch (passenger side) |
| 4. Oil pressure sensor | 5. Ambient sensor | 6. Oil level sensor |
| 7. Washer level switch | 8. AWD control unit | 9. Brake fluid level switch |
| 10. ABS actuator and electric unit (control unit) | 11. Door switch (driver side) | 12. TCM |
| 13. Trunk switch | 14. Combination meter | 15. Combination switch (Lighting switch) |
| 16. Low tire pressure warning control unit | 17. Parking brake | 18. BCM |
| 19. ECM | | |
| A. Under rear seat | B. Right side of engine | C. Radiator core support (center) |
| D. Oil pan LH upper | E. Front RH seat under | F. Trunk room left back |
| G. Lower instrument panel LH | H. Dashboard side lower (passenger seat side) | I. Glove box assembly back |

INFORMATION DISPLAY : Component Description

INFOID:000000009189329

Unit	Description
Combination meter	Based on each received signal from each unit, switch, and sensor, controls the information display.
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge signal to the combination meter.
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combination meter.
ECM	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Engine speed signal Fuel consumption monitor signal Engine status signal ASCD status signal
ABS actuator and electric unit (control unit)	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Vehicle speed signal ABS warning display signal VDC warning display signal
BCM	Transmits the signals received from each unit to the combination meter via CAN communication.
TCM	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Shift lever position check display signal Shift lever position warning display signal Transmission oil high temperature warning display signal Transmission clutch high temperature warning display signal Transmission system warning display signal Transmission system check display signal
AWD control unit	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> AWD clutch high temperature warning display signal Front/rear tire size discrepancy warning display signal AWD system warning display signal
Low tire pressure warning control unit	Transmits the following signals to the combination meter via CAN communication. <ul style="list-style-type: none"> Run-flat tire warning display signal Low tire pressure warning display signal Tire pressure monitoring system warning display signal
Meter control switch	Transmits the following signals to the combination meter. <ul style="list-style-type: none"> Enter switch signal Select switch signal
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.
Parking brake switch	Transmits the parking brake switch signal to the combination meter.
Oil level sensor	Transmits the oil level sensor signal to the combination meter.

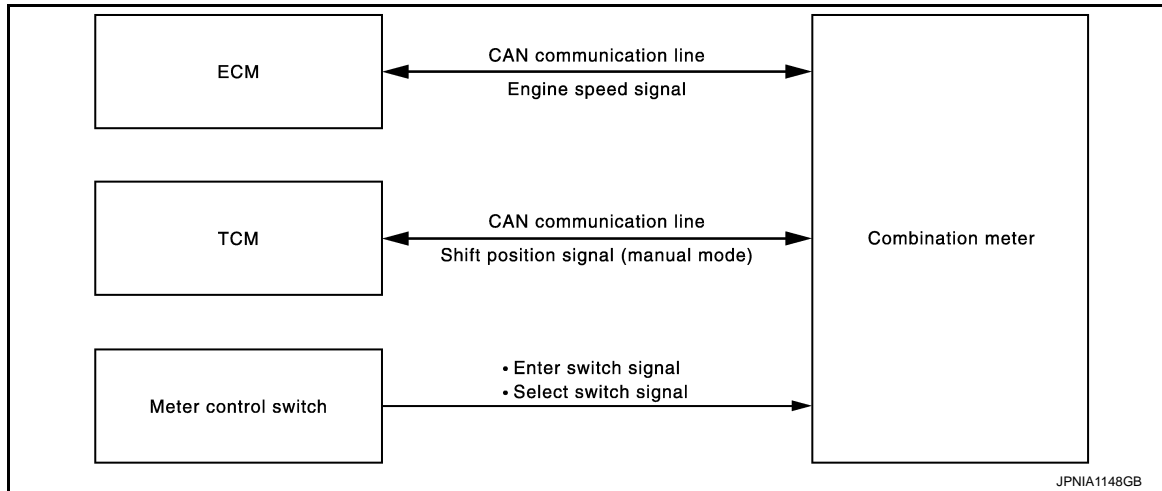
METER SYSTEM

< SYSTEM DESCRIPTION >

Unit	Description
Washer level switch	Transmits the washer level switch signal to the combination meter.
Ambient sensor	Detects the ambient air temperature, and transmits the ambient sensor signal to the combination meter.

UP-SHIFT INDICATOR

UP-SHIFT INDICATOR : System Diagram



UP-SHIFT INDICATOR : System Description

INFOID:000000009189331

- The combination meter receives the engine speed signal from ECM and the shift position signal (manual mode range) from TCM via CAN communication, and illuminates/turns off/blinks the up-shift indicator.
- The engine speed at which the up-shift indicator is illuminated/turned off/blinked can be set with the setting function of information display.
 - OFF: All of the up-shift indicators do not illuminate.
 - 3,000 to 6,300 rpm: Engine speed can be set at which the up-shift indicator (green) is illuminated.
 - AUTO: Up-shift indicator (green) does not illuminate. The up-shift indicator (yellow) and up-shift indicator (red) is turned on/off according to the set value.

UP-SHIFT INDICATOR (GREEN)

- Using the setting function of information display, the up-shift warning speed can be set.
- The up-shift indicator (green) is illuminated/turned off/blinked according to the engine speed.
 - OFF: If the actual engine speed is lower than the arbitrarily set engine speed, which is 3,000 to 6,300 rpm set by the setting function of information display, by 500 rpm or more, the up-shift warning lamp is turned OFF.

Also, while the up-shift indicator (green) is blinking or illuminated, if the actual engine speed becomes lower than the arbitrarily set engine speed by 600 rpm or more, the up-shift warning lamp is turned OFF.
 - Blink: If the actual engine speed is lower than the arbitrarily set engine speed by 500 rpm or more, the up-shift indicator (green) is blinked.
 - ON: When the actual engine speed exceeds the arbitrarily set engine speed, the up-shift indicator (green) is illuminated.

Also, while the up-shift indicator (green) is blinking or illuminated, if the actual engine speed becomes lower than the arbitrarily set engine speed by 100 rpm or more, the up-shift indicator is blinked.

UP-SHIFT INDICATOR (YELLOW)

The up-shift indicator (yellow) is turned ON/OFF according to the engine speed.

- OFF: When the engine speed is less than 6,300 rpm, the up-shift indicator (yellow) does not illuminate.

Also, while the up-shift indicator (yellow) is illuminated, when the engine speed becomes 6,200 rpm or lower, the up-shift indicator (yellow) is turned OFF.
- ON: When the engine speed becomes 6,300 rpm or more, the up-shift indicator (yellow) is illuminated.

UP-SHIFT INDICATOR (RED)

The up-shift indicator (red) is turned ON/OFF according to the engine speed.

- OFF: When the engine speed is less than 6,800 rpm, the up-shift indicator (red) does not illuminate.

