

# SECTION **ACS**

## AUTO CRUISE CONTROL SYSTEM

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# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

[ASCD]

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## AUTOMATIC SPEED CONTROL DEVICE (ASCD)

PPF:18930

### Description

AKS007XN

Regarding the information for ASCD system, refer to [EC-36, "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\)"](#) (VQ35DE), [EC-727, "AUTOMATIC SPEED CONTROL DEVICE \(ASCD\)"](#) (VK45DE).

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**PRECAUTIONS**

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**Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”**

AKS00FCX

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 and SB section of this Service Manual.

**WARNING:**

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

**Precautions for ICC System Service**

AKS00C88

- Do not look straight into the laser beam discharger when adjusting laser beam aiming.
- Turn the MAIN switch OFF in conditions similar to driving, such like Free rollers or a chassis dynamometer.
- Do not use the ICC sensor removing from vehicle, disassemble, or remodel the sensor.
- Erase DTC when replacing parts of ICC system, then check the operation of ICC system after adjusting laser beam aiming if necessary.

# PREPARATION

[ICC]

## PREPARATION

PPF:00002

### Special Service Tools

AKS00C8A

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

| Tool number<br>(Kent - Moore No.)<br>Tool name | Description                  |
|--|------------------------------|
| KV99110100<br>(J-45718)<br>ICC target board    | Laser beam aiming adjustment |



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**DESCRIPTION**

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**Outline**

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

**VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE**

Vehicle-to-vehicle distance control mode, the driver can maintain the same speed as other vehicles without the constant need to adjust the set speed as you would with a normal cruise control system.

The system is intended to enhance the operation of the vehicle when following the vehicle traveling in the same lane and direction.

If the distance sensor detects a slower moving vehicle ahead, the system will reduce speed so that the vehicle ahead can be followed at the selected distance.

The system automatically controls the throttle and applies the brakes (up to 25% of vehicle braking power) if necessary.

The detection range of the sensor is approximately 390 ft (120 m) ahead.

Refer to Owner's Manual for Intelligent Cruise Control System operating instructions.

**CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE**

Conventional (fixed speed) cruise control mode is cruising at preset speeds.

Refer to Owner's Manual for Intelligent Cruise Control System operating instructions.

**BRAKE ASSIST (WITH PREVIEW FUNCTION)**

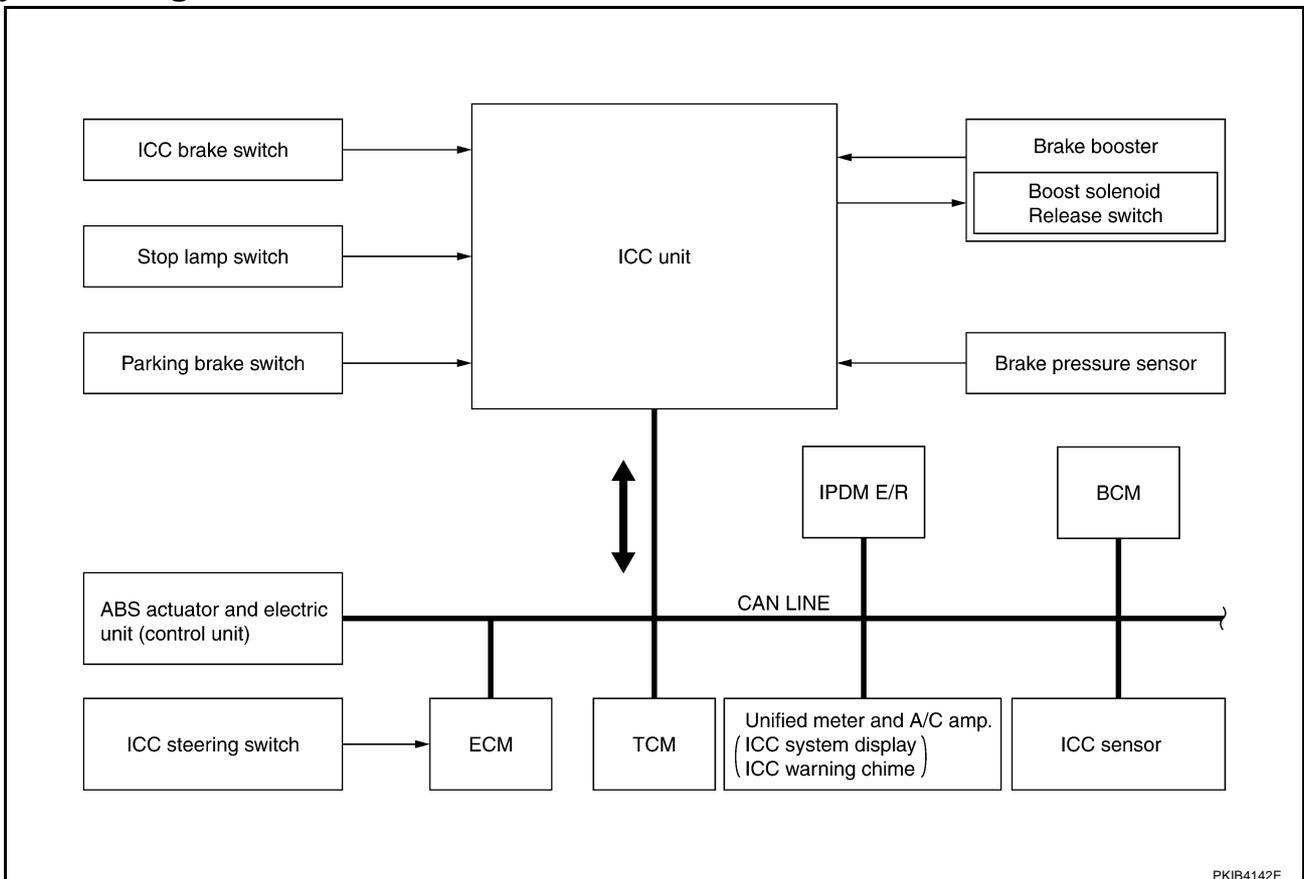
When the force applied to brake pedal exceeds a certain level, the Brake Assist is activated and generates a greater braking force than that of a conventional brake booster even with light pedal force.

When the Preview Function identifies the need to apply the sudden brake by sensing the vehicle ahead in the same lane and the distance and relative speed from it, it applies the brake pre-pressure before driver depress the brake pedal and improves brake response by reducing its free play.

Refer to Owner's Manual for BRAKE ASSIST (WITH PREVIEW FUNCTION) operating instructions.

**System Diagram**

AKS00C8C



**Components Description**

AKS00C8D

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

**CAN Communication**

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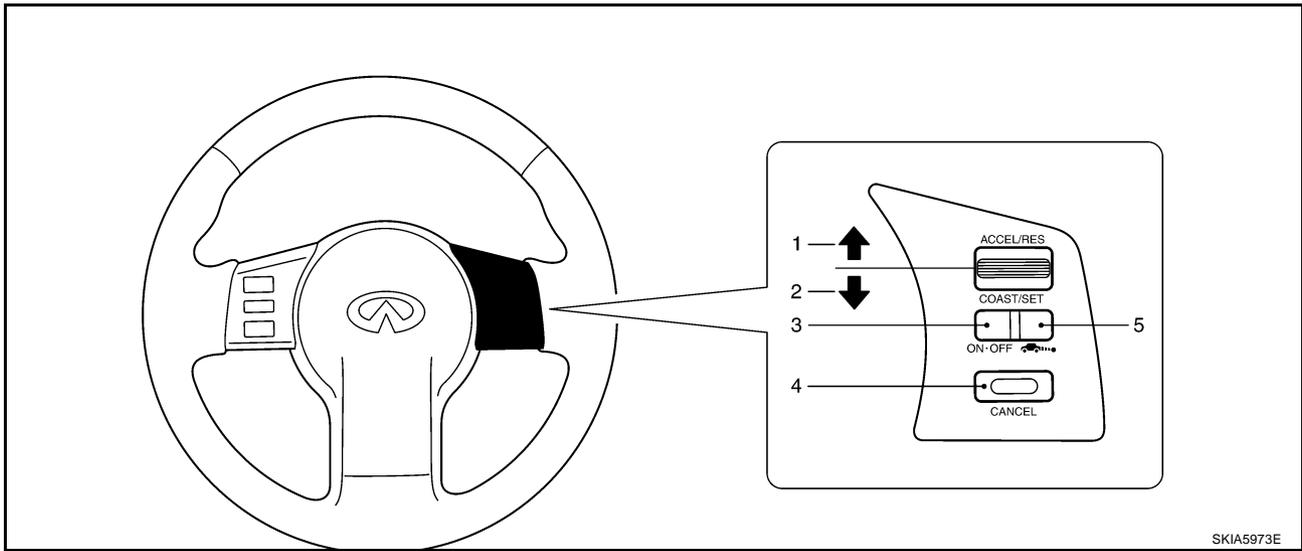
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electric control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

**CAN COMMUNICATION UNIT**

Refer to [LAN-30, "CAN Communication Unit"](#) .

**Switch Operation**

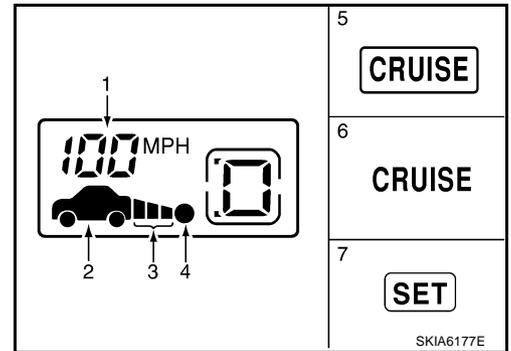
The system is operated by MAIN switch and four control switches, all mounted on the steering wheel.



SKIA5973E

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

**ICC System Display**



SKIA6177E

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

**ACTION TEST****ICC System Running Test  
VEHICLE-TO-VEHICLE DISTANCE CONTROL MODE****Set Checking**

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

**NOTE:**

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

**Check For Increase Of Cruising Speed**

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

**NOTE:**

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

**Check For Decrease Of Cruising Speed**

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

**NOTE:**

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

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

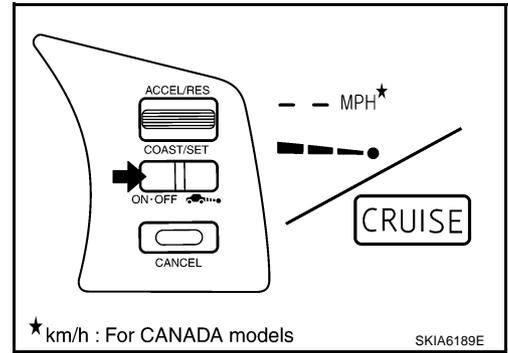
1. When the brake pedal is depressed after the system is turned ON.
2. When the selector lever is shifted into other than "D" including manual shift.
3. When the MAIN switch is turned OFF.
4. When CANCEL switch is operated.

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

1. Cancel the system by depressing the foot brake. Then, check that the speed before cancellation is restored when pressing RESUME/ACCELERATE switch with 25 MPH (40 km/h for CANADA models) or above.
2. Cancel the system by shifting the selector lever into other than "D". Then, check if the speed set before the cancellation is restored when RESUME/ACCELERATE switch is pressed.
3. Check if the speed previously set is restored when RESUME/ACCELERATE switch is operated with driving 25 MPH (40 km/h for CANADA models), after canceling vehicle-to-vehicle distance control mode by operating the CANCEL switch.

## Check For MAIN Switch

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



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

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

## Check For Distance Switch

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

**NOTE:**

The set distance indicator shows (Long) immediately after the engine starts.

| Distance | Display                   | Approximate distance at 60 MPH (100 km/h) [ft (m)] |
|----------|---------------------------|--|
| Long     | 60 <sup>MPH</sup><br>■■■■ | 195 (60)   |
| Middle   | 60 <sup>MPH</sup><br>■■■  | 130 (40)   |
| Short    | 60 <sup>MPH</sup><br>■■   | 90 (30)  |

SKIA6178E

## CONVENTIONAL (FIXED SPEED) CRUISE CONTROL MODE

### Set Checking

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

**NOTE:**

ICC system display in the combination meter shows nothing.

**Check For Increase Of Cruising Speed**

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

**NOTE:**

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

**Check For Decrease Of Cruising Speed**

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

**NOTE:**

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

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

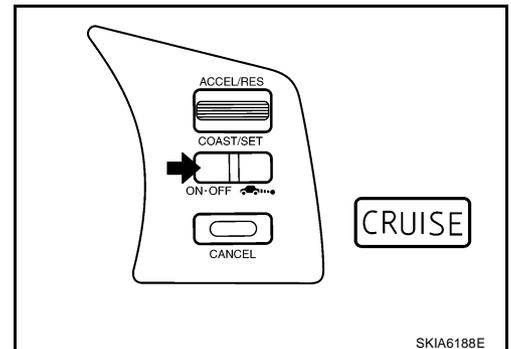
Refer to [ACS-9, "Check For Cancellation Of Vehicle-To-Vehicle Distance Control Mode \(Normal Driving Condition\) In The Following Cases:"](#) .

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

Refer to [ACS-9, "Check For Restoring Speed That Is Set By Vehicle-To-Vehicle Distance Control Mode Before Cancellation"](#) .

**Check For MAIN Switch**

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

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

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

## LASER BEAM AIMING ADJUSTMENT

### Outline

AKS006YI

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

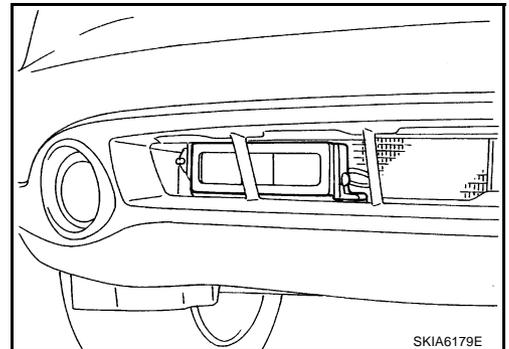
#### CAUTION:

- Place the vehicle on the level ground when the laser beam aiming adjustment is operated.
- Follow the CONSULT-II when adjusting the laser beam aiming (laser beam aiming adjustment cannot be operated without CONSULT-II).

### Preparation

AKS006YJ

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



### Outline of Adjustment Procedure

AKS006YK

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

### Setting the ICC Target Board

AKS006YL

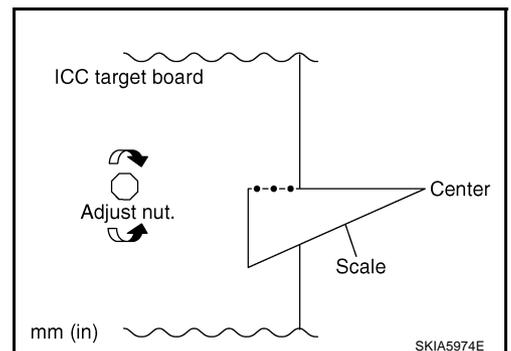
Accurate ICC target board setting is required for the laser beam aiming adjustment.

#### CAUTION:

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

### ADJUSTING HEIGHT OF THE TARGET

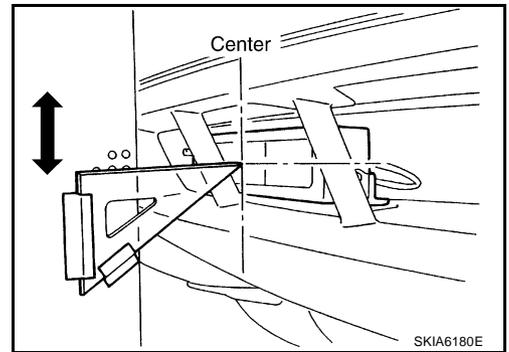
1. Attach a triangle scale at the center.



# LASER BEAM AIMING ADJUSTMENT

[ICC]

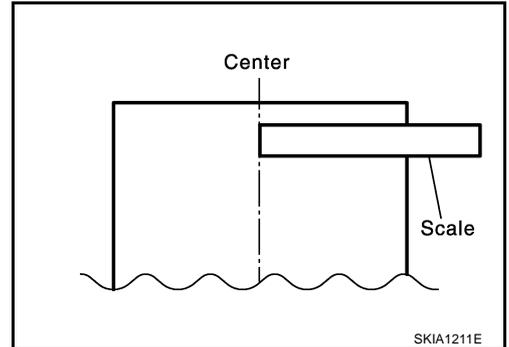
2. Adjust the height of the target board stand so that the point of the triangle aims the center of the ICC sensor.



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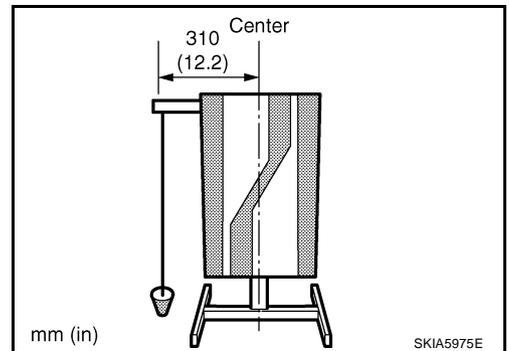
## ADJUSTING THE RIGHT-LEFT POSITION OF THE TARGET

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



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

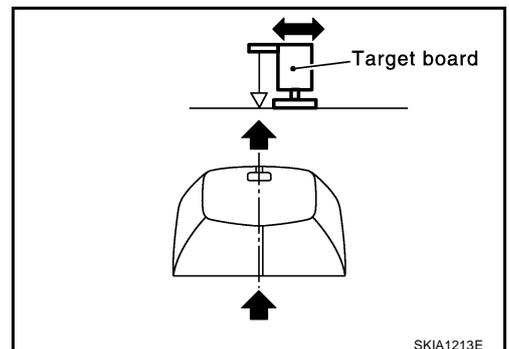


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ACS

## SETTING THE TARGET

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



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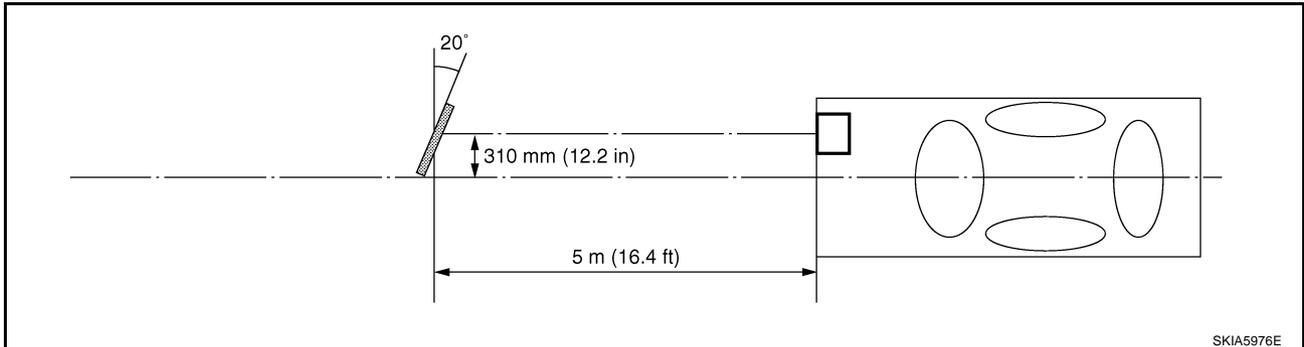
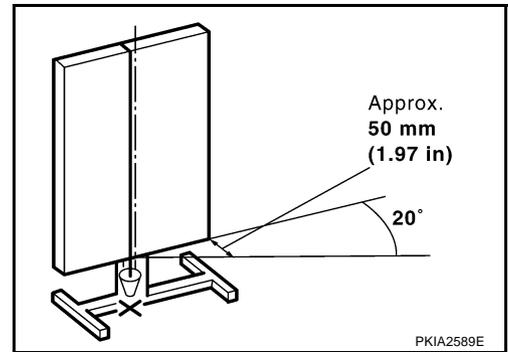
# LASER BEAM AIMING ADJUSTMENT

[ICC]

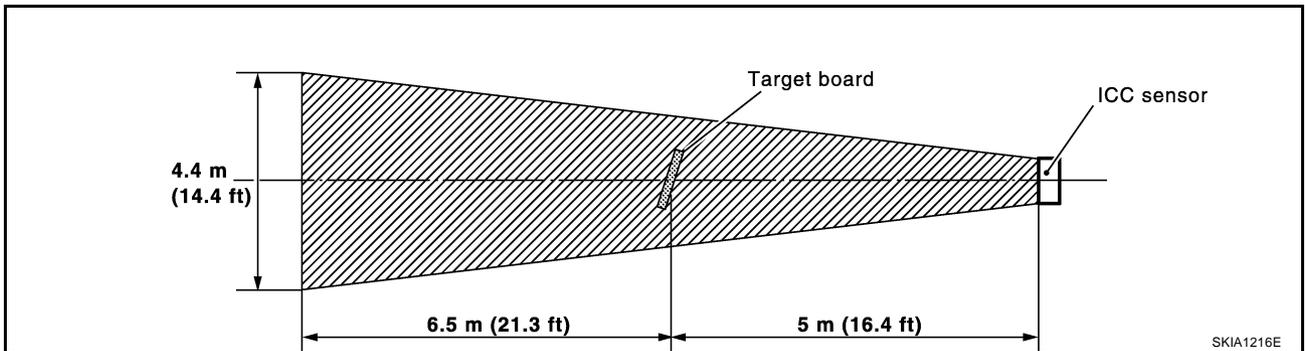
5. Pivot the edge of the target board 20° to either side.