METER SYSTEM

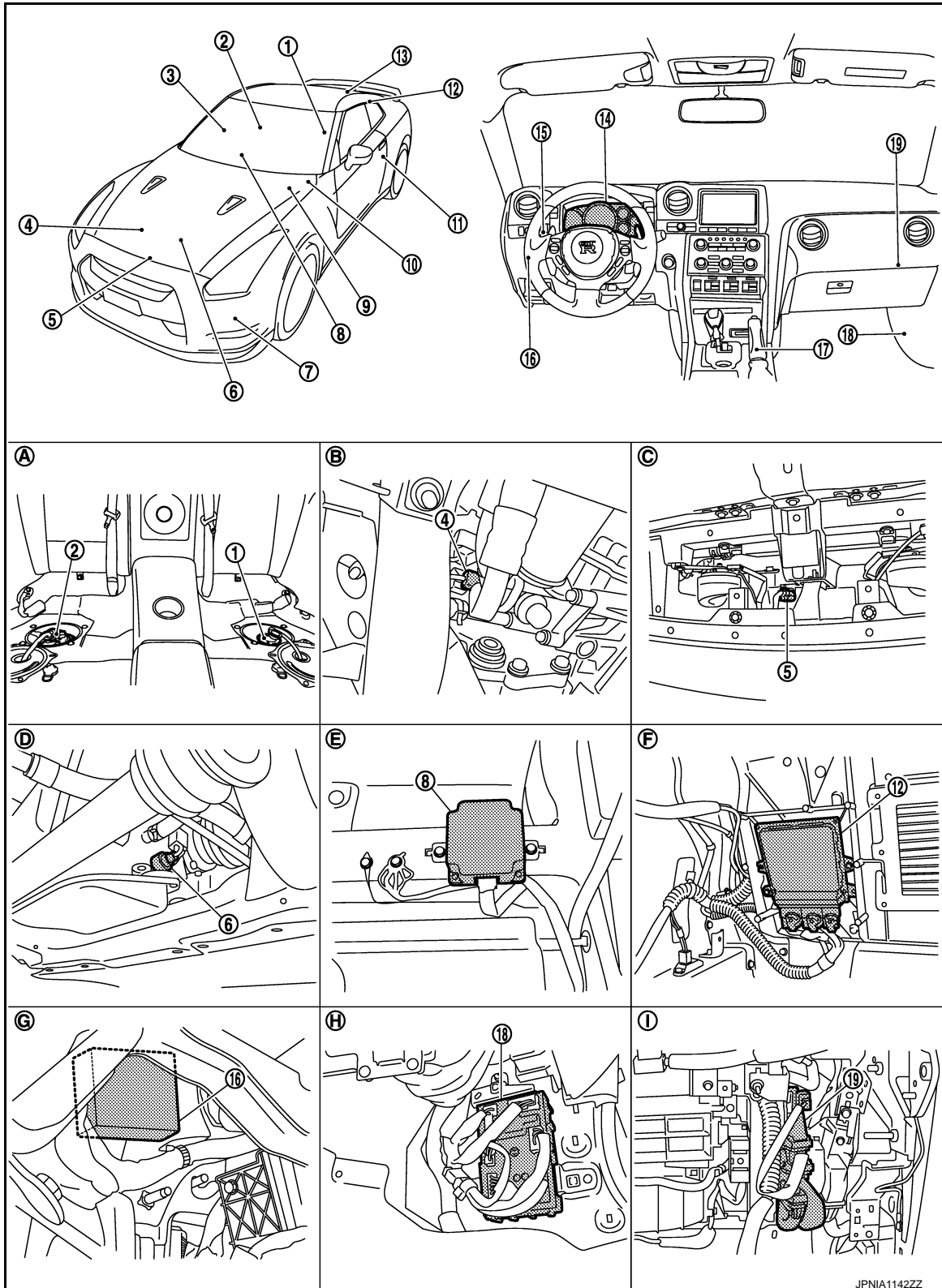
< SYSTEM DESCRIPTION >

Also, while the up-shift indicator (red) is illuminated, when the engine speed becomes 6,700 rpm or lower, the up-shift indicator (red) is turned OFF.

- ON: When the engine speed becomes 6,800 rpm or more, the up-shift indicator (red) is illuminated.

UP-SHIFT INDICATOR : Component Parts Location

INFOID:000000009189332



JPNIA1142ZZ

METER SYSTEM

< SYSTEM DESCRIPTION >

1. Fuel level sensor unit (Sub)	2. Fuel level sensor unit (Main)	3. Door switch (passenger side)	A
4. Oil pressure sensor	5. Ambient sensor	6. Oil level sensor	
7. Washer level switch	8. AWD control unit	9. Brake fluid level switch	B
10. ABS actuator and electric unit (control unit)	11. Door switch (driver side)	12. TCM	
13. Trunk switch	14. Combination meter	15. Combination switch (Lighting switch)	C
16. Low tire pressure warning control unit	17. Parking brake	18. BCM	
19. ECM			
A. Under rear seat	B. Right side of engine	C. Radiator core support (center)	D
D. Oil pan LH upper	E. Front RH seat under	F. Trunk room left back	
G. Lower instrument panel LH	H. Dashboard side lower (passenger seat side)	I. Glove box assembly back	E

UP-SHIFT INDICATOR : Component Description

INFOID:000000009189333

Unit	Description
Combination meter	Using the signals received from each unit and switch, controls the shift position indicator.
ECM	Transmits the engine speed signal to the combination meter via CAN communication.
TCM	Transmits the shift position signal (manual mode range) to the combination meter via CAN communication.
Meter control switch	Transmits the following signals to the combination meter. <ul style="list-style-type: none"> • Enter switch signal • Select switch signal

MWI

DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (METER)

Diagnosis Description

INFOID:000000009189334

SELF-DIAGNOSIS MODE

Using the self-diagnosis mode function, the combination meter can check the drive circuit of each meter (speedometer, tachometer, engine coolant temperature gauge, and fuel gauge), dot matrix (odo/trip meter, information display), and the LCD function of segment (shift position indicator).

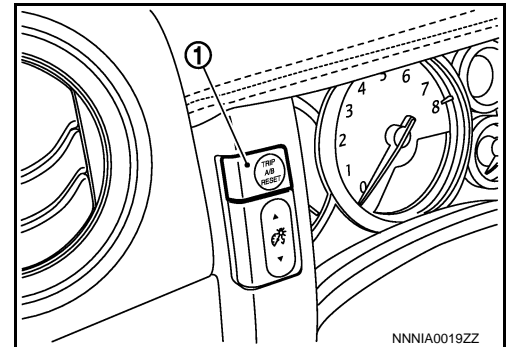
OPERATION PROCEDURE

1. Turn the ignition switch ON, and switch the tripmeter to "trip A" or "trip B".

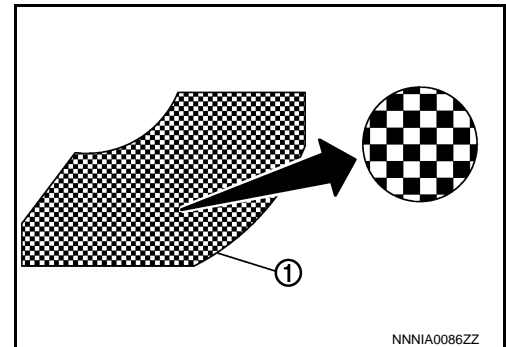
NOTE:

If the diagnosis function is activated with "trip A" displayed, the mileage on "trip A" is reset to "0000.0".
(The same way for "trip B".)

2. Turn the ignition switch OFF.
3. While pressing the trip A/B reset switch (1), turn the ignition switch ON again.
4. Check that the tripmeter displays "0000.0".
5. Press the trip A/B reset switch at least 3 times (within 7 seconds after the ignition switch is turned ON).



6. The combination meter self-diagnosis mode starts.
 - On the information display (1), the dots of the dot matrix blink alternately.
 - Pointers of speedometer, tachometer, and engine coolant temperature gauge return to zero, and all of the segments of shift position indicator illuminate.