**NOTE:**

Approx. 50 mm (1.97 in) shift rates the 20° movement.



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



**NOTE:**

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

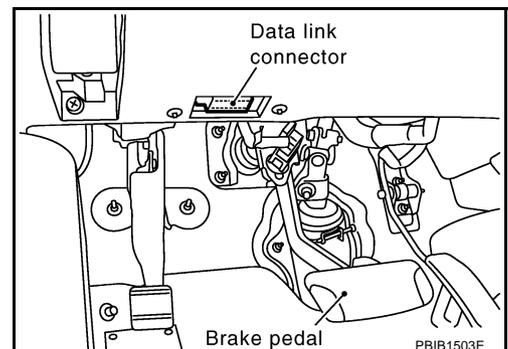
## Aiming Adjustment

AKS006YM

**CAUTION:**

- Complete all necessary work for laser beam adjustment until the adjustment completes as shown in the procedure. If the procedure does not complete, the ICC system is inoperable.
- If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

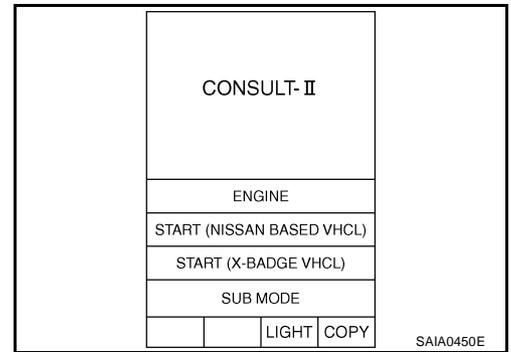
1. Turn ignition switch OFF.
2. Connect CONSULT-II and CONSULT-II CONVERTER on the data link connector.



# LASER BEAM AIMING ADJUSTMENT

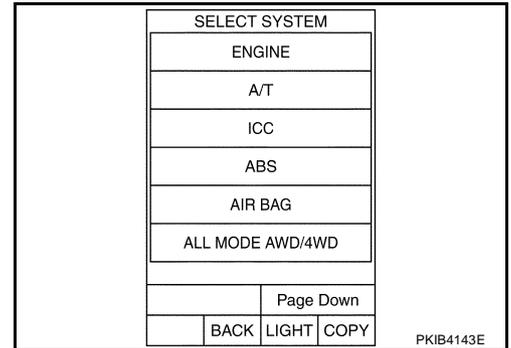
[ICC]

- Start the engine, wait for at least 10 seconds, and touch "START (NISSAN BASED VHCL)".



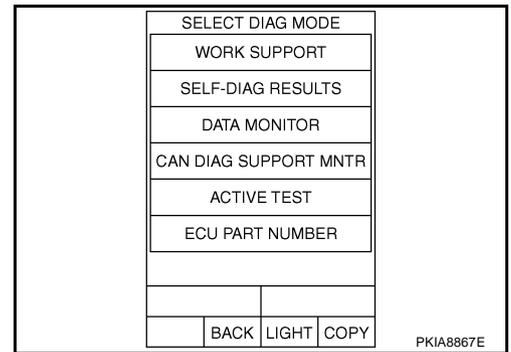
A  
B  
C  
D

- Touch "ICC".  
If "ICC" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



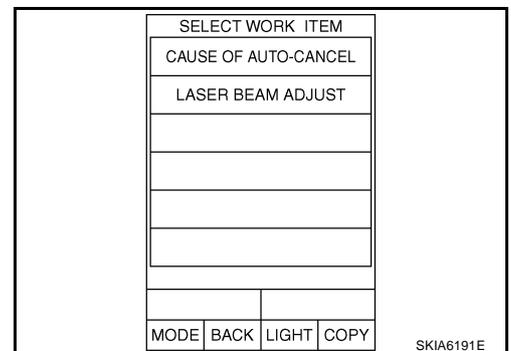
E  
F  
G

- Touch "WORK SUPPORT".



H  
I  
J

- Touch "LASER BEAM ADJUST".



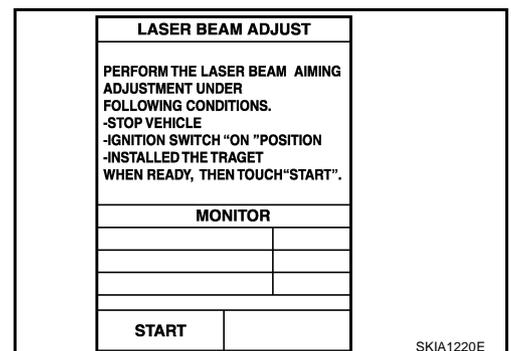
ACS  
L  
M

- Touch "START".

**CAUTION:**

If the adjustment screen does not appear on the CONSULT-II screen in 10 seconds. After touching "LASER BEAM ADJUST" screen, the following causes may be considered:

- Target is not set accurately.
- There is not enough space beside the target.
- Deformation of vehicle or the surrounding equipment unit, bracket, or the surrounding equipment is causing inappropriate installation of sensor and aiming may be set out of the adjustable range.







# ELECTRICAL UNITS LOCATION

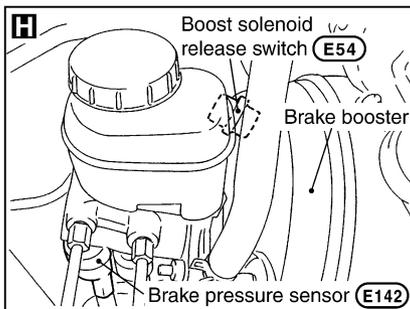
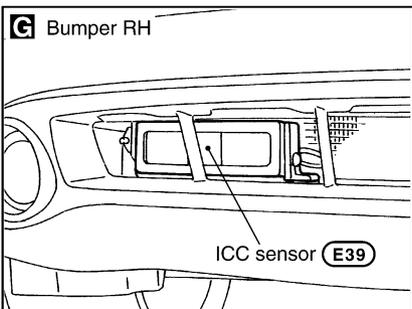
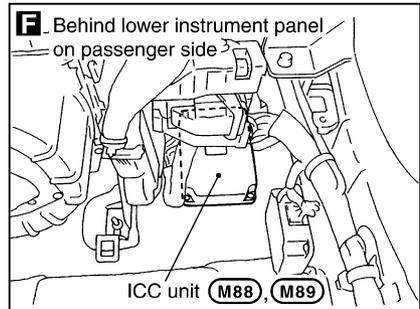
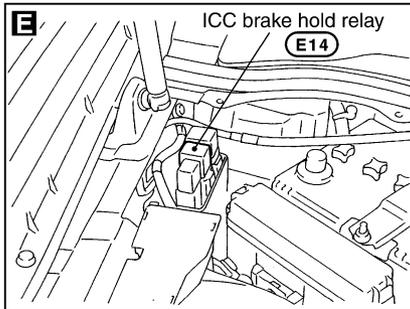
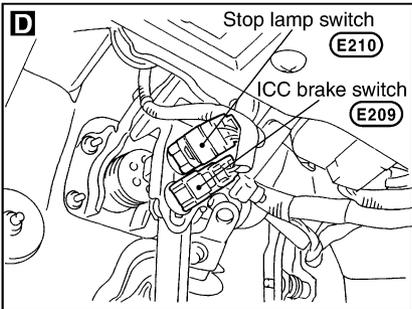
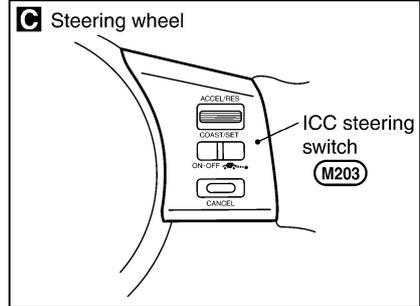
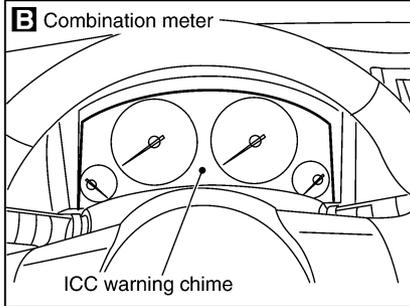
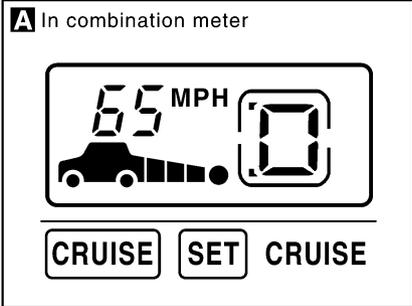
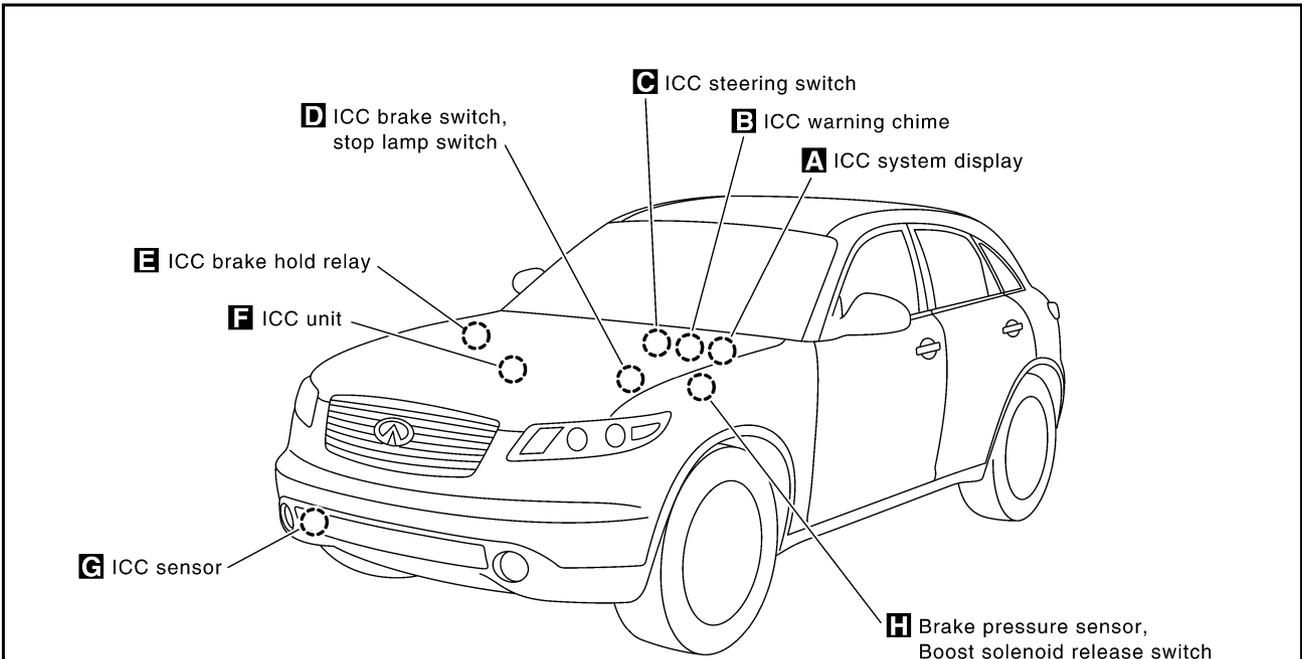
[ICC]

## ELECTRICAL UNITS LOCATION

PFP:25230

### Component Parts and Harness Connector Location

AKS006YN



PKIB4162E

# WIRING DIAGRAM

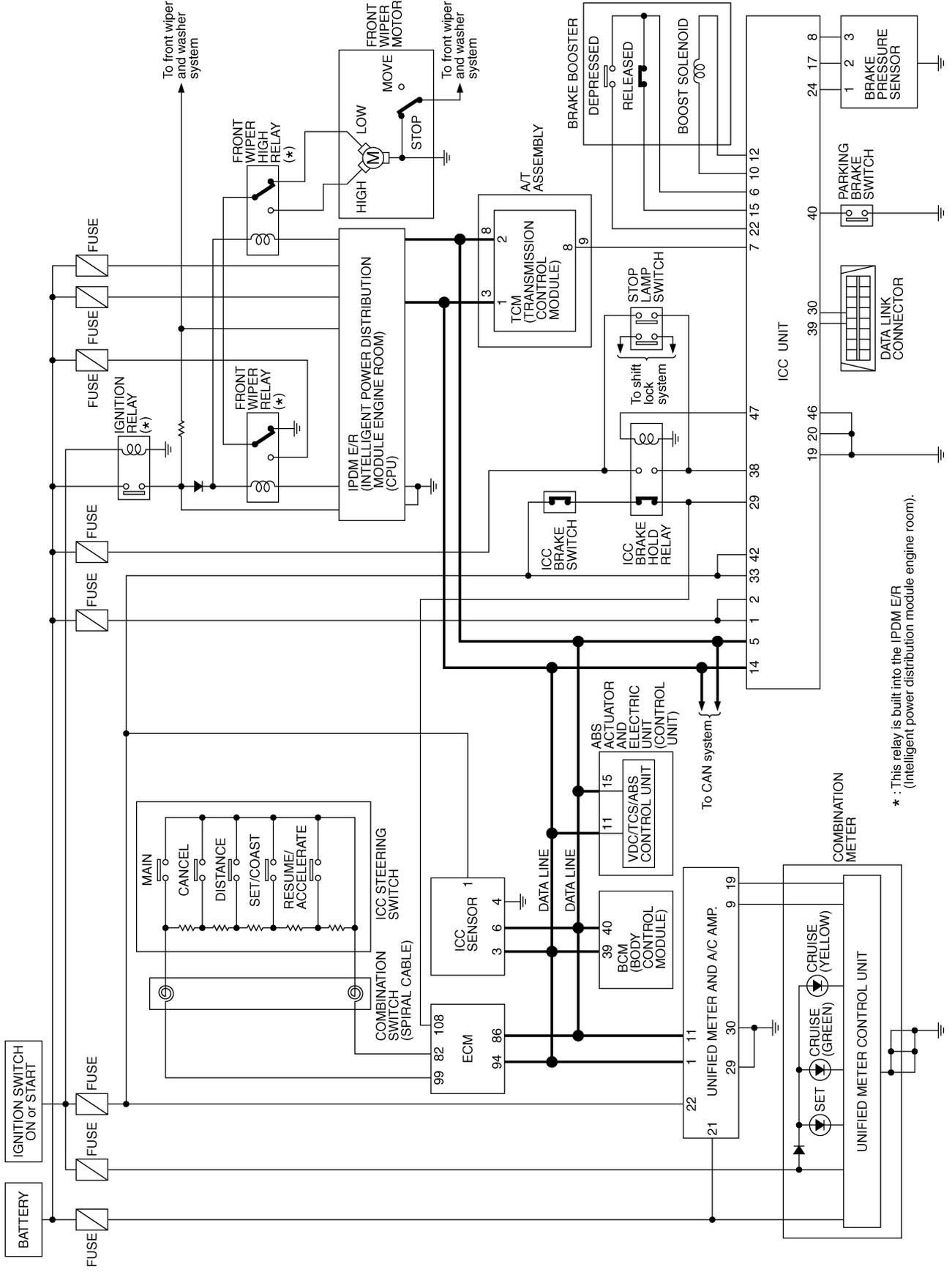
[ICC]

## WIRING DIAGRAM

PFP:00000

### Schematic

AKS006YO



\* : This relay is built into the IPDM E/R  
(Intelligent power distribution module engine room).

A  
B  
C  
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ACS

# WIRING DIAGRAM

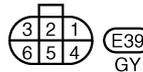
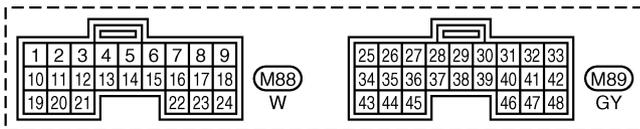
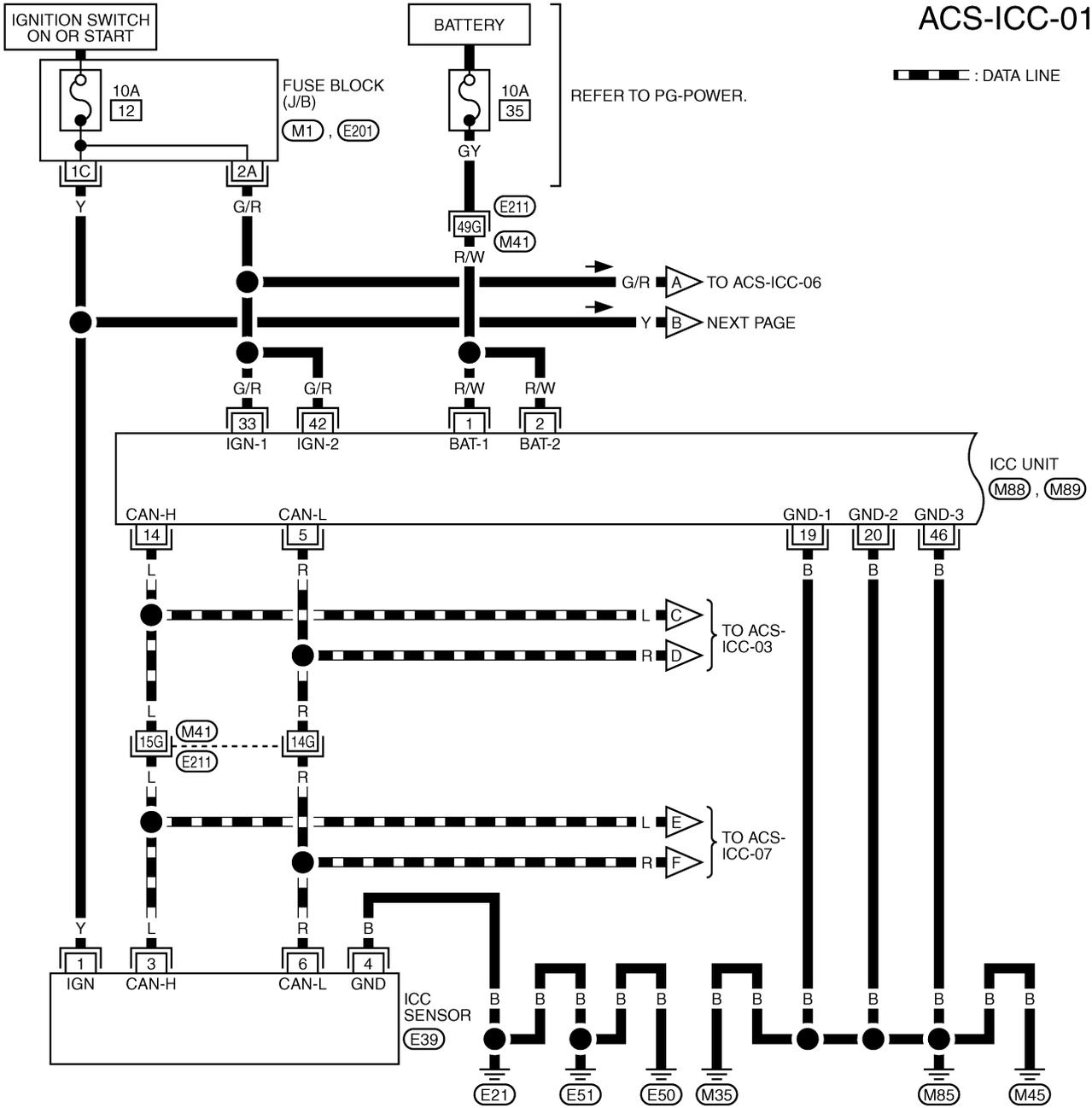
[ICC]