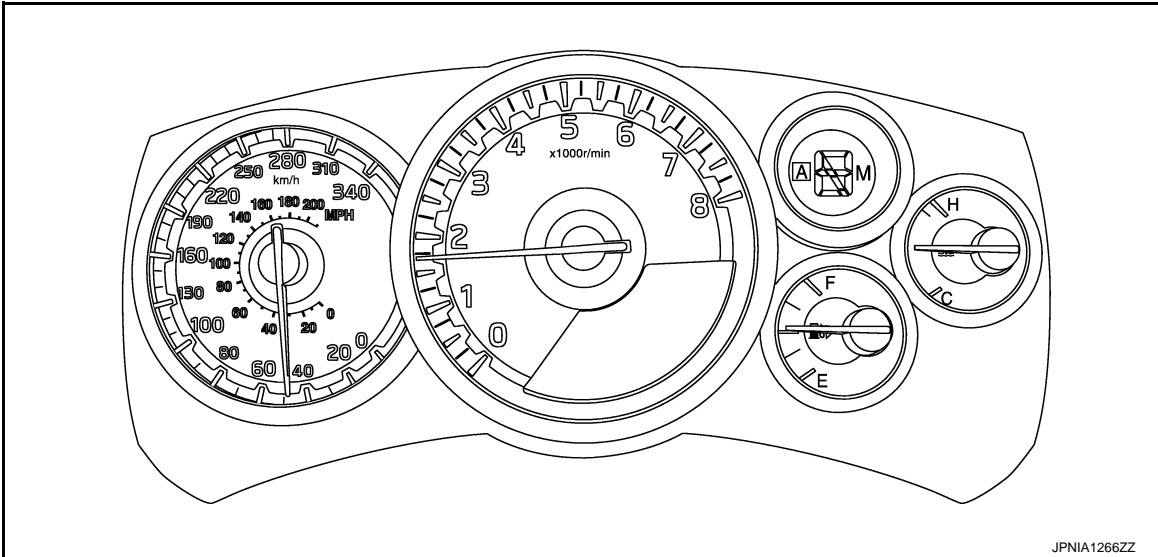
NOTE:

- If the self diagnosis mode of combination meter does not start, check the combination meter power supply and ground circuit. When everything is normal, replace the combination meter.
- If any section of the dot matrix on information display or of the segment in shift position indicator does not illuminate, replace the combination meter.

DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

7. When the trip A/B reset switch is pressed, (while the trip A/B reset switch is pressed) each meter operates.



NOTE:

If any meter does not operate, replace the combination meter.
The figure is reference.

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MWI

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:000000009189335

1.CHECK FUSES

Check that the following fuses are not blown:

Power source	Fuse No.
Battery	11
Ignition switch ON or START	4

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fuse with a new one after repairing the applicable circuit.

2.CHECK POWER SUPPLY CIRCUIT

Check the voltage between the combination meter harness connector terminals and the ground.

Terminal No.	Signal name	Ignition switch	Voltage
1	Battery power supply	OFF	Battery voltage
2	Ignition signal	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harness between the fuse and the combination meter.

3.CHECK GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the combination meter connector.
3. Check for continuity between the combination meter harness connector terminals and the ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	3		Existed
	5		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

FUEL LEVEL SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FUEL LEVEL SENSOR SIGNAL CIRCUIT

Description

INFOID:000000009189336

Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel level sensor signal to the combination meter.

Diagnosis Procedure

INFOID:000000009189337

1.CHECK FUEL LEVEL SENSOR UNIT (SUB) CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the connectors of combination meter and fuel level sensor unit (sub).
3. Check for continuity between the combination meter harness connector and the fuel level sensor unit (sub) harness connector.

Combination meter		Fuel level sensor unit (sub)		Continuity
Connector	Terminal	Connector	Terminal	
M53	38	B27	1	Existed

4. Check for continuity between the combination meter harness connector and the ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	38		Not existed

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK FUEL LEVEL SENSOR UNIT (MAIN-SUB) CIRCUIT

1. Disconnect fuel level sensor unit and fuel pump (main) connector.
2. Check for continuity between the fuel level sensor unit (sub) harness connector and the fuel level sensor unit and fuel pump (main) harness connector.

Fuel level sensor unit (sub)		Fuel level sensor unit and fuel pump (main)		Continuity
Connector	Terminal	Connector	Terminal	
B27	2	B225	2	Existed

3. Check for continuity between the fuel level sensor unit (sub) harness connector and the ground.

Fuel level sensor unit (sub)		Ground	Continuity
Connector	Terminal		
B27	2		Not existed

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP (MAIN) CIRCUIT

1. Check for continuity between the fuel level sensor unit and fuel pump (main) harness connector and the combination meter harness connector.

Fuel level sensor unit and fuel pump (main)		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B225	3	M53	18	Existed

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FUEL LEVEL SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

2. Check for continuity between the fuel level sensor unit and fuel pump (main) harness connector and the ground.

Fuel level sensor unit and fuel pump (main)		Ground	Continuity
Connector	Terminal		
B225	3		Not existed

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-68. "Removal and Installation"](#).
- NO >> Repair the harnesses or connectors.

METER CONTROL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

METER CONTROL SWITCH SIGNAL CIRCUIT

Description

INFOID:000000009189338

Transmits the following signals to the combination meter.



- Illumination control switch signal (+)
- Trip A/B reset switch signal
- Enter switch signal
- Illumination control switch signal (–)
- Select switch signal

Diagnosis Procedure

INFOID:000000009189339

1.CHECK METER CONTROL SWITCH INPUT SIGNAL

1. Turn the ignition switch ON.
2. Measure voltage between the following terminals of the combination meter.

Terminal No.	Condition	Voltage (Approx.)
23 – 6	When  switch is pressed	0 V
	Other than the above	5 V
24 – 6	When  switch is pressed	0 V
	Other than the above	5 V
25 – 6	When trip A/B reset switch is pressed	0 V
	Other than the above	5 V
26 – 6	When enter switch is pressed	0 V
	Other than the above	5 V
27 – 6	When select switch is pressed	0 V
	Other than the above	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK METER CONTROL SWITCH SIGNAL CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the connectors of combination meter and meter control switch.
3. Check for continuity between the combination meter harness connector terminal and the meter control switch harness connector.

Combination meter		Meter control switch		Continuity
Connector	Terminal	Connector	Terminal	
M53	6	M54	2	Existed
	23		3	
	24		1	
	25		8	
	26		6	
	27		7	

4. Check for continuity between the combination meter harness connector and the ground.

METER CONTROL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Combination meter			Continuity
Connector	Terminal		
M53	6	Ground	Not existed
	23		
	24		
	25		
	26		
	27		

Is the inspection result normal?

YES >> INSPECTION END



NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009189340

1. UNIT INSPECTION OF METER CONTROL SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the meter control switch connector.
3. Check the continuity of meter control switch.

Terminal No.		Operation and status	Continuity
6	2	Press the enter switch	Existed
		Other than the above	Not existed
7	2	Press the select switch	Existed
		Other than the above	Not existed
8	2	Press the trip A/B reset switch.	Existed
		Other than the above	Not existed
3	2	Press the  switch	Existed
		Other than the above	Not existed
1	2	Press the  switch	Existed
		Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the meter control switch.

OIL PRESSURE SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

OIL PRESSURE SENSOR SIGNAL CIRCUIT

Description

INFOID:000000009189341

Detects the engine oil pressure and transmits the oil pressure sensor signal to the combination meter.

Diagnosis Procedure

INFOID:000000009189342

1.CHECK OIL PRESSURE SENSOR CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the connectors of combination meter and oil pressure sensor.
3. Check for continuity between the combination meter harness connector and the oil pressure sensor harness connector.

Combination meter		Oil pressure sensor		Continuity
Connector	Terminal	Connector	Terminal	
M53	34	E255	1	Existed
M53	35	E255	2	Existed
M53	14	E255	3	Existed

4. Check for continuity between the combination meter harness connector and the ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	34		Not existed
M53	35		Not existed
M53	14		Not existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009189343

1.CHECK OIL PRESSURE SENSOR

Check the voltage between the combination meter terminal 35 and the ground.

Condition	Measuring condition	Voltage (V)
Engine stop	Ignition switch ON	Approx. 1
Engine running	Oil pressure is at 500 kPa	Approx. 3

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace the oil pressure switch.

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Description

INFOID:000000009189344

Transmits the parking brake switch signal to the combination meter.

Diagnosis Procedure

INFOID:000000009189345

1.CHECK COMBINATION METER INPUT SIGNAL

1. Turn the ignition switch ON.
2. Check the voltage between the combination meter harness connector and the ground.

Probe		Measuring condition	Voltage (Approx.)
(+)	(-)		
Combination meter			
Connector	Terminal	Parking brake operated	0 V
M53	31	Parking brake released	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the connectors of combination meter and parking brake switch.
3. Check for continuity between the combination meter harness connector and the parking brake switch harness connector.

Combination meter		Parking brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M53	31	M132	1	Existed

4. Check for continuity between the combination meter harness connector and the ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	31		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009189346

1.CHECK PARKING BRAKE SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the parking brake switch connector.
3. Check for continuity between the parking brake switch connector and the ground.

Parking brake switch		Measuring condition	Continuity
(+)	(-)		
1	Ground	Parking brake applied	Existed
		Parking brake released	Not exist

YES >> INSPECTION END

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the parking brake switch.

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WASHER LEVEL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

WASHER LEVEL SWITCH SIGNAL CIRCUIT

Description

INFOID:000000009189347

When the washer fluid in washer tank is less than the specified level, and washer level switch is turned ON, the washer level switch transmits the washer level switch signal to the combination meter.

Diagnosis Procedure

INFOID:000000009189348

1.CHECK COMBINATION METER INPUT SIGNAL

1. Turn the ignition switch ON.
2. Check the voltage between the combination meter harness connector and the ground.

Probe		Measuring condition	Voltage (Approx.)
(+)	(-)		
Combination meter			
Connector	Terminal	Washer level switch ON	0 V
M53	33	Washer level switch OFF	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK WASHER LEVEL SWITCH CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the connectors of combination meter and washer level switch.
3. Check for continuity between the combination meter harness connector and the washer level switch harness connector.

Combination meter		Washer level switch		Continuity
Connector	Terminal	Connector	Terminal	
M53	33	E30	1	Existed

4. Check for continuity between the combination meter harness connector and the ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	33		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

Component Inspection

INFOID:000000009189349

1.CHECK WASHER LEVEL SWITCH

1. Turn the ignition switch OFF.
2. Disconnect the washer level switch connector.
3. Check the washer level switch.

Terminal	Washer level switch	Continuity
1 - 2	ON	Existed
	OFF	Not existed

Is the inspection result normal?

YES >> INSPECTION END

WASHER LEVEL SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the washer level switch.

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A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

Description

INFOID:000000009189350

A/C auto amp. transmit the A/C auto amp. connection recognition signal to the combination meter.

Diagnosis Procedure

INFOID:000000009189351

1. CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector terminal and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
Combination meter			
Connector	Terminal	Ground	
M53	7		5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and A/C auto amp. connector.
3. Check continuity between combination meter harness connector terminal and A/C auto amp. harness connector terminal.

Combination meter		A/C auto amp.		Continuity
Connector	Terminal	Connector	terminal	
M53	7	M66	34	Existed

4. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	7		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

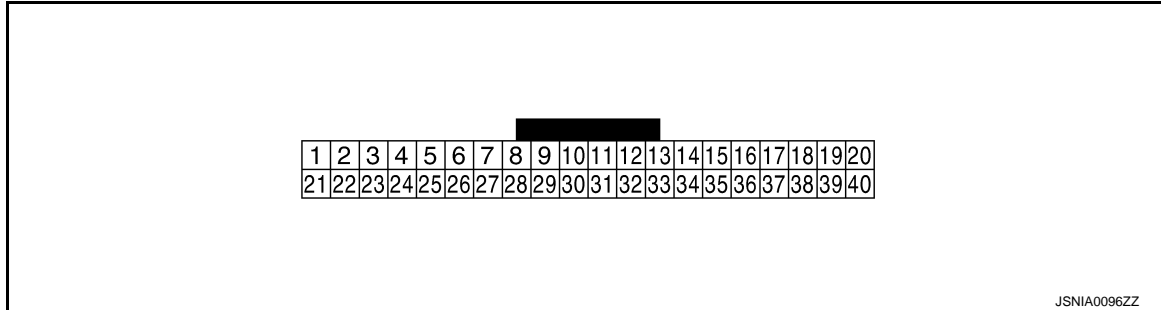
ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:000000009189352

TERMINAL LAYOUT

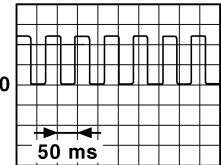
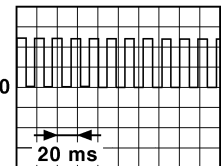



INPUT/OUTPUT SIGNAL STANDARD

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
1 (V)	Ground	Battery power supply	Input	Igni- tion switch OFF	—	Battery voltage
2 (W)	Ground	Ignition power supply	Input	Igni- tion switch ON	—	Battery voltage
3 (B)	Ground	Ground	—	Igni- tion switch ON	—	0 V
5 (B)	Ground	Ground	—	Igni- tion switch ON	—	0 V
6 (W)	Ground	Meter control switch ground	—	Igni- tion switch ON	—	0 V
7 (Y)	Ground	A/C auto amp. connection recognition signal	Input	Igni- tion switch ON	—	5 V
8 (SB)	Ground	Ambient sensor ground	—	Igni- tion switch ON	—	0 V
9 (P)	Ground	Ambient sensor	Input	Igni- tion switch ON	—	This work is recommended to be performed by NHPC.


COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
12 (L)	Ground	Vehicle speed signal (2-pulse)	Output	Ignition switch ON	Vehicle speed is approximately 40 km/h (25 MPH)	NOTE: The maximum voltage varies depending on the specification (destination unit).  <small>JSNIA0015GB</small>
13 (V)	Ground	Vehicle speed signal (8-pulse)	Output	Ignition switch ON	Vehicle speed is approximately 40 km/h (25 MPH)	NOTE: The maximum voltage varies depending on the specification (destination unit).  <small>JSNIA0012GB</small>
14 (B)	Ground	Oil pressure sensor ground	—	Ignition switch ON	—	0 V
15 (R)	Ground	Air bag signal	Input	Ignition switch ON	Air bag warning lamp ON	5 V
					Air bag warning lamp OFF	0 V
18 (L)	Ground	Fuel level sensor signal ground	—	Ignition switch ON	—	0 V
19 (R)	Ground	Oil level sensor ground	—	Ignition switch ON	—	0 V
20 (W)	Ground	Oil level sensor signal	Input	Ignition switch ON	—	This work is recommended to be performed by NHPC.
21 (L)	Ground	CAN-H	—	Ignition switch ON	—	—
22 (P)	Ground	CAN-L	—	Ignition switch ON	—	—
23 (LG)	6 (W)	Illumination control switch signal (–)	Input	Ignition switch ON	When  switch is pressed	0 V
					Other than the above	5 V

COMBINATION METER

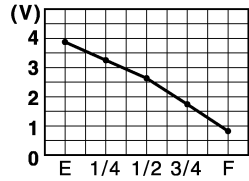
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
24 (BR)	6 (W)	Illumination control switch signal (+)	Input	Igni- tion switch ON	When  switch is pressed	0 V
					Other than the above	5 V
25 (G)	6 (W)	Trip A/B reset switch signal	Input	Igni- tion switch ON	When trip A/B reset switch is pressed	0 V
					Other than the above	5 V
26 (O)	6 (W)	Enter switch signal	Input	Igni- tion switch ON	When enter switch is pressed	0 V
					Other than the above	5 V
27 (SB)	6 (W)	Select switch signal	Input	Igni- tion switch ON	When select switch is pressed	0 V
					Other than the above	5 V
28 (BR)	Ground	Alternator signal	Input	Igni- tion switch ON	Charging warning lamp ON	0 V
					Charging warning lamp OFF	12 V
29 (G)	Ground	Seat belt buckle switch sig- nal (passenger side)	Input	Igni- tion switch ON	<ul style="list-style-type: none"> • When getting in the pas- senger seat • When passenger seat belt is fastened. 	12 V
					<ul style="list-style-type: none"> • When getting in the pas- senger seat • When passenger seat belt is unfastened 	0 V
30 (LG)	Ground	Seat belt buckle switch sig- nal (driver side)	Input	Igni- tion switch ON	When driver seat belt is fastened	12 V
					When driver seat belt is unfastened	0 V
31 (V)	Ground	Parking brake switch sig- nal	Input	Igni- tion switch ON	Parking brake applied	0 V
					Parking brake released	5 V
32 (V)	Ground	Brake fluid level switch sig- nal	Input	Igni- tion switch ON	Brake fluid level is normal	0 V
					Brake fluid level is MIN lev- el or less	5 V
33 (L)	Ground	Washer level switch signal	Input	Igni- tion switch ON	Low washer fluid warning display ON	0 V
					Low washer fluid warning display OFF	5 V
34 (GR)	Ground	Oil pressure sensor power	Output	Igni- tion switch ON	—	5 V

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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >


Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
35 (W)	Ground	Oil pressure sensor signal	Input	Igni- tion switch ON	—	Refer to MWI-45, "Component Inspection" .
38 (O)	Ground	Fuel level sensor signal	Input	Igni- tion switch ON	—	 <p> (V) 4 3 2 1 0 E 1/4 1/2 3/4 F </p> <p>NNNIA0108ZZ</p>

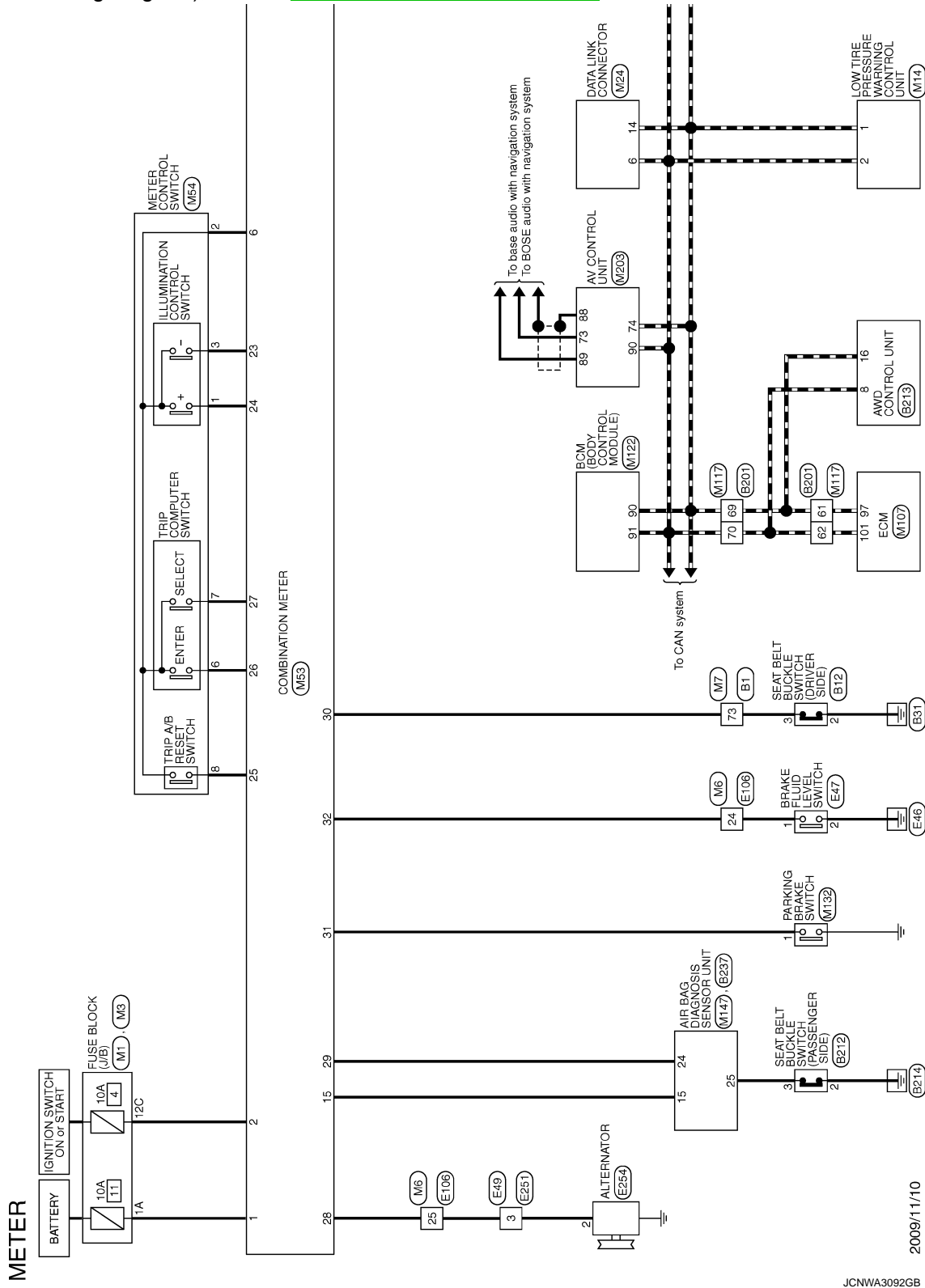
COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - METER -

INFOID:000000009189353

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12, "Connector Information"](#).