## Wiring Diagram — ICC —

AKS007WA

ACS-ICC-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

- (E21) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (E201) -FUSE BLOCK-JUNCTION BOX (J/B)

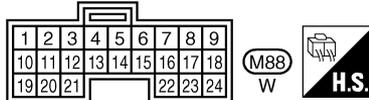
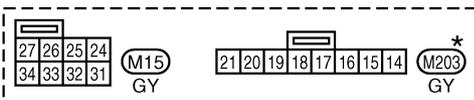
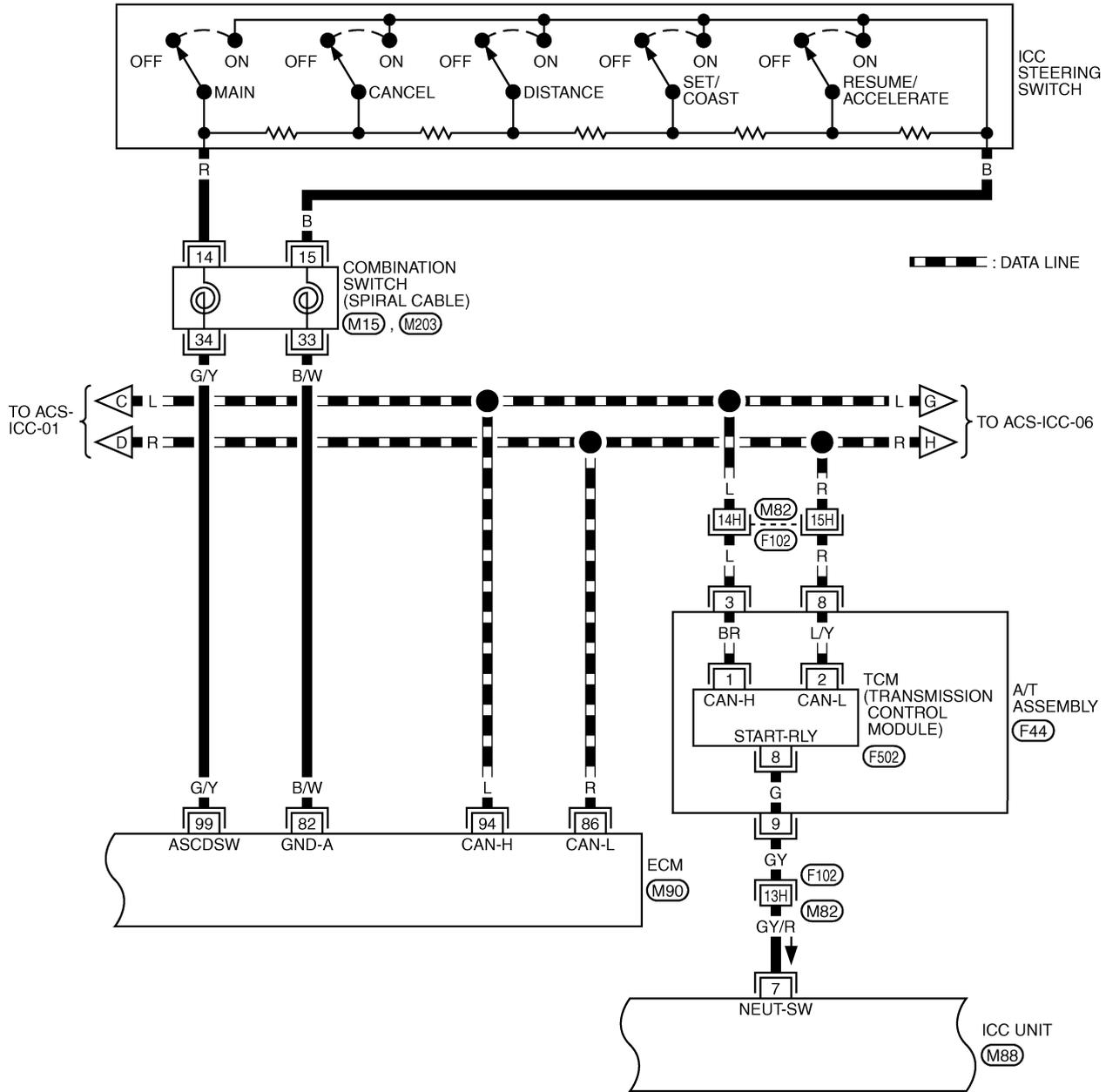
TKWM0648E



# WIRING DIAGRAM

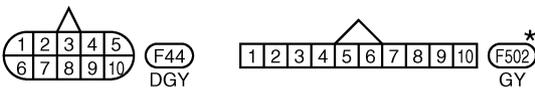
[ICC]

ACS-ICC-03



REFER TO THE FOLLOWING.

- (F102) -SUPER MULTIPLE JUNCTION (SMJ)
- (M90) -ELECTRICAL UNITS



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

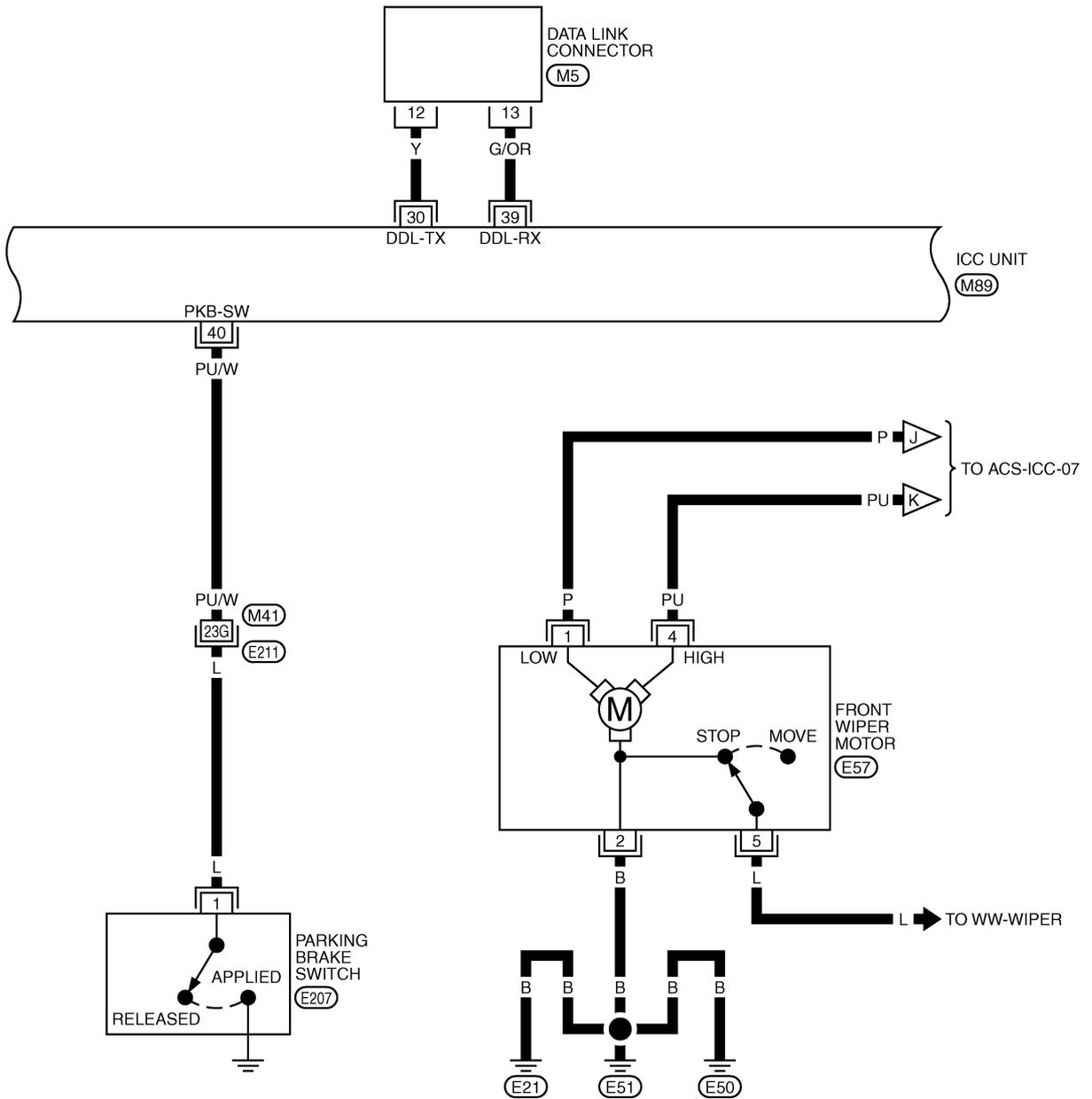
TKWM2068E

# WIRING DIAGRAM

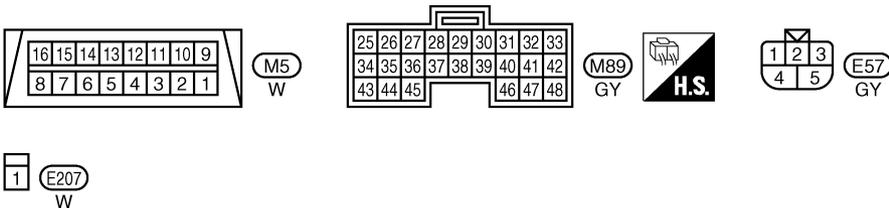
[ICC]

ACS-ICC-04

A  
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ACS



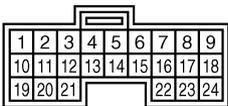
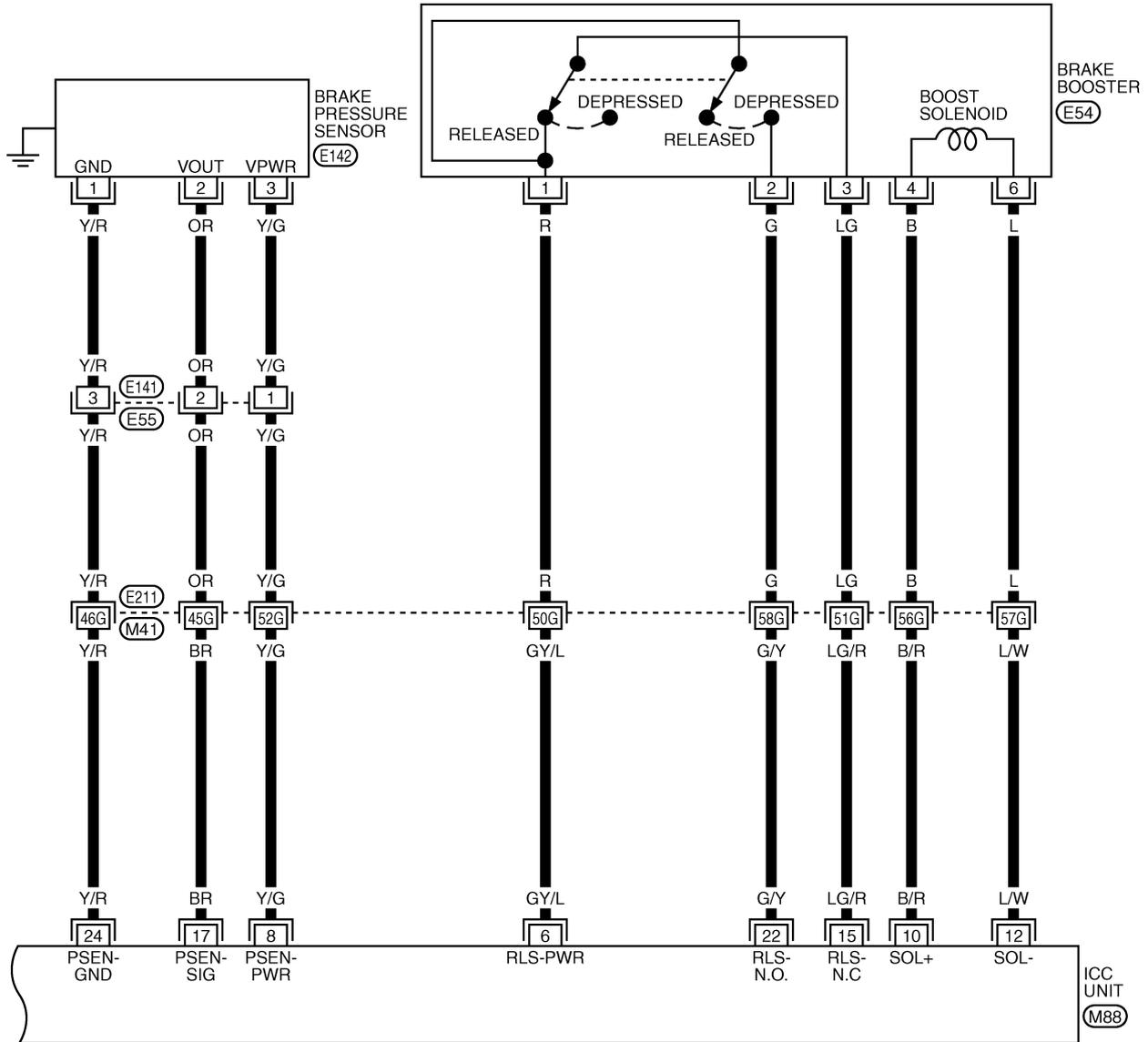
REFER TO THE FOLLOWING.  
**(E211)** -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0651E

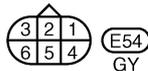
# WIRING DIAGRAM

[ICC]

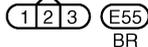
ACS-ICC-05



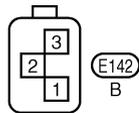
M88  
W



E54  
GY



E55  
BR



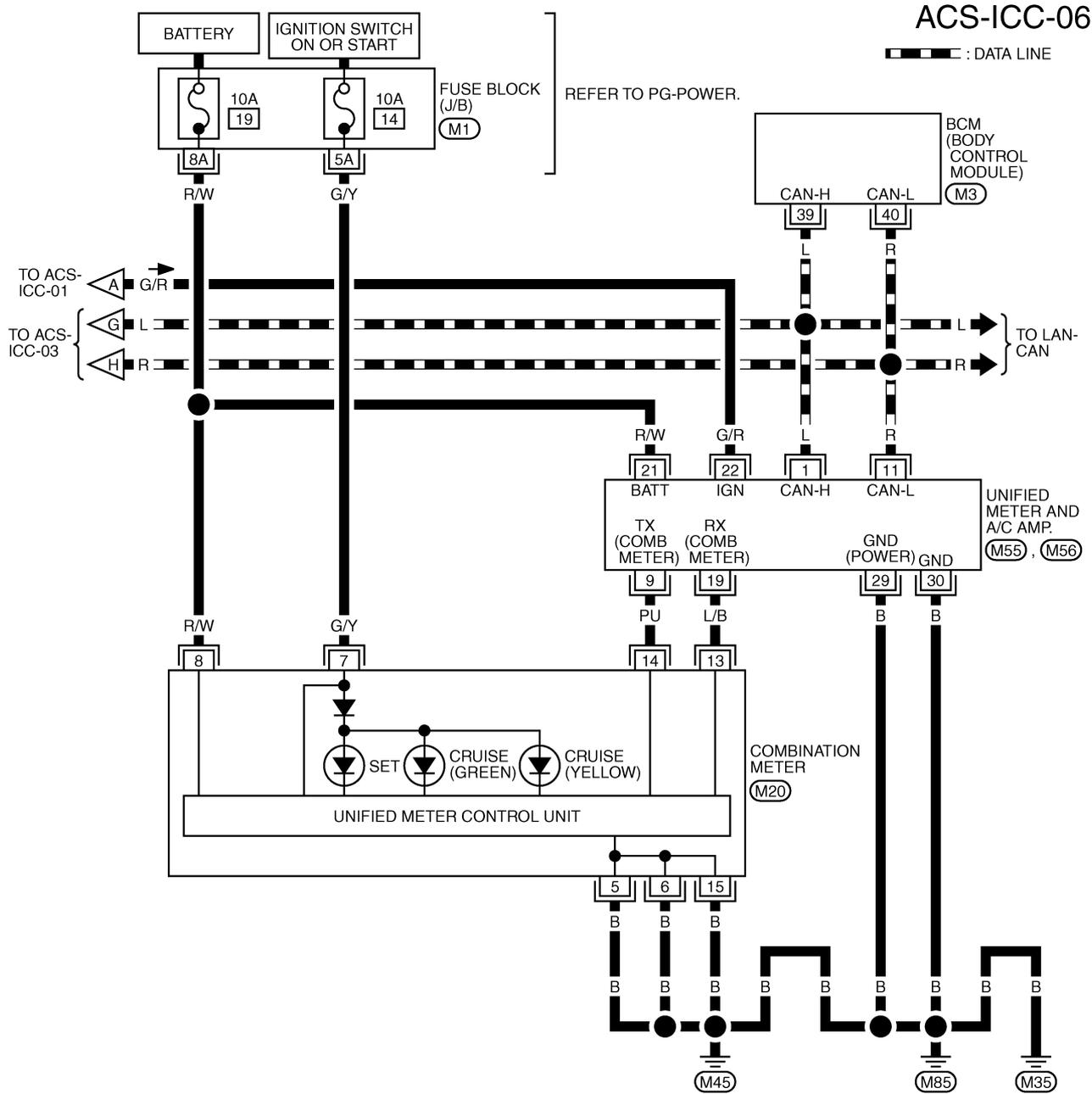
E142  
B

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

TKWM0652E

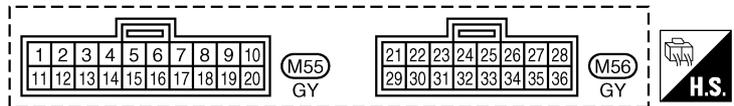
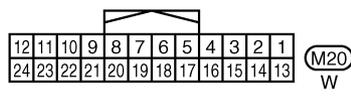
# WIRING DIAGRAM

[ICC]



A  
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E  
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G  
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I  
J  
L  
M

ACS



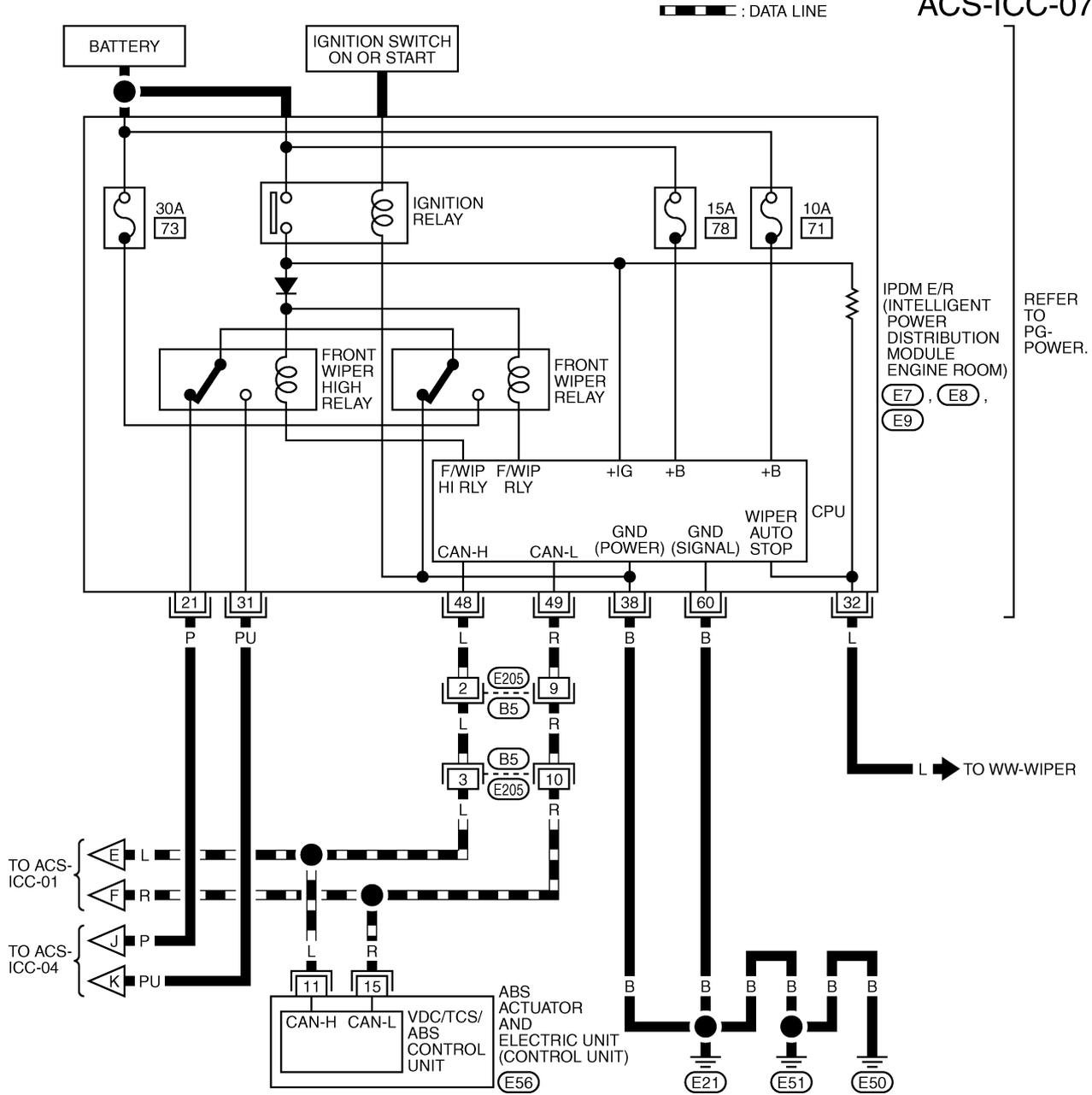
REFER TO THE FOLLOWING.  
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)  
 (M3) - ELECTRICAL UNITS

TKWM2438E

# WIRING DIAGRAM

[ICC]

ACS-ICC-07

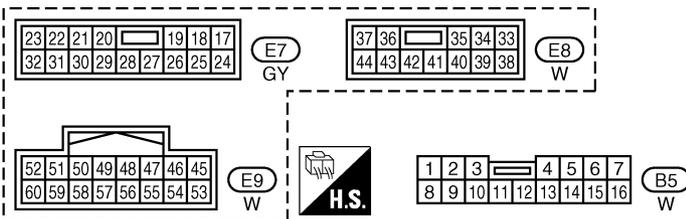


IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E7, E8, E9)

REFER TO PG-POWER.

TO ACS-ICC-01  
TO ACS-ICC-04

REFER TO THE FOLLOWING.  
(E56) -ELECTRICAL UNITS



TKWM0763E

# TERMINALS AND REFERENCE VALUE

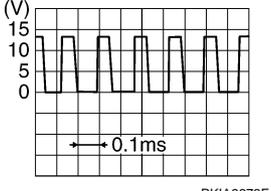
**[ICC]**

## TERMINALS AND REFERENCE VALUE

PFP:00000

### Terminals and Reference Value for ICC Unit

AKS00C8I

| Terminals<br>(Wire color)  |          | Item                                 | Condition          |  | Voltage (V)   |
|----------------------------|----------|--------------------------------------|--------------------|--|---|
| +                          | -        |                                      | Ignition<br>switch | Operation                                  |   |
| 1 (R/W)<br>2 (R/W)         | Ground   | Battery power supply                 | OFF                | —  | Battery voltage   |
| 5 (R)                      |          | CAN L                                | —                  | —  | —   |
| 6 (GY/L)                   |          | Release switch power supply          | ON                 | —  | Approx. 10  |
| 7 (GY/R)                   |          | NEUT-SW                              | ON                 | Selector lever in "N" or "P" positions     | Approx. 12  |
|                            |          |                                      |                    | Selector lever in other positions          | Approx. 0   |
| 8 (Y/G)                    | 24 (Y/R) | Brake pressure sensor power supply   | ON                 | —  | Approx. 5   |
| 10 (B/R)                   | Ground   | Brake booster solenoid (+) side      | ON                 | —  | Approx. 12  |
| 12 (L/W)                   |          | Brake booster solenoid (-) side      | ON                 | Solenoid operating                         |               |
|                            |          |                                      |                    | Solenoid not operating                     | Approx. 12  |
| 14 (L)                     |          | CAN H                                | —                  | —  | —   |
| 15 (LG/R)                  |          | Brake release switch (normal closed) | ON                 | Depress the brake pedal                    | Approx. 0   |
|                            |          |                                      |                    | Release the brake pedal                    | Approx. 10  |
| 17 (BR)                    | 24 (Y/R) | Brake pressure sensor signal         | ON                 | Release the brake pedal                    | Approx. 0.5   |
|                            |          |                                      |                    | Depress the brake pedal                    | Approx. 0.5 - 3<br>(Note) Voltage becomes higher depending on effectiveness of depressing brakes. |
| 19 (B)<br>20 (B)<br>46 (B) | Ground   |                                      | ON                 | —  | Approx. 0   |
| 22 (G/Y)                   |          | Brake release switch (normally open) | ON                 | Depress the brake pedal                    | Approx. 10  |
|                            |          |                                      |                    | Release the brake pedal                    | Approx. 0   |
| 29 (SB)                    |          | ICC brake switch (normal closed)     | ON                 | Selector lever: Not in "N" or "P" position | Depress the brake pedal   |
|                            |          |                                      |                    | Release the brake pedal                    | Approx. 12  |
| 30 (Y)                     |          | DDL - TX                             | —                  | —  | —   |
| 33 (G/R)<br>42 (G/R)       |          | Ignition switch ON or START          | ON                 | —  | Battery voltage   |
| 38 (P/B)                   |          | Stop lamp switch (normally open)     | ON                 | Depress the brake pedal                    | Approx. 12  |
|                            |          |                                      |                    | Release the brake pedal                    | Approx. 0   |
| 39 (G/OR)                  |          | DDL - RX                             | —                  | —  | —   |

A  
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ACS

# TERMINALS AND REFERENCE VALUE

**[ICC]**

| Terminals<br>(Wire color) |        | Item                          | Condition          |                                     | Voltage (V) |
|---------------------------|--------|-------------------------------|--------------------|-------------------------------------|-------------|
| +                         | -      |                               | Ignition<br>switch | Operation                           |             |
| 40(PU/W)                  | Ground | Parking brake signal          | ON                 | Depress the parking brake           | Approx. 0   |
|                           |        |                               |                    | Release the parking brake           | Approx. 12  |
| 47 (W/R)                  |        | Stop lamp drive output signal | ON                 | Brake operating with ICC system     | Approx.12   |
|                           |        |                               |                    | Brake not operating with ICC system | Approx. 0   |

## Terminals and Reference Value for ICC Sensor

AKS00C8J

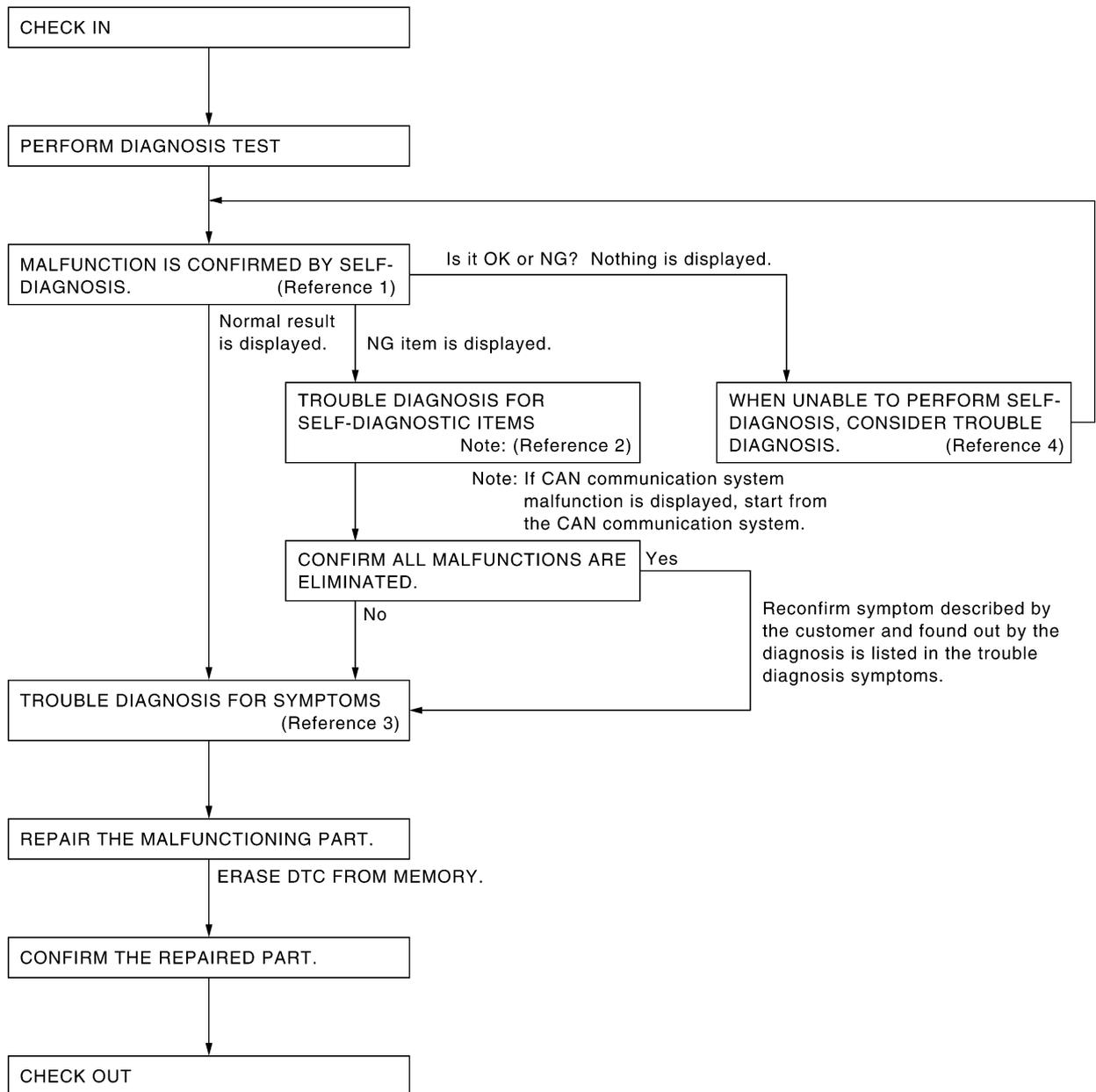
| Terminals<br>(Wire color) |        | Item             | Condition          |           | Voltage (V)     |
|---------------------------|--------|------------------|--------------------|-----------|-----------------|
| +                         | -      |                  | Ignition<br>switch | Operation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

## TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

PFP:00004

### Work Flow

AKS00C8L



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
ACS  
L  
M

SKIA1227E

- Reference 1... Refer to [ACS-36, "Self-Diagnostic Function"](#) .
- Reference 2... Refer to [ACS-41, "Diagnostic Trouble Code \(DTC\) Chart"](#) .
- Reference 3... Refer to [ACS-65, "Symptom Chart"](#) .
- Reference 4... Refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) / [ACS-38, "SELF-DIAGNOSIS BY ICC SYSTEM DISPLAY WILL NOT RUN"](#) .

## CONSULT-II Function DESCRIPTION

CONSULT-II performs the following functions communicating with the ICC unit.

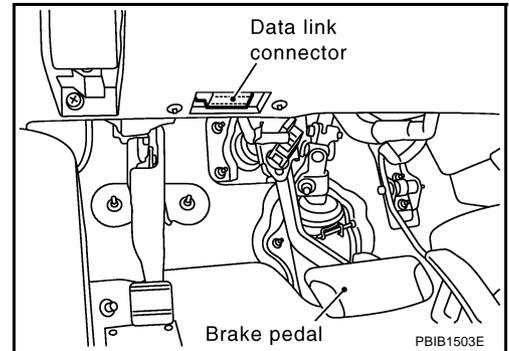
| Test mode               | Function  | Reference page         |
|-------------------------|---|------------------------|
| WORK SUPPORT            | <ul style="list-style-type: none"> <li>● Monitors aiming direction to facilitate laser beam aiming operation.</li> <li>● Indicates causes of automatic cancellation of the ICC system.</li> </ul> | <a href="#">ACS-31</a> |
| SELF-DIAGNOSTIC RESULTS | Displays malfunctioning system memorized in ICC unit.   | <a href="#">ACS-32</a> |
| DATA MONITOR            | Displays real-time input/output data of ICC unit.   | <a href="#">ACS-32</a> |
| CAN DIAG SUPPORT MNTR   | The results of transmit/receive diagnosis of CAN communication can be read.   | <a href="#">LAN-18</a> |
| ACTIVE TEST             | Enables operation check of electrical loads by sending driving signal to them.  | <a href="#">ACS-34</a> |
| ECU PART NUMBER         | Displays part number of ICC unit.   | —                      |

## CONSULT-II BASIC OPERATION

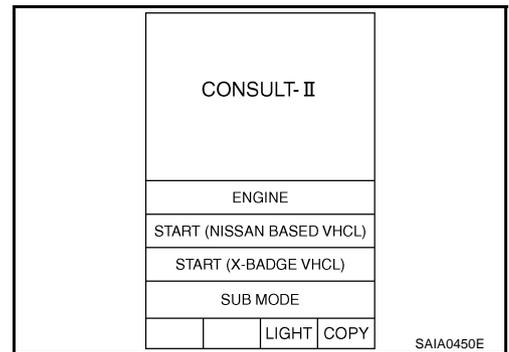
### CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

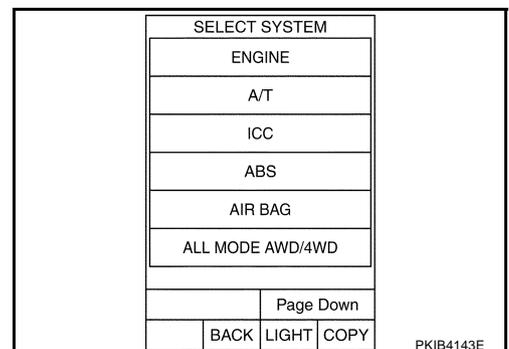
1. Turn ignition switch OFF.
2. Connect CONSULT-II and CONSULT-II CONVERTER on the data link connector.
3. Turn ignition switch ON.



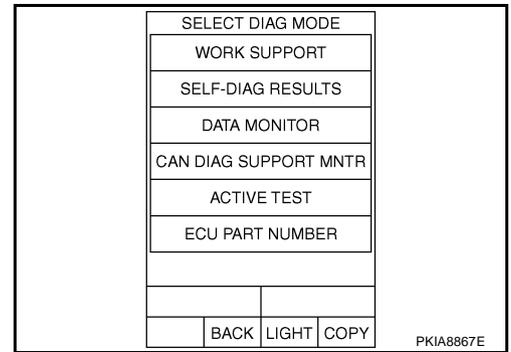
4. Touch "START (NISSAN BASED VHCL)"



5. Touch "ICC" on "SELECT SYSTEM" screen.  
If "ICC" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



6. Touch any of “WORK SUPPORT”, “SELF-DIAG RESULTS”, “DATA MONITOR”, “CAN DIAG SUPPORT MNTR”, “ACTIVE TEST” and “ECU PART NUMBER” on selection screen.



A  
B  
C  
D

## WORK SUPPORT

### Work Item

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

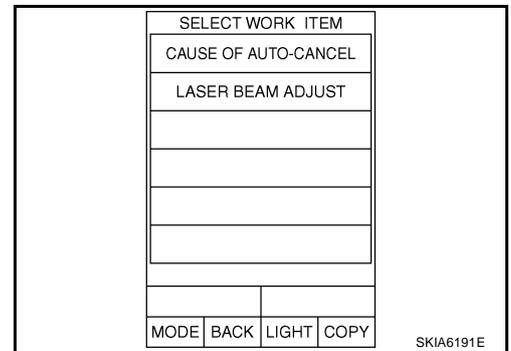
E  
F

### Cause of Auto-Cancel

1. Touch “WORK SUPPORT” on the “SELECT DIAG MODE” screen. Refer to [ACS-30, "CONSULT-II BASIC OPERATION"](#) .
2. Touch “CAUSE OF AUTO-CANCEL” on the “SELECT WORK ITEM” screen.
3. Cause of automatic cancellation screen will be shown.

**CAUTION:**

**Last five cancel (system cancel) causes are displayed.**



G  
H  
I  
J

### Display Item List

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

ACS

L  
M

### Laser Beam Adjust

For details, refer to [ACS-12, "LASER BEAM AIMING ADJUSTMENT"](#) .

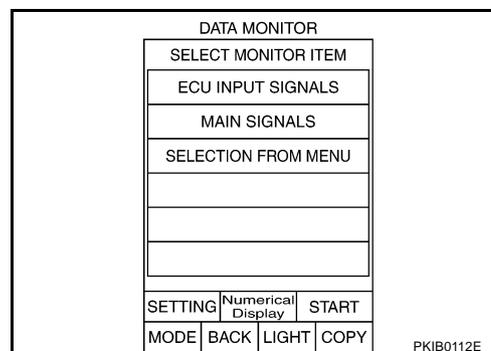
## SELF-DIAGNOSTIC RESULTS

For details, refer to [ACS-41, "Diagnostic Trouble Code \(DTC\) Chart"](#) .

## DATA MONITOR

### Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen. Refer to [ACS-30, "CONSULT-II BASIC OPERATION"](#) .
2. Touch any of "ECU INPUT SIGNALS", "MAIN SIGNALS" and "SELECTION FROM MENU" on selection screen.
3. Touch "START".
4. Display the data monitor.
5. If necessary, touch "COPY" in turn, and print data.



### Monitored Item

×: Applicable

| Monitored Item<br>[unit]         | ECU INPUT<br>SIGNALS | MAIN<br>SIGNALS | SELEC-<br>TION FROM<br>MENU | Description   |
|----------------------------------|----------------------|-----------------|-----------------------------|---|
| VHCL SPEED SE<br>[km/h] or [mph] | ×                    | ×               | ×                           | Indicates vehicle speed calculated from ICC unit through CAN communication [ABS actuator and electric unit (control unit) transmits wheel speed sensor signal through CAN communication]. |
| SET VHCL SPD<br>[km/h] or [mph]  |                      | ×               | ×                           | Indicates set vehicle speed memorized in ICC unit.  |
| THRTL OPENING<br>[%]             | ×                    | ×               | ×                           | Indicates throttle angle read from ICC unit through CAN communication (ECM transmits throttle angle through CAN communication).   |
| ENGINE RPM<br>[rpm]              | ×                    |                 | ×                           | Indicates engine speed read from ICC unit through CAN communication (ECM transmits engine speed through CAN communication).   |
| DISTANCE ADJ<br>[SHOR/MID/LONG]  | ×                    | ×               | ×                           | Indicates set distance memorized in ICC unit.   |
| WIPER SW<br>[OFF/LOW/HIGH]       | ×                    |                 | ×                           | Indicates wiper [OFF/LOW/HIGH] status (BCM transmits front wiper request signal through CAN communication).   |
| MAIN SW<br>[ON/OFF]              | ×                    | ×               | ×                           | Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).   |
| SET/COAST SW<br>[ON/OFF]         | ×                    | ×               | ×                           | Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).   |
| CANCEL SW<br>[ON/OFF]            | ×                    | ×               | ×                           | Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).   |
| RESUME/ACC SW<br>[ON/OFF]        | ×                    | ×               | ×                           | Indicates [ON/OFF] status as judged from ICC steering switch signal (ECM transmits ICC steering switch signal through CAN communication).   |
| CRUISE OPE<br>[ON/OFF]           |                      | ×               | ×                           | Indicates whether controlling or not (ON means "controlling").  |
| BRAKE SW<br>[ON/OFF]             | ×                    | ×               | ×                           | Indicates [ON/OFF] status as judged from ICC brake switch signal.   |
| STOP LAMP SW<br>[ON/OFF]         | ×                    | ×               | ×                           | Indicates [ON/OFF] status as judged from stop lamp switch signal.   |

# TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

[ICC]

| Monitored Item<br>[unit]       | ECU INPUT<br>SIGNALS | MAIN<br>SIGNALS | SELEC-<br>TION FROM<br>MENU | Description   |
|--------------------------------|----------------------|-----------------|-----------------------------|---|
| RELEASE SW NO<br>[ON/OFF]      | ×                    |                 | ×                           | Indicates [ON/OFF] status as judged from release switch signal.<br>ON when brake is depressed.<br>OFF when brake is not depressed.  |
| RELEASE SW NC<br>[ON/OFF]      | ×                    |                 | ×                           | Indicates [ON/OFF] status as judged from release switch signal.<br>ON when brake is not depressed.<br>OFF when brake is depressed.  |
| IDLE SW<br>[ON/OFF]            | ×                    |                 | ×                           | Indicates [ON/OFF] status of idle switch read from ICC unit<br>through CAN communication (ECM transmits ON/OFF status<br>through CAN communication).  |
| GEAR<br>[1, 2, 3, 4, 5]        | ×                    |                 | ×                           | Indicates AT gear position read from ICC unit through CAN com-<br>munication (TCM transmits gear position through CAN commu-<br>nication).  |
| BUZZER O/P<br>[ON/OFF]         |                      |                 | ×                           | Indicates [ON/OFF] status of ICC warning chime output.  |
| ICC WARNING                    |                      |                 | ×                           | <b>NOTE:</b><br>This item is displayed, but cannot monitor.   |
| VHCL SPD AT<br>[km/h] or [mph] |                      |                 | ×                           | Indicates vehicle speed calculated from AT vehicle speed sen-<br>sor read from ICC unit through CAN communication (TCM<br>transmits AT vehicle speed sensor signal through CAN commu-<br>nication). |
| PRESS SENS<br>[bar]            | ×                    | ×               | ×                           | Indicates brake fluid pressure value calculated from signal volt-<br>age of pressure sensor.  |
| PRESS SENS 2                   | ×                    |                 | ×                           | <b>NOTE:</b><br>This item is displayed, but cannot monitor.   |
| D RANGE SW<br>[ON/OFF]         | ×                    |                 | ×                           | Indicates [ON/OFF] status of "D" position read from ICC unit<br>through CAN communication (TCM transmits ON/OFF condition<br>of "D" position through CAN communication).                            |
| AT OD OFF<br>[ON/OFF]          |                      |                 | ×                           | Indicates [ON/OFF] status of OD cancel output under control.  |
| NP RANGE SW<br>[ON/OFF]        | ×                    |                 | ×                           | Indicates PNP switch signal read from ICC unit through CAN<br>communication (TCM transmits PNP switch signal through CAN<br>communication).   |
| DISTANCE                       |                      |                 | ×                           | <b>NOTE:</b><br>This item is displayed, but cannot monitor.   |
| RELATIVE SPD                   |                      |                 | ×                           | <b>NOTE:</b><br>This item is displayed, but cannot monitor.   |
| STP LMP DRIVE<br>[ON/OFF]      |                      | ×               | ×                           | Indicates [ON/OFF] status of brake hold relay drive output.   |

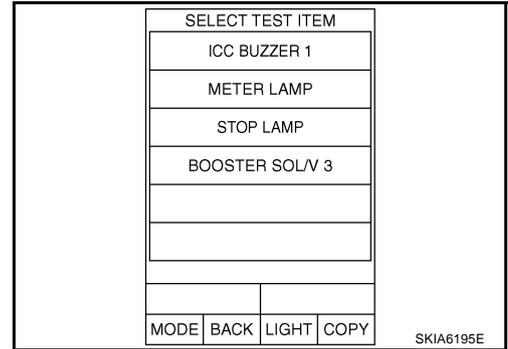
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**ACTIVE TEST**

**CAUTION:**

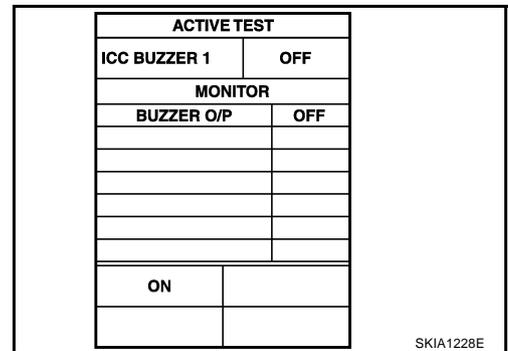
- Never perform the active test while driving.
  - Active test cannot be started while ICC system warning indicator illuminates.
1. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen. Refer to [ACS-30, "CONSULT-II BASIC OPERATION"](#).
  2. Touch any of “ICC BUZZER 1”, “METER LAMP”, “STOP LAMP” and “BOOSTER SOL/V 3” on selection screen.
  3. Touch necessary item and “START”.
  4. Active test screen will be shown.



**ICC BUZZER 1**

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

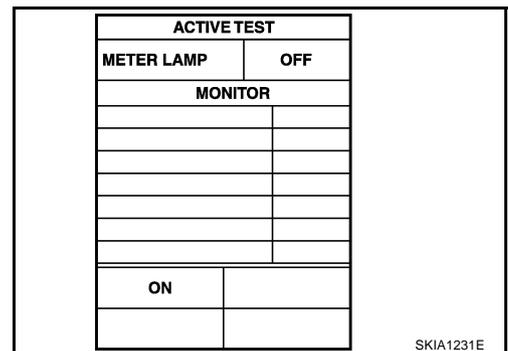
| BUZZER O/P   | ON   | OFF           |
|--------------|------|---------------|
| Buzzer sound | Beep | Not activated |



**METER LAMP**

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

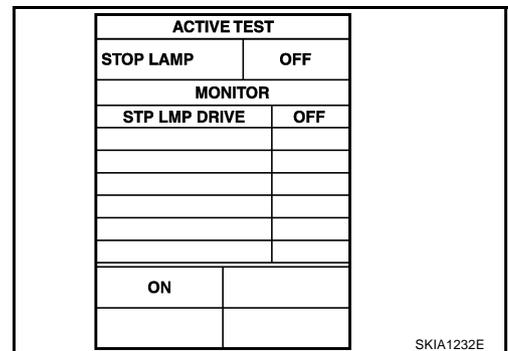
| METER LAMP         | ON                | OFF |
|--------------------|-------------------|-----|
| ICC system display | Full illumination | OFF |



**STOP LAMP**

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

| STP LMP DRIVE | ON      | OFF      |
|---------------|---------|----------|
| Stop lamp     | Lamp ON | Lamp OFF |





## Self-Diagnostic Function WITH CONSULT-II

1. Go to operation check after asking the customer for symptom information. Refer to [ACS-9, "ACTION TEST"](#) .
2. Stop vehicle, turn ignition switch OFF, then connect CONSULT-II and CONSULT-II CONVERTER to data link connector.
3. With engine started, touch "START (NISSAN BASED VHCL)", "ICC", "SELF-DIAG RESULTS" on CONSULT-II screen in this order.

### CAUTION:

If "ICC" cannot be shown after several attempts, the ICC unit may have had malfunction. Repair or replace it. Refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .

4. Self-diagnostic result appears on screen. If "NO DTC ..." is shown, check ICC warning lamp. If any malfunction is indicated, GO TO step 5.
5. According to [ACS-41, "Diagnostic Trouble Code \(DTC\) Chart"](#) , perform appropriate check, and repair or replace malfunctioning part as necessary.
6. Turn ignition switch OFF.
7. Start the engine and touch "START (NISSAN BASED VHCL)", "ICC", "SELF-DIAG RESULT", and "ERASE" on CONSULT-II display in turn to erase the memory.

### CAUTION:

If the memory does not erase, go to 5.

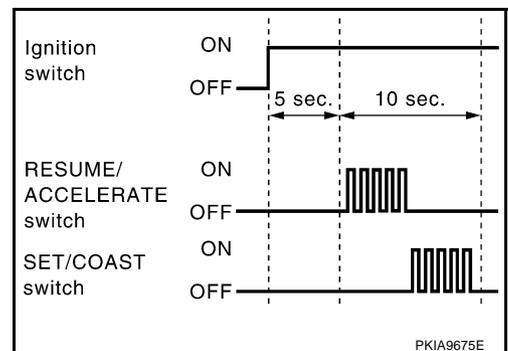
8. Perform ICC system running test (drive vehicle with ICC system ON), and make sure that ICC warning lamp does not illuminate.

## WITHOUT CONSULT-II

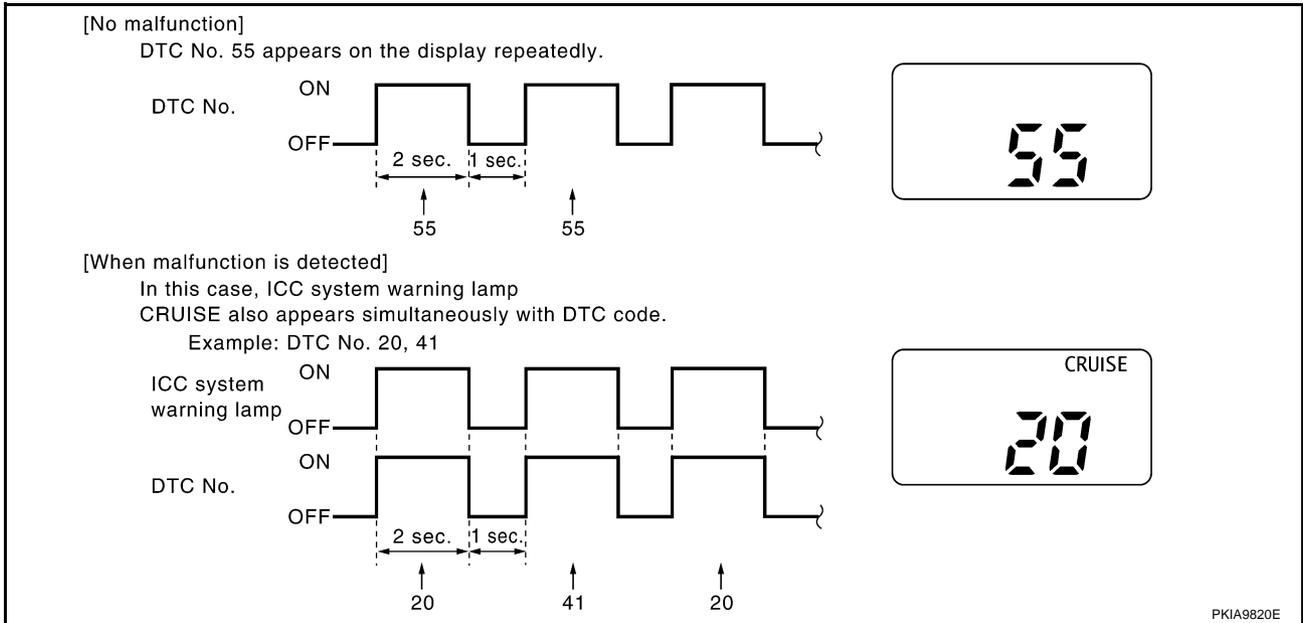
1. Go to operation check after asking the customer for symptom information. Refer to [ACS-9, "ACTION TEST"](#) .
2. Stop the vehicle to start the self-diagnosis.
3. Turn ignition switch OFF.
4. From 5 seconds through 15 seconds after turning ignition switch ON, press RESUME/ACCELERATE switch 5 times, and SET/COAST switch 5 times.

### CAUTION:

- Never start the engine.
- Never turn the MAIN switch ON.
- When operation above is not completed from 5 seconds through 15 seconds, start again from above go to 3.
- If self-diagnosis mode cannot be started after several attempts, the ICC unit may have had malfunction. Repair or replace it. Refer to [ACS-38, "SELF-DIAGNOSIS BY ICC SYSTEM DISPLAY WILL NOT RUN"](#) .



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

**CAUTION:**

- DTC will disappear after 5 minutes.
  - When more than one malfunctions are detected, a maximum of 3 code numbers can be stored; the latest malfunction will be displayed first.
6. Check [ACS-41, "Diagnostic Trouble Code \(DTC\) Chart"](#), and repair or replace if necessary.
  7. After repair, erase DTC stored in the ICC unit.
  8. DTC 55 will be shown.
  9. Turn ignition switch OFF to exit the diagnosis.
  10. Perform ICC system running test (drive vehicle with ICC system ON), and make sure that ICC warning lamp (Orange) does not illuminate.

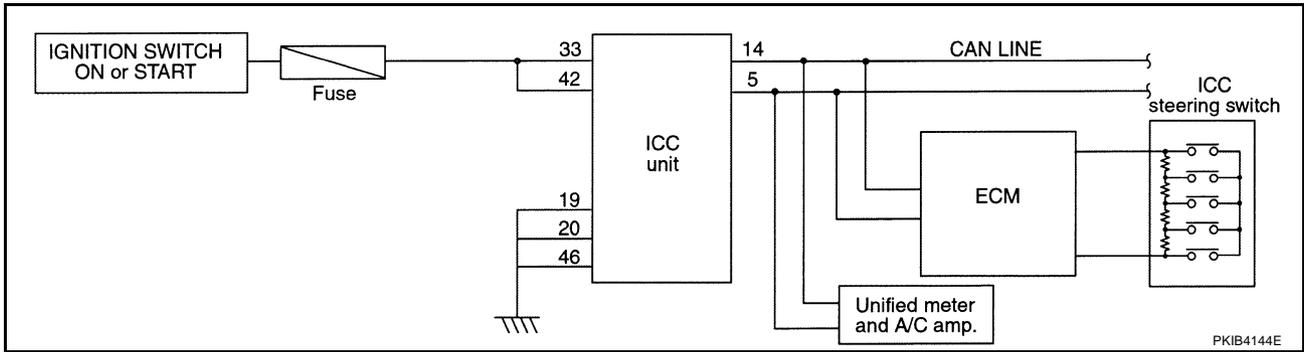
**Self-Diagnostic Erasing Method**

1. Stop the vehicle and turn the ignition switch OFF.
2. Turn ignition switch ON and start self-diagnosis.
3. During self-diagnosis mode, press CANCEL switch 5 times, and DISTANCE switch 5 times in this order.

**CAUTION:**

- Press them within 10 seconds after pressing CANCEL switch at first.
  - When operation is not completed within 10 seconds, start again from above go to 2.
4. DTC 55 will be shown.
- CAUTION:**  
DTC of an existing malfunction will not be erased.
5. Turn ignition switch OFF to exit the diagnosis.
  6. Perform ICC system running test (drive vehicle with ICC system ON), and make sure that ICC system warning lamp (Orange) does not illuminate.

**SELF-DIAGNOSIS BY ICC SYSTEM DISPLAY WILL NOT RUN**



**Possible Irregular Condition**

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

**1. CHECK FUSES**

Check that any of the fuses is blown.

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

OK or NG

OK >> GO TO 2.

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

**2. CHECK ICC SYSTEM DISPLAY**

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

Do all displays illuminate?

YES >> GO TO 3.

NO >> GO TO 6.

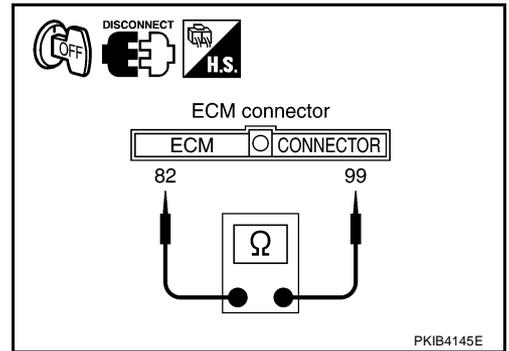
**3. CHECK HARNESS BETWEEN ECM AND ICC STEERING SWITCH**

1. Turn ignition switch OFF.
2. Disconnect ECM connector, and check terminals for bend and looseness.
3. Check continuity between ECM harness connector M90 terminals 82 (B/W) and 99 (G/Y).

**82 (B/W) – 99 (G/Y)**

**When MAIN switch pressed : Approx. 0 Ω**

**When MAIN switch released : Approx. 5.5 kΩ**



4. Check continuity between ECM harness connector M90 terminals 82 (B/W), 99 (G/Y) and ground.

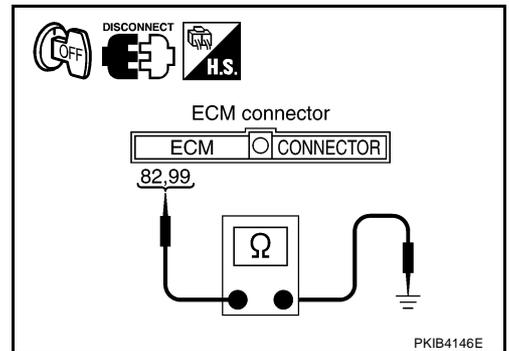
**82 (B/W) – Ground : Continuity should not exist.**

**99 (G/Y) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> GO TO 4.



**4. CHECK ICC STEERING SWITCH**

Check ICC steering switch. Refer to [ACS-71, "ICC Steering Switch"](#).

OK or NG

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

- NG >> 1. Replace ICC steering switch.  
2. Perform self-diagnosis mode for ICC system.

**5. CHECK SELF-DIAGNOSIS**

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

OK or NG

OK >> INSPECTION END

NG >> GO TO 6.

**6. CHECK CONNECTOR FOR ICC UNIT**

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

Do all displays illuminate?

YES >> Perform self-diagnosis again.

NO >> GO TO 7.

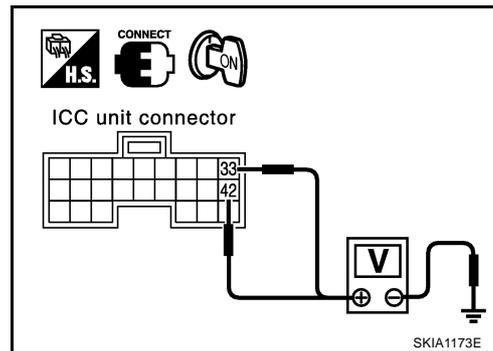
## 7. CHECK POWER SUPPLY CIRCUIT FOR ICC UNIT

Check voltage between ICC unit harness connector M89 terminals 33 (G/R), 42 (G/R) and ground.

- 33 (G/R) – Ground : Battery voltage**
- 42 (G/R) – Ground : Battery voltage**

OK or NG

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



## 8. CHECK GROUND CIRCUIT FOR ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector.
3. Check continuity between ICC unit harness connector M88 terminals 19 (B), 20 (B) and ground.

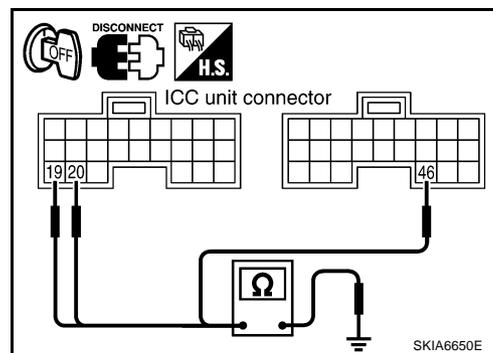
- 19 (B) – Ground : Continuity should exist.**
- 20 (B) – Ground : Continuity should exist.**

4. Check continuity between ICC unit harness connector M89 terminal 46 (B) and ground.

- 46 (B) – Ground : Continuity should exist.**

OK or NG

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



## 9. CHECK DISPLAYS

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

Do all displays illuminate?

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

## 10. CHECK CAN COMMUNICATION

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

OK or NG

- OK >> Replace combination meter.
- NG >> CAN communication inspection. Refer to [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#).

# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

[ICC]

## TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

PFP:00000

### Diagnostic Trouble Code (DTC) Chart

AKS006YW

×: Applicable

| DTC No. | CONSULT-II screen terms | ICC system warning lamp | Fail-safe                                |  |                                      | Malfunctions detected where...  | Reference page         |
|---------|-------------------------|-------------------------|--|--|--------------------------------------|---|------------------------|
|         |                         |                         | Vehicle-to-vehicle distance control mode | Conventional (fixed speed) cruise control mode | Brake assist (with preview function) |   |                        |
| 11      | CONTROL UNIT            | ×                       | ×  | ×  | ×                                    | ● ICC unit internal malfunction   | <a href="#">ACS-42</a> |
| 20      | CAN COMM CIRCUIT        | ×                       | ×  | ×  | ×                                    | ● ICC unit detected CAN communication malfunction.  | <a href="#">ACS-43</a> |
| 31      | POWER SUPPLY CIR        | ×                       | ×  | ×  | ×                                    | ● ICC unit power supply voltage is excessively low (less than 8V).  | <a href="#">ACS-43</a> |
| 34      | POWER SUPPLY CIR2       | ×                       | ×  | ×  | ×                                    | ● ICC unit power supply voltage is excessively high (more than 19V).  | <a href="#">ACS-43</a> |
| 41      | VHCL SPEED SE CIRC      | ×                       | ×  | ×  | ×                                    | <ul style="list-style-type: none"> <li>● Wheel sensor malfunction.</li> <li>● ABS actuator and electric unit ( control unit) malfunction</li> <li>● AT vehicle speed sensor malfunction</li> <li>● TCM malfunction</li> </ul> | <a href="#">ACS-44</a> |
| 43      | ABS/TCS/VDC CIRC        | ×                       | ×  | ×  | ×                                    | ● VDC/TCS/ABS system malfunction  | <a href="#">ACS-45</a> |
| 45      | BRAKE SW/ STOP L SW     | ×                       | ×  | ×  | ×                                    | <ul style="list-style-type: none"> <li>● Brake and stop lamp switch harness is open or shorted.</li> <li>● Brake and stop lamp switch is ON or stuck to OFF.</li> <li>● Brake and stop lamp switch is stuck to ON.</li> </ul> | <a href="#">ACS-45</a> |
| 46      | OPERATION SW CIRC       | ×                       | ×  | ×  |                                      | <ul style="list-style-type: none"> <li>● ICC steering switch harness or spiral cable is open or shorted.</li> <li>● ICC steering switch malfunction</li> </ul>  | <a href="#">ACS-47</a> |
| 61      | PRESS SEN CIRCUIT       | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● Brake pressure sensor harness is open or shorted.</li> <li>● Brake pressure sensor malfunction</li> <li>● Brake pressure sensor input circuit malfunction</li> </ul>                 | <a href="#">ACS-48</a> |
| 62      | BOOSTER SOL/V CIRCUIT   | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● Solenoid harness is open or shorted.</li> <li>● Solenoid is open.</li> <li>● Solenoid drive circuit malfunction</li> </ul>   | <a href="#">ACS-50</a> |
| 63      | RELEASE SW CIRCUIT      | ×                       | ×  | ×  | ×                                    | <ul style="list-style-type: none"> <li>● Release switch harness is open or shorted.</li> <li>● Release switch malfunction</li> <li>● Release switch input circuit malfunction</li> </ul>                                      | <a href="#">ACS-51</a> |
| 65      | PRESSURE CONTROL        | ×                       | ×  |  | ×                                    | ● Booster malfunction   | <a href="#">ACS-52</a> |
| 74      | LASER BEAM OFF CNTR     | ×                       | ×  |  | ×                                    | ● Laser beam of ICC sensor is off the aiming point.   | <a href="#">ACS-53</a> |

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# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

[ICC]

| DTC No. | CONSULT-II screen terms | ICC system warning lamp | Fail-safe                                |  |                                      | Malfunctions detected where...   | Reference page         |
|---------|-------------------------|-------------------------|--|--|--------------------------------------|--|------------------------|
|         |                         |                         | Vehicle-to-vehicle distance control mode | Conventional (fixed speed) cruise control mode | Brake assist (with preview function) |  |                        |
| 90      | STOP LAMP RLY FIX       | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● Normally open terminal of stop lamp relay is stuck.</li> </ul>  | <a href="#">ACS-53</a> |
| 92      | ECM CIRCUIT             | ×                       | ×  | ×  | ×                                    | <ul style="list-style-type: none"> <li>● ECM malfunction</li> <li>● Accelerator pedal position sensor malfunction</li> <li>● ICC unit malfunction</li> </ul>                                 | <a href="#">ACS-59</a> |
| 96      | NP RANGE                | ×                       | ×  | ×  |                                      | <ul style="list-style-type: none"> <li>● Park/neutral position switch harness is open or shorted.</li> <li>● Park/neutral position switch malfunction.</li> <li>● TCM malfunction</li> </ul> | <a href="#">ACS-60</a> |
| 97      | AT CIRCUIT              | ×                       | ×  | ×  |                                      | <ul style="list-style-type: none"> <li>● TCM malfunction</li> </ul>  | <a href="#">ACS-61</a> |
| 98      | GEAR POSITION           | ×                       | ×  | ×  |                                      | <ul style="list-style-type: none"> <li>● TCM malfunction</li> <li>● AT turbine revolution sensor malfunction</li> <li>● AT vehicle speed sensor malfunction</li> </ul>                       | <a href="#">ACS-61</a> |
| 102     | RADAR STAIN             | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● ICC sensor body window has contamination.</li> </ul>  | <a href="#">ACS-62</a> |
| 103     | LASER SENSOR FAIL       | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● ICC sensor internal malfunction</li> </ul>  | <a href="#">ACS-63</a> |
| 104     | LASER AIMING INCMP      | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● Laser beam aiming of ICC sensor is not adjusted.</li> </ul>   | <a href="#">ACS-63</a> |
| 107     | LASER COMM FAIL         | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● CAN data received by ICC sensor is strange (from ICC unit, combination meter or ECM).</li> </ul>  | <a href="#">ACS-63</a> |
| 109     | LASER HIGH TEMP         | ×                       | ×  |  | ×                                    | <ul style="list-style-type: none"> <li>● Temperature around ICC sensor is excessively high.</li> </ul>   | <a href="#">ACS-64</a> |

## DTC 11 CONTROL UNIT

AKS00C80

### 1. CHECK ICC UNIT SELF-DIAGNOSIS

1. Perform self-diagnosis.
2. Check if any item other than "DTC 11 CONTROL UNIT" is indicated on self-diagnosis display.

Is any indicated?

YES >> 1. Repair or replace applicable item.

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

NO >> 1. Replace ICC unit.

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

## DTC 20 CAN COMM CIRCUIT

AKS00CBP

### 1. CHECK CAN COMMUNICATION

**With CONSULT-II**

1. Perform self-diagnosis.
2. Print self-diagnostic result.

>> After printing self-diagnostic result, go to "CAN system". Refer to [LAN-5, "Precautions When Using CONSULT-II"](#) .

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

AKS00C8Q

### 1. CHECK CONNECTOR ICC UNIT

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

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection

1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC running test. Then perform self-diagnosis of ICC system again.

### 2. CHECK POWER SUPPLY CIRCUIT FOR ICC UNIT

1. Turn ignition switch ON.
2. Check voltage between ICC unit harness connector M89 terminals 33 (G/R), 42 (G/R) and ground.

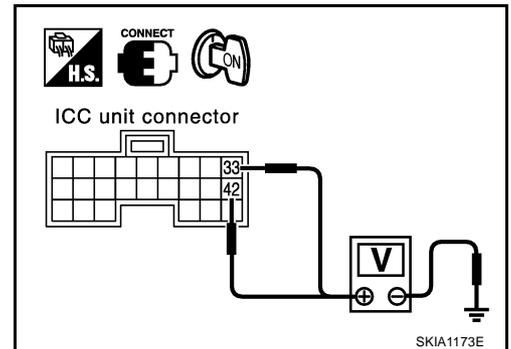
**33 (G/R) – Ground : Battery voltage**

**42 (G/R) – Ground : Battery voltage**

OK or NG

OK >> GO TO 3.

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



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## 3. CHECK GROUND CIRCUIT FOR ICC UNIT

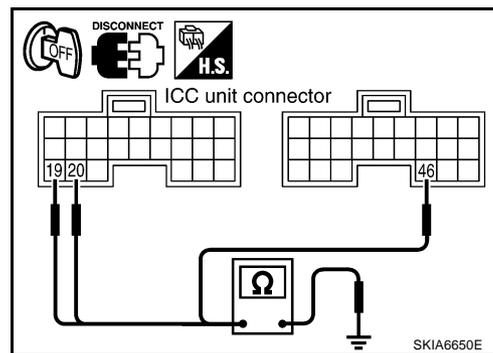
1. Turn ignition switch OFF.
2. Disconnect ICC unit connector.
3. Check continuity between ICC unit harness connector M88 terminals 19 (B), 20 (B) and ground.

**19 (B) – Ground : Continuity should exist.**

**20 (B) – Ground : Continuity should exist.**

4. Check continuity between ICC unit harness connector M89 terminal 46 (B) and ground.

**46 (B) – Ground : Continuity should exist.**



### OK or NG

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

## DTC 41 VHCL SPEED SE CIRC

AKS00C8R

### 1. CHECK ICC UNIT SELF-DIAGNOSIS

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

#### Is any indicated?

- YES** >> 1. Repair or replace applicable item.  
           2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
- NO** >> GO TO 2.

### 2. CHECK AT VEHICLE SPEED SENSOR

#### Ⓜ With CONSULT-II

With “DATA MONITOR”, check “VHCL SPD AT” operates normally. Refer to [ACS-32. "DATA MONITOR"](#) .

### OK or NG

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

**DTC 43 ABS/TCS/VDC CIRC**

AKS00C8S

**1. CHECK ICC UNIT SELF-DIAGNOSIS****With CONSULT-II**

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

Is it indicated?

- YES >> 1. Repair or replace applicable item.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
- NO >> GO TO 2.

**2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS****With CONSULT-II**

1. Perform self-diagnosis of ABS actuator and electric unit (control unit). Refer to [BRC-12, "TROUBLE DIAGNOSIS"](#).
2. Check if malfunction is indicated.

Is malfunction indicated?

- YES >> 1. Repair or replace applicable item.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
- NO >> 1. Replace ICC unit.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

**DTC 45 BRAKE SW/STOP L SW**

AKS00C8T

**1. CHECK CONNECTOR FOR ICC UNIT**

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

Is malfunction indicated?

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

**2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH****With CONSULT-II**

With "DATA MONITOR", check if "STOP LAMP SW" and "BRAKE SW" are operated normally. Refer to [ACS-32, "DATA MONITOR"](#).

OK or NG

- OK >> 1. Replace ICC unit.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
- NG >> ● BRAKE SW: GO TO 3.  
● STOP LAMP SW: GO TO 5.

## 3. BRAKE SWITCH INSTALLATION AND ADJUSTMENT INSPECTION

Check brake switch for proper installation, and adjust the switch if necessary. Refer to [BR-6, "BRAKE PEDAL"](#)

OK or NG

OK >> GO TO 4.

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

## 4. CHECK ICC BRAKE SWITCH

Check ICC brake switch. Refer to [ACS-71, "ICC Brake Switch and Stop Lamp Switch"](#) .

OK or NG

OK >> 1. Replace ICC unit.

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

NG >> 1. Replace ICC brake switch.

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

## 5. CHECK STOP LAMP ILLUMINATION

Check stop lamp illumination.

OK or NG

OK >> GO TO 6.

NG >> 1. Check stop lamp circuit.

2. After repairing, erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

## 6. CHECK ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Remove ICC brake hold relay.
3. Check continuity of ICC brake hold relay.

**6 – 7 : Continuity should not exist.**

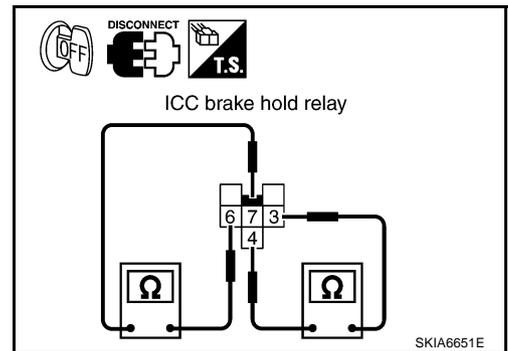
**3 – 4 : Continuity should exist.**

OK or NG

OK >> GO TO 7.

NG >> 1. Replace brake hold relay.

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



**7. CHECK ICC BRAKE HOLD RELAY CIRCUIT**

1. Disconnect ICC unit connector and stop lamp switch connector.
2. Check continuity between ICC unit harness connector M89 terminal 38 (P/B) and ICC brake hold relay harness connector E14 terminal 7 (P).

**38 (P/B) – 7 (P) : Continuity should exist.**

3. Check continuity between ICC unit harness connector M89 terminal 38 (P/B) and ground.

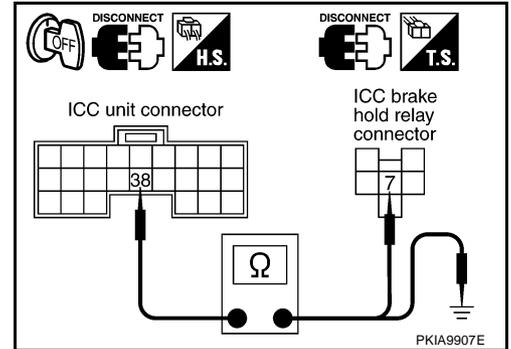
**38 (P/B) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> 1. Repair harness between ICC unit and ICC brake hold relay.

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



**8. CHECK STOP LAMP SWITCH CIRCUIT**

Check continuity between ICC unit harness connector M89 terminal 38 (P/B) and stop lamp switch harness connector E210 terminal 2 (P).

**38 (P/B) – 2 (P) : Continuity should exist.**

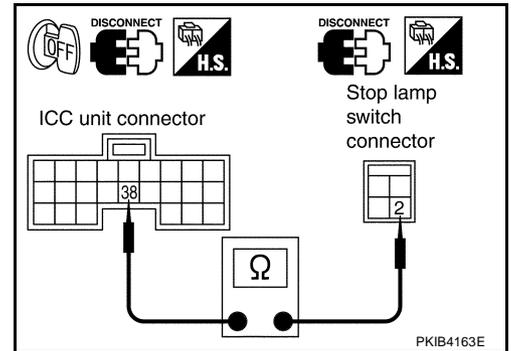
OK or NG

OK >> 1. Replace ICC unit.

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

NG >> 1. Repair harness between ICC unit and stop lamp switch.

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



**DTC 46 OPERATION SW CIRC**

AKS0070

**1. CHECK CONNECTOR FOR ECM**

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

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection

1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

**2. CHECK ICC STEERING SWITCH**

Check ICC steering switch. Refer to [ACS-71, "ICC Steering Switch"](#).

OK or NG

OK >> GO TO 3.

NG >> 1. Replace ICC steering switch.

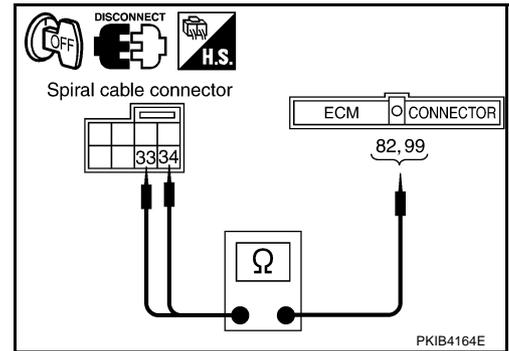
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

## 3. CHECK ICC STEERING SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ECM connector and spiral cable connector.
3. Check continuity between spiral cable harness connector M15 terminals 33 (B/W), 34 (G/Y) and ECM harness connector M90 terminals 82 (B/W), 99 (G/Y).

**33 (B/W) – 82 (B/W) : Continuity should exist.**

**34 (G/Y) – 99 (G/Y) : Continuity should exist.**



4. Check continuity between spiral cable harness connector M15 terminals 33 (B/W), 34 (G/Y) and ground.

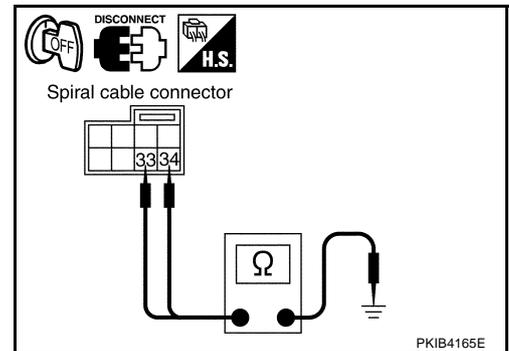
**33 (B/W) – Ground : Continuity should not exist.**

**34 (G/Y) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

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



## 4. CHECK SPIRAL CABLE

Check continuity between spiral cable (on vehicle) M15 terminals 33, 34 and spiral cable (on switch) M203 terminals 14, 15.

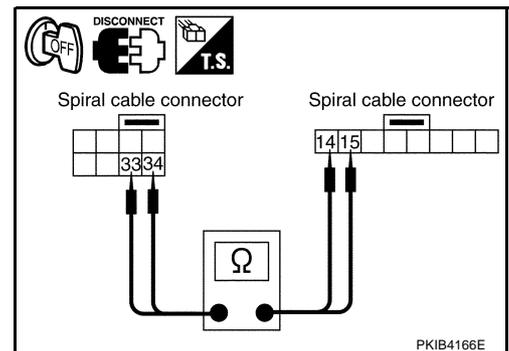
**33 – 15 : Continuity should exist.**

**34 – 14 : Continuity should exist.**

OK or NG

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

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



## DTC 61 PRESS SEN CIRCUIT

AKS00C8U

### 1. CHECK CONNECTOR BRAKE PRESSURE SENSOR AND ICC UNIT

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

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection

1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

## 2. CHECK HARNESS BETWEEN BRAKE PRESSURE SENSOR AND ICC UNIT

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake pressure sensor connector.
3. Check continuity between brake pressure sensor harness connector E142 terminals 1 (Y/R), 2 (OR), 3 (Y/G) and ICC unit harness connector M88 terminals 24 (Y/R), 17 (BR), 8 (Y/G).

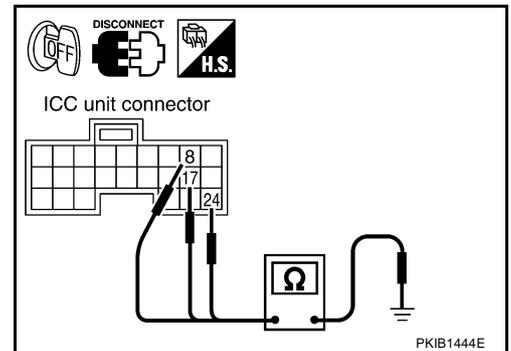
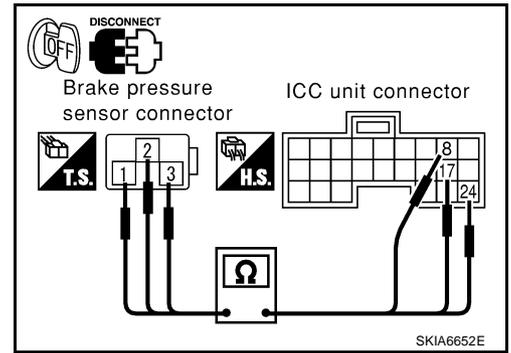
- 1 (Y/R) – 24 (Y/R) : Continuity should exist.**
- 2 (OR) – 17 (BR) : Continuity should exist.**
- 3 (Y/G) – 8 (Y/G) : Continuity should exist.**

4. Check continuity between ICC unit harness connector M88 terminals 8 (Y/G), 17 (BR), 24 (Y/R) and ground.

- 8 (Y/G) – Ground : Continuity should not exist.**
- 17 (BR) – Ground : Continuity should not exist.**
- 24 (Y/R) – Ground : Continuity should not exist.**

**OK or NG**

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



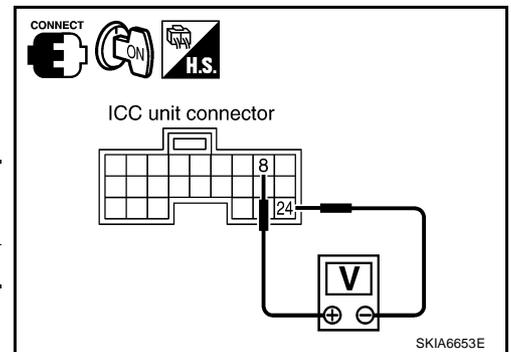
## 3. CHECK POWER SUPPLY CIRCUIT FOR BRAKE PRESSURE SENSOR

1. Connect ICC unit connector.
2. Turn ignition switch ON.
3. Check voltage between ICC unit harness connector M88 terminals 8 (Y/G) and 24 (Y/R).

| Terminal (wire color) |          | Voltage (V) |
|-----------------------|----------|-------------|
| (+)                   | (-)      |             |
| 8 (Y/G)               | 24 (Y/R) | Approx. 5   |

**OK or NG**

- OK >> 1. Replace brake pressure sensor. Refer to [BR-13](#), "[BRAKE MASTER CYLINDER](#)".
- 2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
- NG >> 1. Replace ICC unit.
- 2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.



## DTC 62 BOOSTER SOL/V CIRCUIT

### 1. CHECK SOLENOID/RELEASE SWITCH AND ICC UNIT CONNECTOR

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

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection

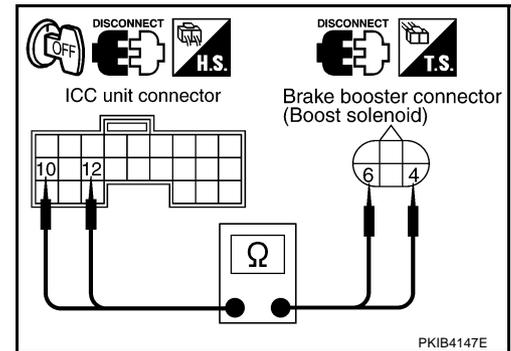
1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

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

1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake booster connector.
3. Check continuity between ICC unit harness connector M88 terminals 10 (B/R), 12 (L/W) and brake booster harness connector E54 terminals 4 (B), 6 (L).