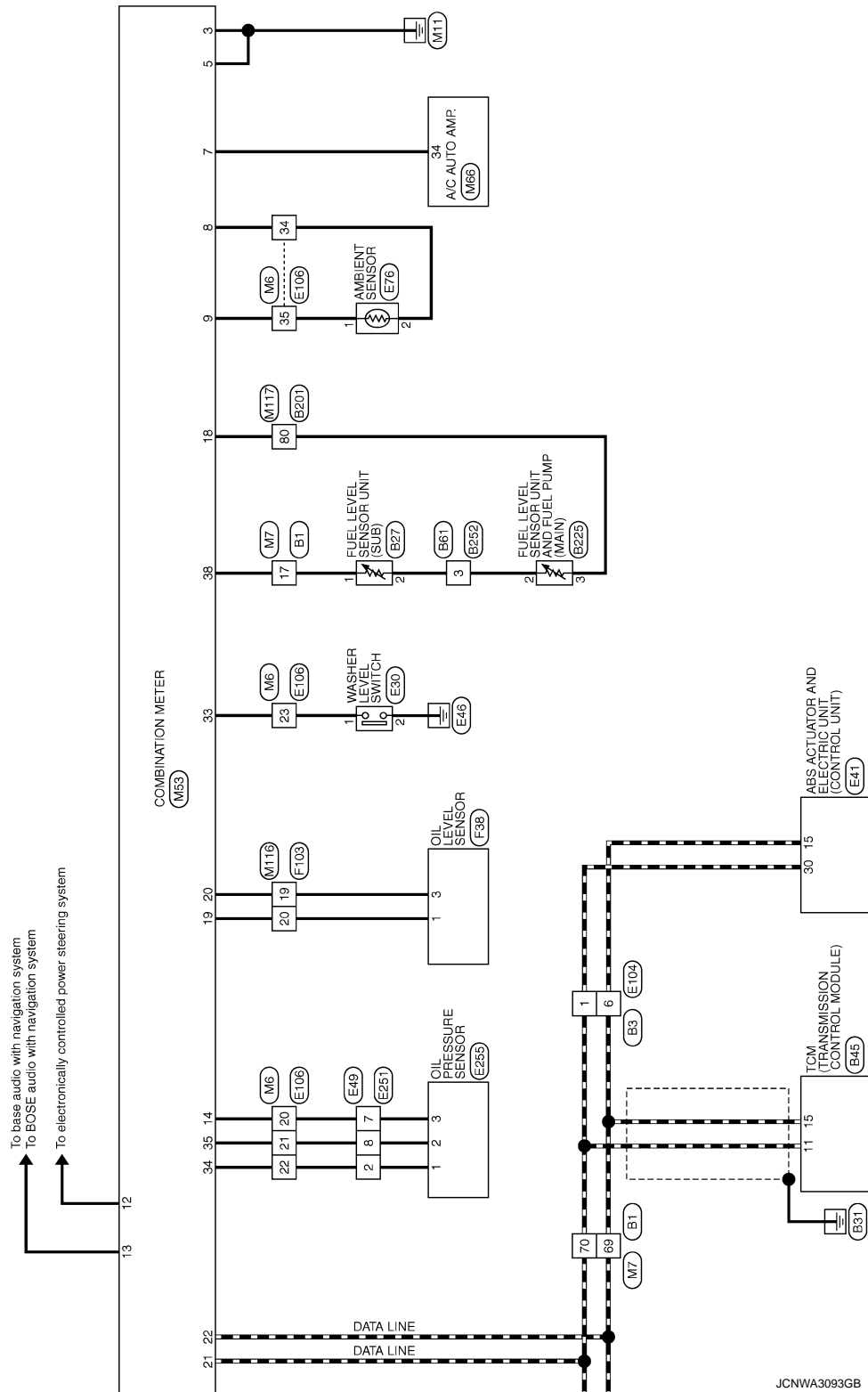


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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >



Fail-safe

INFOID:000000009189354

FAIL-SAFE

If the CAN communication with each unit is activated, the combination meter broken the fail-safe control.

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

System		Processing
Speedometer		Returns to zero when communication is blocked.
Tachometer		
Engine coolant temperature gauge		
Meter illumination control		Shifts to night mode when communication is blocked.
Shift position indicator		Turned OFF when communication is blocked.
Information display	Door open warning	Indication is turned OFF when communication is blocked.
	Trunk open warning	
	Parking brake release warning	
	Shift " P " warning	
	Transmission system check	
	Shift lever position warning	
	Transmission clutch high temperature warning	
	Transmission oil high temperature warning	
	Transmission system warning	
	Run-flat tire warning	
	Low tire pressure warning	
	Tire pressure monitoring system warning	
	AWD clutch high temperature warning	
	Front/rear tire size discrepancy warning	
	AWD system warning	
	Anti-lock braking system (ABS) warning	
	Vehicle dynamic control (VDC) system warning	
	Engine system warning	
	CRUISE control system warning	
	CRUISE control system status	
	Vehicle speed display	0 km/h (0 MPH) is indicated when communication is blocked.
	Possible driving distance	Displays the last calculation result calculated under a normal status when communication is blocked.
	Average fuel consumption	
	Instantaneous fuel consumption	
	Average vehicle speed	
Warning buzzer		Warning is turned OFF when communication is blocked.

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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

System		Processing
Warning lamp/indicator lamp	ABS warning lamp	Turned ON when communication is broken.
	VDC warning lamp	
	Brake warning lamp	
	AWD warning lamp	
	Malfunction indicator lamp (MIL)	
	Tire pressure warning lamp	Blinks first, then illuminates after approximately 1 minute.
	High beam indicator lamp	Turned OFF when communication is broken.
	Turn signal indicator lamp	
	Tail lamp indicator lamp	
	CRUISE indicator lamp	
	SET indicator lamp	
	KEY warning lamp	
	Up-shift indicator (green)	
	Up-shift indicator (yellow)	
	Up-shift indicator (red)	
	Transmission check warning lamp	
	VDC OFF indicator lamp	

THE METER CONTROL SWITCH IS INOPERATIVE

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

THE METER CONTROL SWITCH IS INOPERATIVE

Description

INFOID:000000009189357

If any of the following malfunctions are found for the meter control switch operation

- All switches are inoperative
- The specified switch cannot be operated

Diagnosis Procedure

INFOID:000000009189358

1.CHECK METER CONTROL SWITCH SIGNAL CIRCUIT

Perform the meter control switch signal circuit inspection. Refer to [MWI-43. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2.CHECK METER CONTROL SWITCH

Perform the unit inspection of meter control switch. Refer to [MWI-44. "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace the meter control switch.

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THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON OR OFF

< SYMPTOM DIAGNOSIS >

THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON OR OFF

Description

INFOID:000000009189359

Oil pressure warning lamp does not illuminate when ignition switch turns ON, or oil pressure warning lamp stays illuminated while engine is running (when oil pressure is normal).

Diagnosis Procedure

INFOID:000000009189360

1.CHECK COMBINATION METER INPUT SIGNAL

Connect CONSULT, and perform the combination meter input signal inspection. (This work is recommended to be performed by NHPC.)

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> GO TO 2.

2.CHECK OIL PRESSURE SENSOR SIGNAL CIRCUIT

Perform the oil pressure sensor signal circuit inspection. Refer to [MWI-45, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK OIL PRESSURE SENSOR

Perform the unit inspection of oil pressure sensor. Refer to [MWI-45, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace the oil pressure sensor.

THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:000000009189361

- The parking brake warning is displayed during vehicle travel even though the parking brake is released
- The parking brake warning is not displayed even though the vehicle is being driven with the parking brake applied

Diagnosis Procedure

INFOID:000000009189362

1.BRAKE WARNING LAMP OPERATION CHECK

1. Start the engine.
2. Operate the parking brake, then check the illumination status of brake warning lamp.

Parking brake applied	:ON
Parking brake released	:OFF

Is the inspection result normal?