**10 (B/R) – 4 (B) : Continuity should exist.**

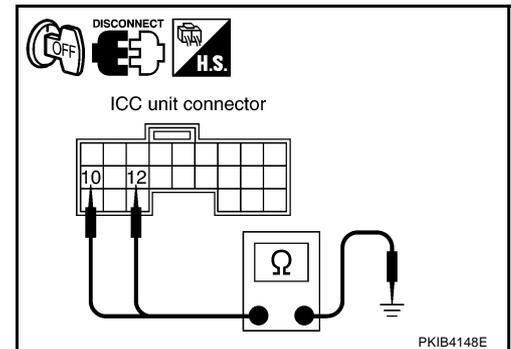
**12 (L/W) – 6 (L) : Continuity should exist.**



4. Check continuity between ICC unit harness connector M88 terminals 10 (B/R), 12 (L/W) and ground.

**10 (B/R) – Ground : Continuity should not exist.**

**12 (L/W) – Ground : Continuity should not exist.**



OK or NG

OK >> GO TO 3.

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

### 3. CHECK BOOST SOLENOID

Check boost solenoid. Refer to [ACS-71, "Boost Solenoid"](#).

OK or NG

OK >> 1. Replace ICC unit.

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

NG >> Boost solenoid malfunction

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

## DTC 63 RELEASE SW CIRCUIT

### 1. CHECK SOLENOID/RELEASE SWITCH AND ICC UNIT CONNECTOR

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

Is malfunction indicated?

YES >> GO TO 2.

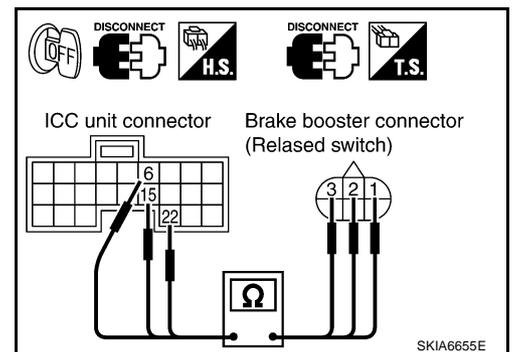
NO >> Poor connector connection

1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

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

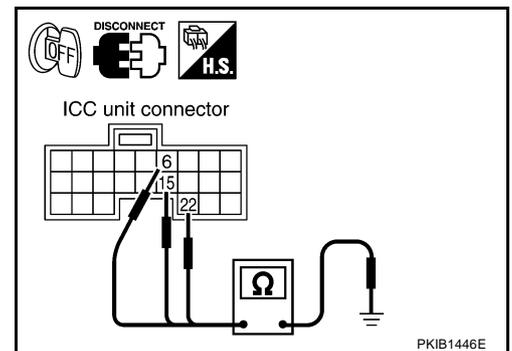
1. Turn ignition switch OFF.
2. Disconnect brake booster connector and ICC unit connector.
3. Check continuity between ICC unit harness connector M88 terminals 6 (GY/L), 15 (LG/R), 22 (G/Y) and brake booster harness connector E54 terminals 1 (R), 3 (LG), 2 (G).

**6 (GY/L) – 1 (R) : Continuity should exist.**  
**15 (LG/R) – 3 (LG) : Continuity should exist.**  
**22 (G/Y) – 2 (G) : Continuity should exist.**



4. Check continuity between ICC unit harness connector M88 terminals 6 (GY/L), 15 (LG/R), 22 (G/Y) and ground.

**6 (GY/L) – Ground : Continuity should not exist.**  
**15 (LG/R) – Ground : Continuity should not exist.**  
**22 (G/Y) – Ground : Continuity should not exist.**



OK or NG

OK >> GO TO 3.

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

### 3. CHECK RELEASE SWITCH POWER SUPPLY CIRCUIT

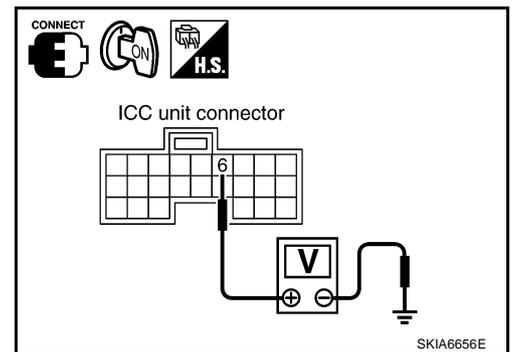
1. Connect ICC unit connector.
2. Turn ignition switch ON.
3. Check voltage between ICC unit harness connector M88 terminal 6 (GY/L) and ground.

**6 (GY/L) – Ground : Approx. 10 V**

OK or NG

OK >> GO TO 4.

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



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## 4. CHECK RELEASE SWITCH

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1. Turn ignition switch OFF.
2. Check release switch. Refer to [ACS-72, "Release Switch"](#) .

### OK or NG

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

## DTC 65 PRESSURE CONTROL

AKS00C8X

### 1. OPERATION CHECK

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Check foot brake pedal operates normally.

### OK or NG

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

## 2. CHECK BOOST SOLENOID

---

Check boost solenoid. Refer to [ACS-71, "Boost Solenoid"](#) .

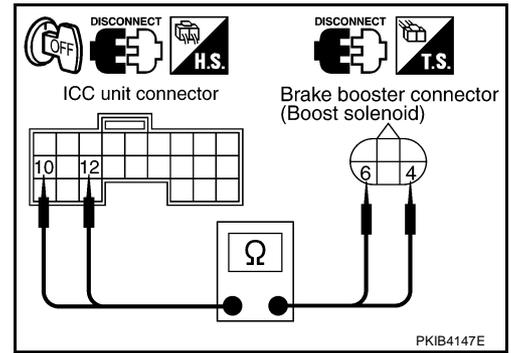
### OK or NG

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

**3. CHECK HARNESS BETWEEN SOLENOID/RELEASE SWITCH AND ICC UNIT**

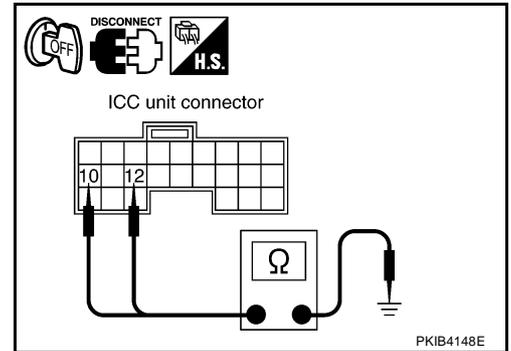
1. Turn ignition switch OFF.
2. Disconnect ICC unit connector and brake booster connector.
3. Check continuity between ICC unit harness connector M88 terminals 10 (B/R), 12 (L/W) and brake booster harness connector E54 terminals 4 (B), 6 (L).

**10 (B/R) – 4 (B) : Continuity should exist.**  
**12 (L/W) – 6 (L) : Continuity should exist.**



4. Check continuity between ICC unit harness connector M88 terminals 10 (B/R), 12 (L/W) and ground.

**10 (B/R) – Ground : Continuity should not exist.**  
**12 (L/W) – Ground : Continuity should not exist.**



OK or NG

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

**DTC 74 LASER BEAM OFF CNTR**

AKS00C8Y

**1. DIAGNOSTIC CHECK**

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

Is it indicated?

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

**DTC 90 STOP LAMP RLY FIX**

AKS00CAT

**1. CHECK CONNECTOR ICC UNIT**

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

Is malfunction indicated?

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

## 2. CHECK STOP LAMP SWITCH AND ICC BRAKE SWITCH

**With CONSULT-II**

With "DATA MONITOR", check that "STOP LAMP SW" and "BRAKE SW" operate normally. Refer to [ACS-32, "DATA MONITOR"](#).

OK or NG

- OK >> GO TO 12.
- NG >> ● BRAKE SW: GO TO 3.
- STOP LAMP SW: GO TO 9.

## 3. BRAKE SWITCH INSTALLATION AND ADJUSTMENT INSPECTION

Check brake switch for proper installation, and adjust the switch if necessary. Refer to [BR-6, "BRAKE PEDAL"](#).

OK or NG

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

## 4. CHECK ICC BRAKE SWITCH AND STOP LAMP SWITCH

Check ICC brake switch and stop lamp switch. Refer to [ACS-71, "ICC Brake Switch and Stop Lamp Switch"](#).

OK or NG

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

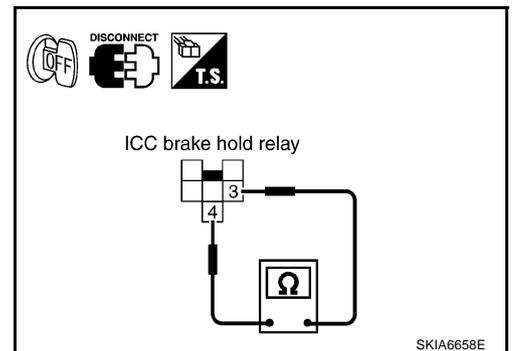
## 5. CHECK ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect ICC brake hold relay.
3. Check continuity between ICC brake hold relay terminals 3 and 4.

**3 – 4 : Continuity should exist.**

OK or NG

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



## 6. CHECK HARNESS BETWEEN ICC UNIT AND ICC BRAKE HOLD RELAY

1. Disconnect ICC brake switch connector, ECM connector and ICC unit connector.
2. Check continuity between ICC unit harness connector M89 terminal 29 (SB) and ICC brake hold relay harness connector E14 terminal 4 (SB).

**29 (SB) – 4 (SB) : Continuity should exist.**

3. Check continuity between ICC unit harness connector M89 terminal 29 (SB) and ground.

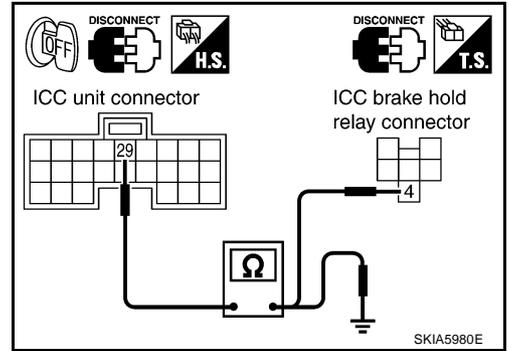
**29 (SB) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> 1. Repair harness between ICC unit and ICC brake hold relay.

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



## 7. CHECK HARNESS BETWEEN ICC BRAKE HOLD RELAY AND ICC BRAKE SWITCH

1. Check continuity between ICC brake hold relay harness connector E14 terminal 3 (L) and ICC brake switch harness connector E209 terminal 2 (L).

**3 (L) – 2 (L) : Continuity should exist.**

2. Check continuity between ICC brake hold relay harness connector E14 terminal 3 (L) and ground.

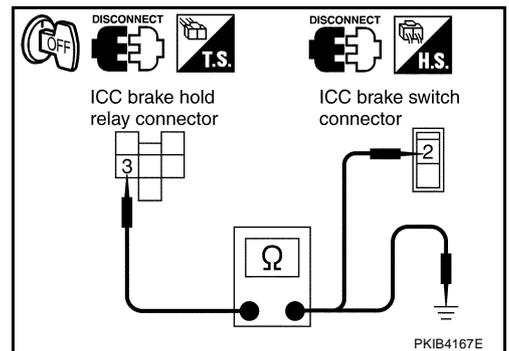
**3 (L) – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 8.

NG >> 1. Repair harness between ICC brake hold relay and ICC brake switch.

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



## 8. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between ICC brake switch harness connector E209 terminal 1 (Y) and ground.

**1 (Y) – Ground : Battery voltage**

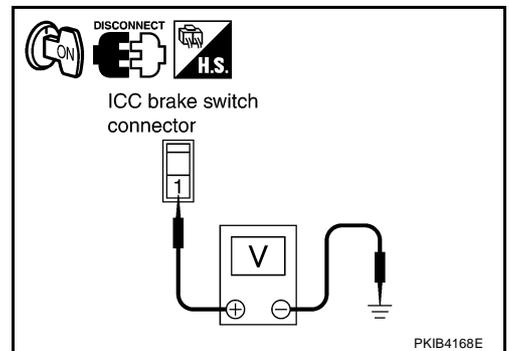
OK or NG

OK >> 1. Replace ICC unit.

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

NG >> 1. Repair or replace harness or fuse.

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



## 9. CHECK STOP LAMP ILLUMINATION

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

OK or NG

OK >> GO TO 10.

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

## 10. CHECK ICC BRAKE HOLD RELAY CIRCUIT

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

OK or NG

OK >> 1. Replace ICC unit.

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

NG >> GO TO 11.

## 11. CHECK ICC BRAKE HOLD RELAY

1. Disconnect ICC brake hold relay.
2. Check continuity between ICC brake hold relay terminal 6 and terminal 7.

**6 – 7 : Continuity should not exist.**

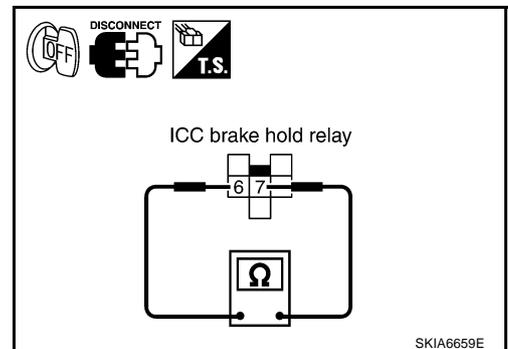
OK or NG

OK >> 1. Replace ICC unit.

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

NG >> 1. Replace ICC brake hold relay.

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



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

1. Disconnect ICC unit connector and ICC brake hold relay.
2. Check continuity between ICC unit harness connector M89 terminal 47 (W/R) and ICC brake hold relay harness connector E14 terminal 1 (W).

**47 (W/R) – 1 (W) : Continuity should exist.**

3. Check continuity between ICC unit harness connector M89 terminal 47 (W/R) and ground.

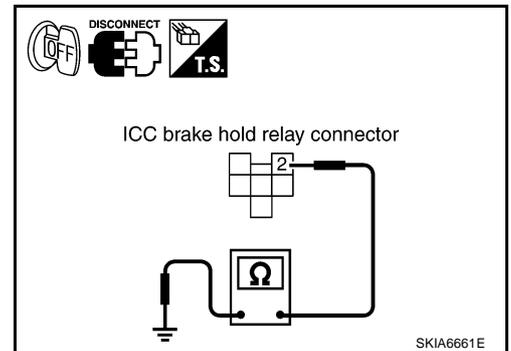
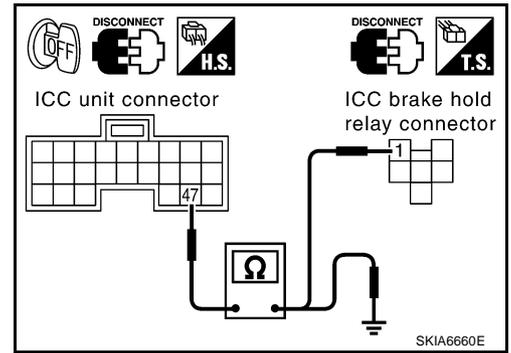
**47 (W/R) – Ground : Continuity should not exist.**

4. Check continuity between ICC brake hold relay harness connector E14 terminal 2 (B) and ground.

**2 (B) – Ground : Continuity should exist.**

**OK or NG**

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



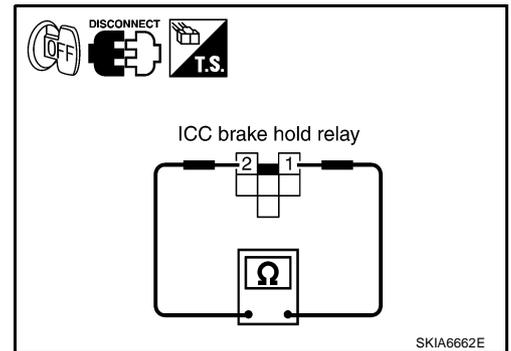
## 13. CHECK ICC BRAKE HOLD RELAY

Check continuity between ICC brake hold relay terminal 1 and terminal 2.

**1 – 2 : Continuity should exist.**

**OK or NG**

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



## 14. CHECK ICC UNIT STANDARD VOLTAGE

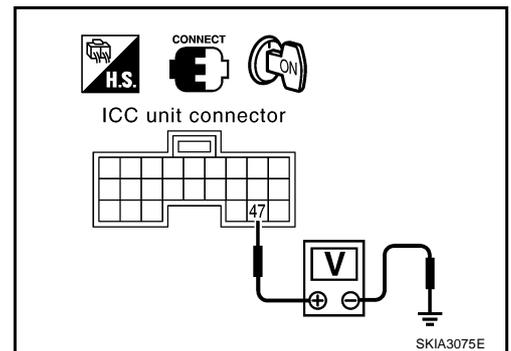
**Ⓟ With CONSULT-II**

1. Connect ICC unit connector and stop lamp switch connector.
2. Active test (“STOP LAMP”：“STP LMP DRIVE ON”) with CONSULT-II, check voltage between ICC unit harness connector M89 terminal 47 (W/R) and ground.

**47 (W/R) – Ground : Approx. 12 V (during active test)**

**OK or NG**

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



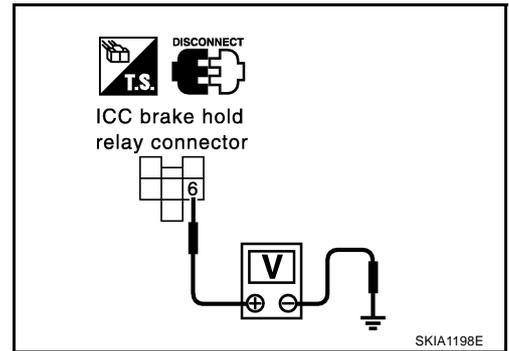
## 15. CHECK ICC BRAKE HOLD RELAY POWER SUPPLY CIRCUIT

Check voltage between ICC brake hold relay harness connector E14 terminal 6 (G/Y) and ground.

**6 (G/Y) – Ground : Battery voltage**

OK or NG

- OK >> GO TO 16.
- NG >> 1. Repair or replace harness or fuse.
- 2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.



## 16. CHECK HARNESS BETWEEN ICC UNIT AND ICC BRAKE HOLD RELAY

1. Turn ignition switch OFF.
2. Disconnect ICC unit and ICC brake hold relay connector.
3. Check continuity between ICC unit harness connector M89 terminal 38 (P/B) and ICC brake hold relay harness connector E14 terminal 7 (P).

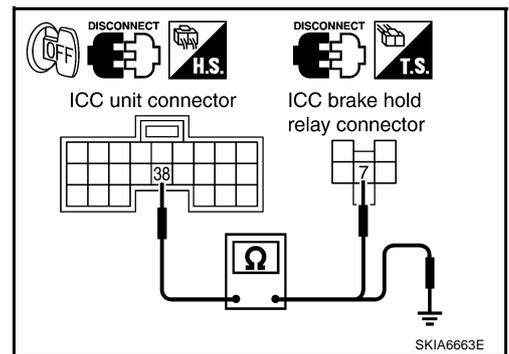
**38 (P/B) – 7 (P) : Continuity should exist.**

4. Check continuity between ICC unit harness connector M89 terminal 38 (P/B) and ground.

**38 (P/B) – Ground : Continuity should not exist.**

OK or NG

- OK >> GO TO 17.
- NG >> 1. Repair harness between ICC unit and ICC brake hold relay.
- 2. Erase DTC and perform ICC system running test. Then, perform self-diagnosis of ICC system again.



## 17. CHECK ICC BRAKE HOLD RELAY

**With CONSULT-II**

1. Connect ICC unit connector and ICC brake hold relay.
2. Disconnect stop lamp switch connector.
3. Perform "ACTIVE TEST" ("STOP LAMP") with CONSULT-II, and make sure that stop lamp is illuminated.

OK or NG

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

## 18. CHECK ICC UNIT STANDARD VOLTAGE

1. Connect stop lamp switch connector.
2. Perform "ACTIVE TEST" ("STOP LAMP": "STP LMP DRIVE ON") with CONSULT-II, check voltage between ICC unit harness connector M89 terminal 29 (SB) and ground.

**29 (SB) – Ground : Approx. 0 V (during active test)**

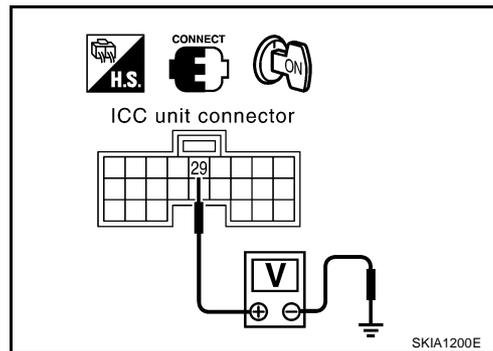
**OK or NG**

**OK** >> 1. Replace ICC unit.

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

**NG** >> 1. Replace stop lamp switch.

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



## DTC 92 ECM CIRCUIT

AKS00C90

### 1. CHECK ICC UNIT SELF-DIAGNOSIS

**Ⓜ With CONSULT-II**

1. Perform self-diagnosis with CONSULT-II.
2. Check if "DTC 20 CAN COMM CIRCUIT" other than "DTC 92 ECM CIRCUIT" is indicated in self-diagnosis item in the display.