- YES >> Replace the combination meter.
NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

Perform the parking brake switch signal circuit inspection. Refer to [MWI-46, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK PARKING BRAKE SWITCH

Perform the unit inspection of parking brake switch. Refer to [MWI-46, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace the combination meter.
NO >> Replace the parking brake switch.

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THE LOW WASHER FLUID WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

THE LOW WASHER FLUID WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description

INFOID:000000009189363

- Low washer fluid warning is still displayed even after washer fluid is added.
- Low washer fluid warning is not displayed even when washer fluid is not filled.

Diagnosis Procedure

INFOID:000000009189364

1.CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

Check the washer level switch signal circuit. Refer to [MWI-48. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2.CHECK WASHER LEVEL SWITCH COMPONENT PARTS

Perform the inspection of washer level switch component parts. Refer to [MWI-48. "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace the washer level switch. Refer to [WW-17. "Removal and Installation"](#).

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

< SYMPTOM DIAGNOSIS >

THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

Description

INFOID:000000009189365

- The displayed ambient air temperature is higher than the actual temperature.
- The displayed ambient air temperature is lower than the actual temperature.

Diagnosis Procedure

INFOID:000000009189366

NOTE:

Before starting diagnosis, check if the symptom is applicable to the "Symptom by normal operation". Refer to [MWI-64, "INFORMATION DISPLAY : Description"](#).

1.CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

Perform the A/C auto amp. connection recognition signal circuit inspection. Refer to [MWI-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2.CHECK AMBIENT SENSOR SIGNAL CIRCUIT

Perform the ambient sensor signal circuit inspection. (This work is recommended to be performed by NHPC.)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK AMBIENT SENSOR

Perform the unit inspection of ambient sensor. (This work is recommended to be performed by NHPC.)

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace the ambient sensor.

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION INFORMATION DISPLAY

INFORMATION DISPLAY : Description

INFOID:000000009189367

OIL LEVEL DISPLAY

After mounting/removing of battery or combination meter, the combination meter power supply is cut off temporarily. Therefore, the engine oil amount data may be erased from the combination meter, causing the oil level to be not displayed. Refer to [MWI-26, "INFORMATION DISPLAY : System Description"](#) for the condition that the combination meter reads the resistance of oil level sensor.

AMBIENT AIR TEMPERATURE

For the ambient air temperature display, the value is displayed on the information display after the signal from ambient sensor is corrected by the combination meter. Therefore, the indication value may not match the actual ambient air temperature. Refer to [MWI-26, "INFORMATION DISPLAY : System Description"](#) for details on the correction process.

POSSIBLE DRIVING DISTANCE

The calculated distance to empty may differ from the actual distance to empty if the refueling amount is approximately 15 ℓ (4 US gal, 3-1/4 Imp gal) or less. This is because the refuel control (moves the fuel gauge needle quicker than normal judging that the driver is refueling the vehicle) is not performed in such a case.

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Working Range at a Regular Dealership

INFOID:000000009189368

CAUTION:

The service items unmentioned on this manual are recommended to be performed by a GT-R certified NISSAN dealer. Because those service items require special equipment and a GT-R certified technical staff who completed special training.

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

INFOID:000000009189369

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 "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution for Battery Service

INFOID:000000009189370

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

PREPARATION

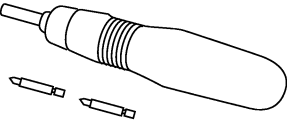
< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000009189371

Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening screws</p>

COMBINATION METER

< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

COMBINATION METER

Exploded View

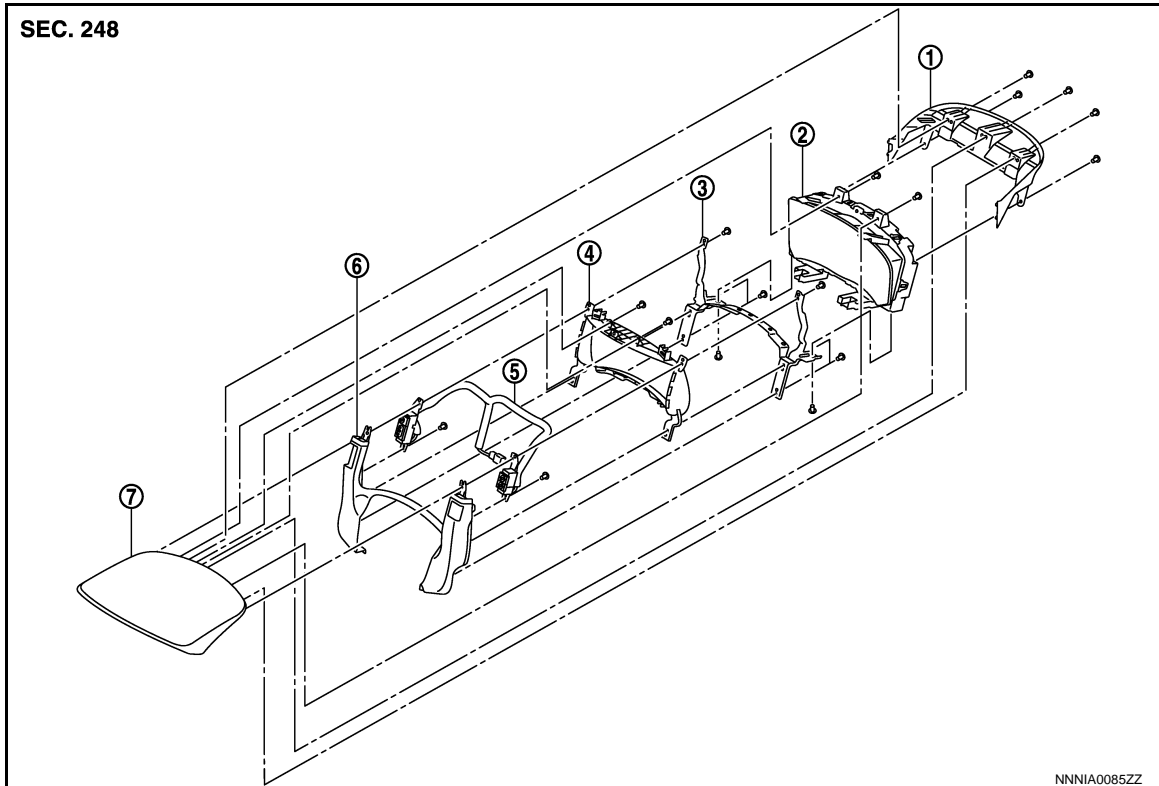
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REMOVAL

Cluster Lid A

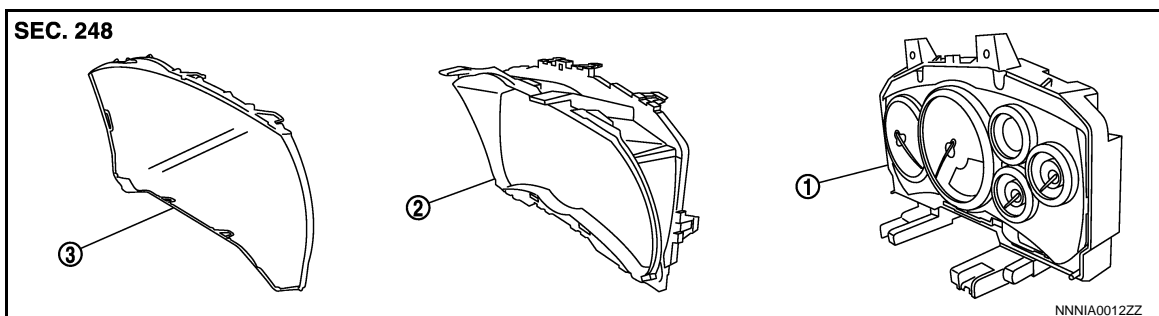
Refer to [IP-12, "Exploded View"](#).

Combination Meter



- | | | |
|------------------------------|-------------------------|------------------------------|
| 1. Cluster lid A rear cover | 2. Combination meter | 3. Bracket |
| 4. Meter housing | 5. Meter control switch | 6. Cluster lid A under cover |
| 7. Cluster lid A front cover | | |

DISASSEMBLY



- | | | |
|--------------------------------|------------------|----------------|
| 1. Meter control unit assembly | 2. Upper housing | 3. Front cover |
|--------------------------------|------------------|----------------|

COMBINATION METER

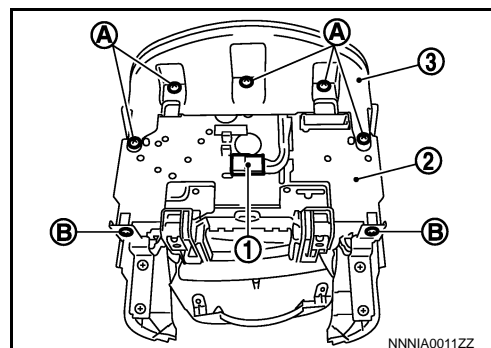
< REMOVAL AND INSTALLATION >

Removal and Installation

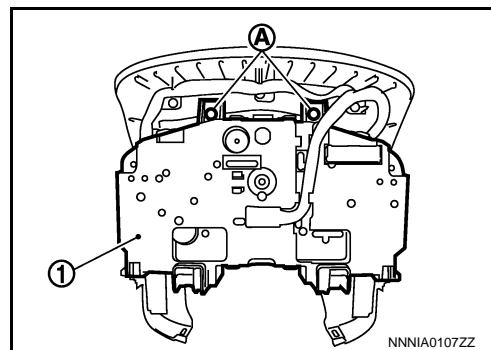
INFOID:000000009189373

REMOVAL

1. Remove the cluster lid A from the vehicle. Refer to [IP-13. "Removal and Installation"](#).
2. Remove the meter control switch connector (1) from the combination meter (2).
3. Remove the screws (A), and then remove the cluster lid A rear cover (3).
4. Remove screws (B).



5. Remove the screws (A), and then remove the combination meter (1).



INSTALLATION

Install in the reverse order of removal.

Disassembly and Assembly

INFOID:000000009189374

DISASSEMBLY

1. Remove the tabs, and then remove the upper housing.
2. Remove the tabs, and then remove the front cover.

ASSEMBLY

Assemble the reverse order of disassembly.

METER CONTROL SWITCH

< REMOVAL AND INSTALLATION >

METER CONTROL SWITCH

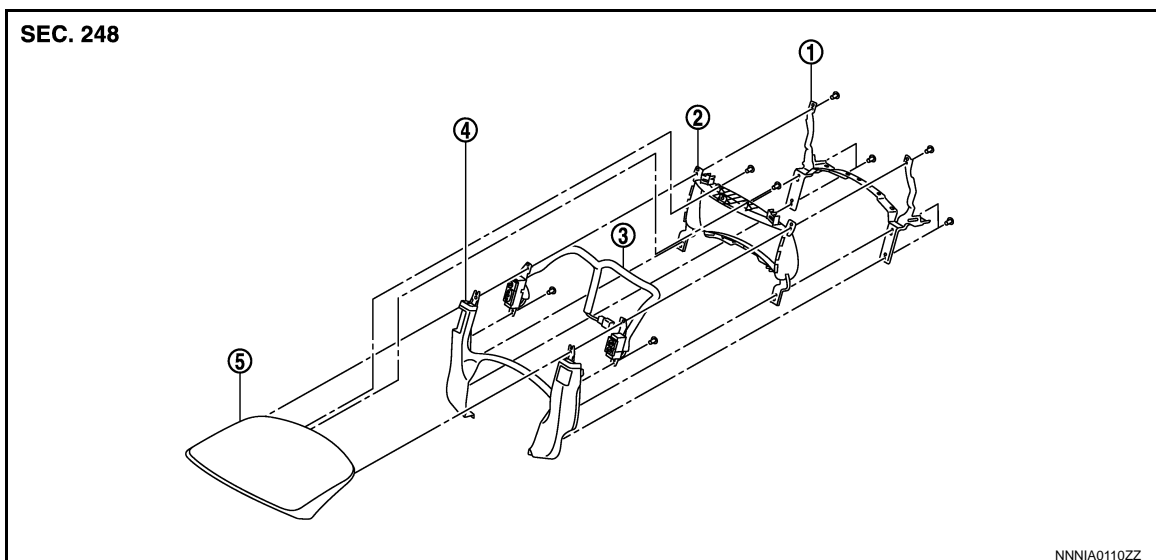
Exploded View

INFOID:000000009189375

REMOVAL

Refer to [IP-12. "Exploded View"](#).

DISASSEMBLY

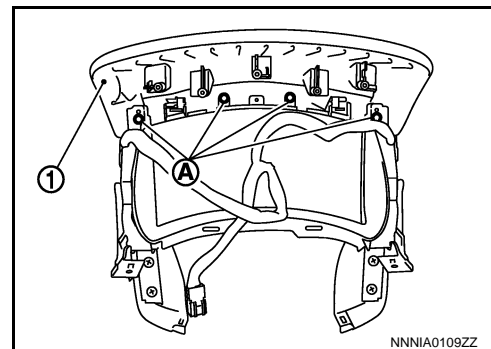


Removal and Installation

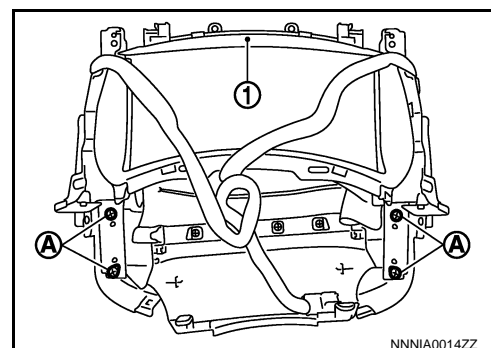
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REMOVAL

1. Remove the combination meter.
2. Remove the screws (A), and then remove the cluster lid A front cover (1).



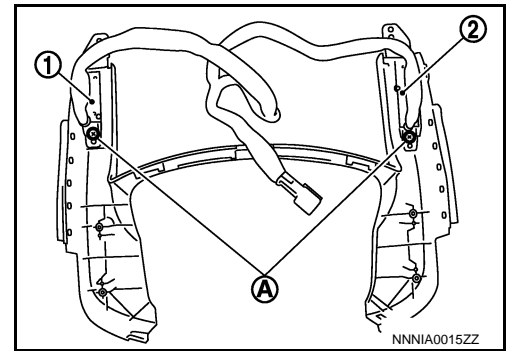
3. Remove the screws (A), and then remove the bracket and meter housing (1).



METER CONTROL SWITCH

< REMOVAL AND INSTALLATION >

4. Remove the screws (A), and then remove the drive computer switch (1), illumination control switch, and trip A/B reset switch (2).



INSTALLATION

Install in the reverse order of removal.