**Is it indicated?**

**YES** >> 1. Repair or replace applicable item.

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

**NO** >> GO TO 2.

### 2. CHECK ECM SELF-DIAGNOSIS

**Ⓜ With CONSULT-II**

1. Perform ECM self-diagnosis with CONSULT-II.
2. Check if malfunction is indicated.

**Is malfunction indicated?**

**YES** >> 1. Repair or replace applicable item.

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

**NO** >> 1. Replace ICC unit.

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

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## DTC 96 NP RANGE

### 1. CHECK CONNECTOR ICC UNIT

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

Is malfunction indicated?

YES >> GO TO 2.

NO >> Poor connector connection

1. Check connector. (Check connector housing for disconnected, loose, bent, and collapsed terminals. If any malfunction is detected, repair applicable part.)
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

### 2. CHECK NP RANGE SWITCH SIGNAL

 **With CONSULT-II**

With "DATA MONITOR", check that "NP RANGE SW" operates normally. Refer to [ACS-32, "DATA MONITOR"](#)

OK or NG

OK >> GO TO 5.

NG >> GO TO 3.

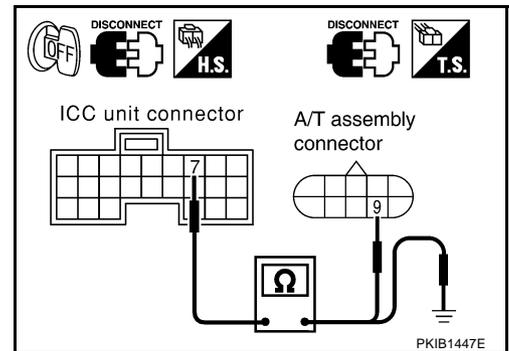
### 3. CHECK HARNESS BETWEEN ICC UNIT AND TCM

1. Turn ignition switch OFF.
2. Disconnect ICC unit harness connector and A/T assembly harness connector.
3. Check continuity between ICC unit harness connector M88 terminal 7 (GY/R) and A/T assembly harness connector F44 terminal 9 (GY).

**7 (GY/R) – 9 (GY) : Continuity should exist.**

4. Check continuity between ICC unit harness connector M88 terminal 7 (GY/R) and ground.

**7 (GY/R) – Ground : Continuity should not exist.**



OK or NG

OK >> GO TO 4.

NG >> 1. Repair harness between ICC unit and A/T assembly.

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

### 4. CHECK TCM START SIGNAL CIRCUIT

Check TCM start signal. Refer to [AT-109, "DTC P0615 START SIGNAL CIRCUIT"](#).

OK or NG

OK >> 1. Replace ICC unit.

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

NG >> 1. Repair or replace damaged parts.

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

## 5. CHECK SHIFT POSITION SIGNAL

### With CONSULT-II

With TCM diagnosis, check that shift operates normally. Refer to [AT-114, "DTC P0705 PARK/NEUTRAL POSITION SWITCH"](#).

#### OK or NG

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

## DTC 97 AT CIRCUIT

AKS00C92

### 1. CHECK AT CIRCUIT

### With CONSULT-II

With TCM diagnosis, check that shift operates normally. Refer to [AT-114, "DTC P0705 PARK/NEUTRAL POSITION SWITCH"](#).

#### OK or NG

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

## DTC 98 GEAR POSITION

AKS00C93

### 1. CHECK ICC UNIT SELF-DIAGNOSIS

### With CONSULT-II

- Perform self-diagnosis.
- Check if "DTC 43 ABS/TCS/VDC CIRC" or "DTC 41 VHCL SPEED SE CIRC" other than "DTC 98 GEAR POSITION" is indicated in self-diagnosis item in the display.

#### Is any indicated?

- YES >> 1. Repair or replace applicable item.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.
- NO >> GO TO 2.

## 2. CHECK VEHICLE SPEED SIGNAL

### With CONSULT-II

With "DATA MONITOR", check that "VHCL SPEED SE" is normal.

#### OK or NG

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

### 3. CHECK SHIFT GEAR POSITION

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Check that gear positions are correct in A/T.

OK or NG

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

### 4. CHECK TCM GEAR POSITION SIGNAL

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 **With CONSULT-II**

With TCM "DATA MONITOR" with CONSULT-II, check that gear positions are correct.

OK or NG

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

### 5. CHECK TCM TURBINE ROTATION

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 **With CONSULT-II**

With TCM diagnosis, check that turbine rpm is normal. Refer to [AT-141, "DTC P1716 TURBINE REVOLUTION SENSOR"](#).

OK or NG

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

## DTC 102 RADAR STAIN

AKS00C94

### 1. VISUAL INSPECTION 1

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

OK or NG

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

### 2. VISUAL INSPECTION 2

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Check ICC sensor body window for cracks.

OK or NG

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

**3. ASKING COMPLAINTS**

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

Is there any symptom?

- YES >> Explain difference in displays between contamination detection result and current indication to customer, and tell them "This is not malfunction".
- NO >> 1. Replace ICC sensor, and adjust laser beam aiming.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

**DTC 103 LASER SENSOR FAIL**

AKS00C95

**1. CHECK ICC UNIT SELF-DIAGNOSIS**

1. Perform self-diagnosis.
2. Check if "DTC 11 CONTROL UNIT" or "DTC 20 CAN COMM CIRCUIT" item other than "DTC 103 LASER SENSOR FAIL" is indicated in self-diagnosis item in the display.

Is any indicated?

- YES >> Go to applicable item inspection. Refer to [ACS-42, "DTC 11 CONTROL UNIT"](#) , and [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#) .
- NO >> 1. Replace ICC sensor, and adjust laser beam aiming.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

**DTC 104 LASER AIMING INCMP**

AKS00C96

**1. CHECK DIAGNOSIS**

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

Is it indicated?

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

**DTC 107 LASER COMM FAIL**

AKS00C97

**1. CHECK ICC UNIT SELF-DIAGNOSIS**

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

Is any indicated?

- YES >> Go to applicable item inspection. Refer to [ACS-42, "DTC 11 CONTROL UNIT"](#) , and [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#) .
- NO >> 1. Replace ICC sensor, and adjust laser beam aiming.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

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## DTC 109 LASER HIGH TEMP

AKS00C98

### 1. CHECK SYMPTOM

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Check if cooling system malfunctions.

Does it malfunction?

YES >> 1. Repair cooling system.

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

NO >> 1. Replace ICC sensor, and adjust laser beam aiming.

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

# TROUBLE DIAGNOSIS FOR SYMPTOMS

[ICC]

## TROUBLE DIAGNOSIS FOR SYMPTOMS

PFP:00007

### Symptom Chart

AKS006ZN

|                                      | Symptoms  | Reference page   |
|--------------------------------------|---|--|
| Operation                            | MAIN switch does not switch ON.                                       | Symptom 1<br><a href="#">ACS-66</a>  |
|                                      | MAIN switch does not switch OFF.                                      | Symptom 1<br><a href="#">ACS-66</a>  |
|                                      | Cruise does not function for setting (powering functions).            | Symptom 2<br><a href="#">ACS-66</a>  |
|                                      | CANCEL switch does not function.                                      | Symptom 3<br><a href="#">ACS-67</a>  |
|                                      | Resume does not function.   | Symptom 3<br><a href="#">ACS-67</a>  |
|                                      | Set speed does not increase.  | Symptom 3<br><a href="#">ACS-67</a>  |
|                                      | Set distance to the vehicle ahead cannot be changed.                  | Symptom 3<br><a href="#">ACS-67</a>  |
|                                      | ICC is not cancelled when the gear is in other than "D".              | Symptom 4<br><a href="#">ACS-68</a>  |
| Display/Chime                        | ICC system display does not appear.                                   | Check combination meter. Refer to <a href="#">DI-15</a> ,<br>"Trouble Diagnosis" .   |
|                                      | Chime does not function.  | Symptom 5<br><a href="#">ACS-68</a>  |
| Control                              | Driving force is hunting.   | Symptom 6<br><a href="#">ACS-69</a>  |
| Function to detect the vehicle ahead | System frequently cannot detect the vehicle ahead.                    | Symptom 7<br><a href="#">ACS-69</a>  |
|                                      | Distance to detect the vehicle ahead is short.                        | Symptom 7<br><a href="#">ACS-69</a>  |
|                                      | System misidentifies a vehicle even though there is no vehicle ahead. | <ul style="list-style-type: none"> <li>● Refer to <a href="#">ACS-12</a>, "LASER BEAM AIMING ADJUSTMENT" .</li> <li>● Refer to <a href="#">ACS-9</a>, "ICC System Running Test" .</li> </ul> |
|                                      | System misidentifies a vehicle in the next lane.                      | <ul style="list-style-type: none"> <li>● Refer to <a href="#">ACS-12</a>, "LASER BEAM AIMING ADJUSTMENT" .</li> <li>● Refer to <a href="#">ACS-9</a>, "ICC System Running Test" .</li> </ul> |
|                                      | System does not detect a vehicle at all.                              | Symptom 8<br><a href="#">ACS-70</a>  |

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## Symptom 1: MAIN Switch Does Not Turn ON\*<sup>1</sup> , MAIN Switch Does Not Turn OFF\*<sup>2</sup>

AKS00C99

### NOTE:

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

### 1. CHECK MAIN SWITCH

#### With CONSULT-II

With "DATA MONITOR", check that MAIN switch operates normally.

#### OK or NG

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

### 2. CHECK CONNECTOR ICC UNIT

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

#### OK or NG

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

### 3. CHECK ICC UNIT SELF-DIAGNOSIS

#### With CONSULT-II

1. Perform self-diagnosis with CONSULT-II.
2. Check if "DTC 20 CAN COMM CIRCUIT" is indicated.

#### Is it indicated?

- YES >> Refer to [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#) .  
NO >> Refer to [ACS-47, "DTC 46 OPERATION SW CIRC"](#) .

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

AKS00C9A

The ICC cannot be set in the following cases.

- When the vehicle speed is not in range of approx. 25 MPH (40 km/h) to 90 MPH (144 km/h).
- When the A/T selector lever is in gears other than 'D'.
- While the brake is in operation.

### 1. CHECK CAUSE OF AUTOMATIC CANCELLATION

#### With CONSULT-II

With "CAUSE OF AUTO-CANCEL" in "WORK SUPPORT", check if any cause of cancellation exists.

#### OK or NG

- OK >> Cancel with appropriate cause, and go to specified diagnosis.
- "OPE SW VOLT CIRC": Refer to [ACS-47, "DTC 46 OPERATION SW CIRC"](#) .
  - "VHCL SPD UNMATCH": Refer to [ACS-44, "DTC 41 VHCL SPEED SE CIRC"](#) .
  - "IGN LOW VOLT": Refer to [ACS-43, "DTC 31 POWER SUPPLY CIR, DTC 34 POWER SUPPLY CIR 2"](#) .
- NG >> GO TO 2.

## 2. CHECK ICC UNIT SELF-DIAGNOSIS

### ④ With CONSULT-II

Perform CONSULT-II self-diagnosis to check for malfunctioning items.

#### OK or NG

OK >> GO TO 3.

NG >> 1. Repair or replace applicable item.

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

## 3. CHECK SWITCHES AND VEHICLE SPEED SIGNAL

### ④ With CONSULT-II

With "DATA MONITOR", check that switches and vehicle speed signal operate normally. Refer to [ACS-32, "DATA MONITOR"](#).

- VHCL SPEED SE
- D RANGE SW
- BRAKE SW
- SET/COAST SW

#### OK or NG

OK >> 1. Replace ICC unit.

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

NG >> ● VHCL SPEED SE. Refer to [ACS-44, "DTC 41 VHCL SPEED SE CIRC"](#).

● D RANGE SW. Refer to [ACS-68, "Symptom 4: ICC System Is Not Cancelled When the Gear Is in Other Than "D""](#).

● BRAKE SW. Refer to [ACS-45, "DTC 45 BRAKE SW/STOP L SW"](#).

● SET/COAST SW. Refer to [ACS-47, "DTC 46 OPERATION SW CIRC"](#).

## Symptom 3: ICC System Cannot Be Operated by CANCEL Switch, RESUME/ACCELERATE Switch or DISTANCE Switch

AKS00C9B

RESUME does not function in the following cases.

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

## 1. CHECK SWITCHES

### ④ With CONSULT-II

With "DATA MONITOR", check that switches operate normally.

"RESUME/ACC SW", "CANCEL SW", "DISTANCE ADJ". Refer to [ACS-32, "DATA MONITOR"](#).

#### OK or NG

OK >> 1. Replace ICC unit.

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

NG >> GO TO 2.

## 2. CHECK ICC UNIT SELF-DIAGNOSIS

### ④ With CONSULT-II

1. Perform self-diagnosis with CONSULT-II.

2. Check if "DTC 20 CAN COMM CIRCUIT" is indicated.

#### Is it indicated?

YES >> Refer to [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#).

NO >> Refer to [ACS-47, "DTC 46 OPERATION SW CIRC"](#).

**Symptom 4: ICC System Is Not Cancelled When the Gear Is in Other Than "D"**

AKS00C9C

**1. CHECK D RANGE SWITCH****Ⓟ With CONSULT-II**

With "DATA MONITOR", check that "D RANGE SW" operates normally. Refer to [ACS-32, "DATA MONITOR"](#).

**OK or NG**

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

**2. CHECK ICC UNIT SELF-DIAGNOSIS****Ⓟ With CONSULT-II**

1. Perform self-diagnosis with CONSULT-II.
2. Check if "DTC 20 CAN COMM CIRCUIT" is indicated.

**Is it indicated?**

- YES >> Refer to [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#).
- NO >> GO TO 3.

**3. CHECK D RANGE SWITCH**

With TCM "DATA MONITOR", check that "D" position switch operates normally.

**OK or NG**

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

**Symptom 5: Chime Does Not Sound**

AKS006ZS

The chime may not sound occasionally in the following cases even if the distance from the vehicle ahead is short:

- When the speed difference from that of the vehicle ahead is small (both vehicles driving at similar speed).
- When the vehicle ahead drives at faster speed (the actual distance is increasing).
- When depressing the accelerator.
- Chime does not sound when the vehicle is not driving.
- Chime does not sound when the system does not detect any vehicle ahead. (Diagnose the conditions under which the system is detecting the vehicle ahead and when the system is malfunctioning. If there is any malfunction in detecting the vehicle ahead, check the system following the [ACS-69, "Symptom 7: ICC System Frequently Cannot Detect the Vehicle Ahead/ Detection Zone Is Short"](#)).

**1. CHECK ICC WARNING CHIME****Ⓟ With CONSULT-II**

With "ACTIVE TEST", check that ICC warning chime operates normally.

**OK or NG**

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

## 2. CHECK CAN COMMUNICATION

### With CONSULT-II

1. Perform self-diagnosis with CONSULT-II.
2. Check if "DTC 20 CAN COMM CIRCUIT" is indicated.

Is it indicated?

- YES >> Refer to [ACS-43, "DTC 20 CAN COMM CIRCUIT"](#) .
- NO >> GO TO 3.

## 3. CHECK UNIFIED METER AND A/C AMP.

Perform self-diagnosis of unified meter and A/C amp. Refer to [DI-31, "CONSULT-II Function \(METER A/C AMP\)"](#) .

OK or NG

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

### Symptom 6: Driving Force Is Hunting

AKS00C9D

#### 1. CHECK ECM SELF-DIAGNOSIS

Perform self-diagnosis of ECM.

OK or NG

- OK >> Refer to [ACS-69, "Symptom 7: ICC System Frequently Cannot Detect the Vehicle Ahead/ Detection Zone Is Short"](#) .
- NG >> 1. Repair or replace applicable parts.  
2. Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

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

AKS00C9E

ACS

The detection function may become unstable in the following cases.

- When the reflector of the vehicle ahead is deficient/ not clean enough to reflect the radar.
- When driving a road with extremely sharp corners.
- When the radar cannot detect the reflector of the vehicle ahead as the vehicle ahead is passing a hill or passing the peak.

#### 1. VISUAL CHECK

Check ICC sensor body window for contamination and foreign materials.

OK or NG

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

## 2. CHECK FUNCTION

---

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

### OK or NG

OK >> INSPECTION END

NG >> 1. Replace ICC sensor, and perform laser beam aiming adjustment.

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

## Symptom 8: The System Does Not Detect the Vehicle Ahead at All

AKS00C9F

### 1. VISUAL CHECK 1

---

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

### OK or NG

OK >> GO TO 2.

NG >> Check for combination meter. Refer to [DI-15, "Trouble Diagnosis"](#) .

### 2. VISUAL CHECK 2

---

Check ICC sensor body window for contamination and foreign materials.

### OK or NG

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

NG >> GO TO 3.

### 3. VISUAL CHECK 3

---

Check ICC sensor body window for cracks and scratches.

### OK or NG

OK >> GO TO 4.

NG >> 1. Replace ICC sensor, and perform laser beam aiming adjustment.

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

### 4. ADJUST ICC SENSOR

---

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

### OK or NG

OK >> INSPECTION END

NG >> 1. Replace ICC sensor, and perform laser beam aiming adjustment.

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

## ELECTRICAL COMPONENT INSPECTION

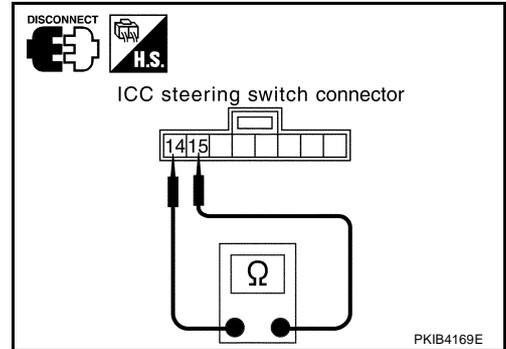
PFP:00000

### ICC Steering Switch

AKS006ZX

1. Disconnect ICC steering switch.
2. Check resistance between M203 terminals 14 and 15 by pressing each switch.

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

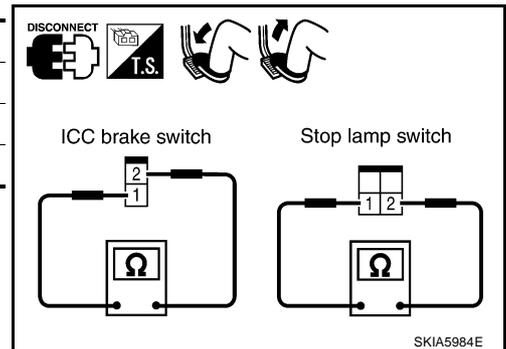


### ICC Brake Switch and Stop Lamp Switch

AKS006ZY

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

**Check each switch after adjusting brake pedal, refer to [BR-6](#), "BRAKE PEDAL".**

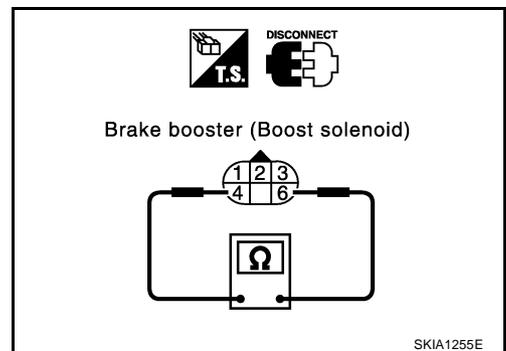


### Boost Solenoid

AKS006ZZ

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

**4 – 6 : Approx. 1.4 Ω**



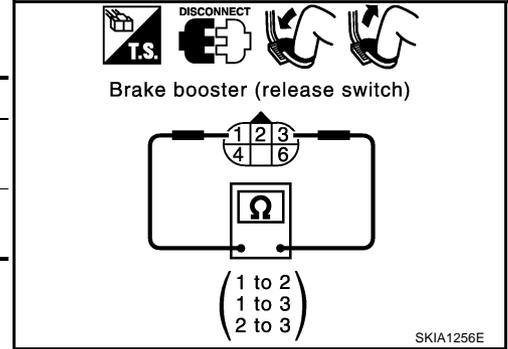
## Release Switch

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

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

**NOTE:**

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

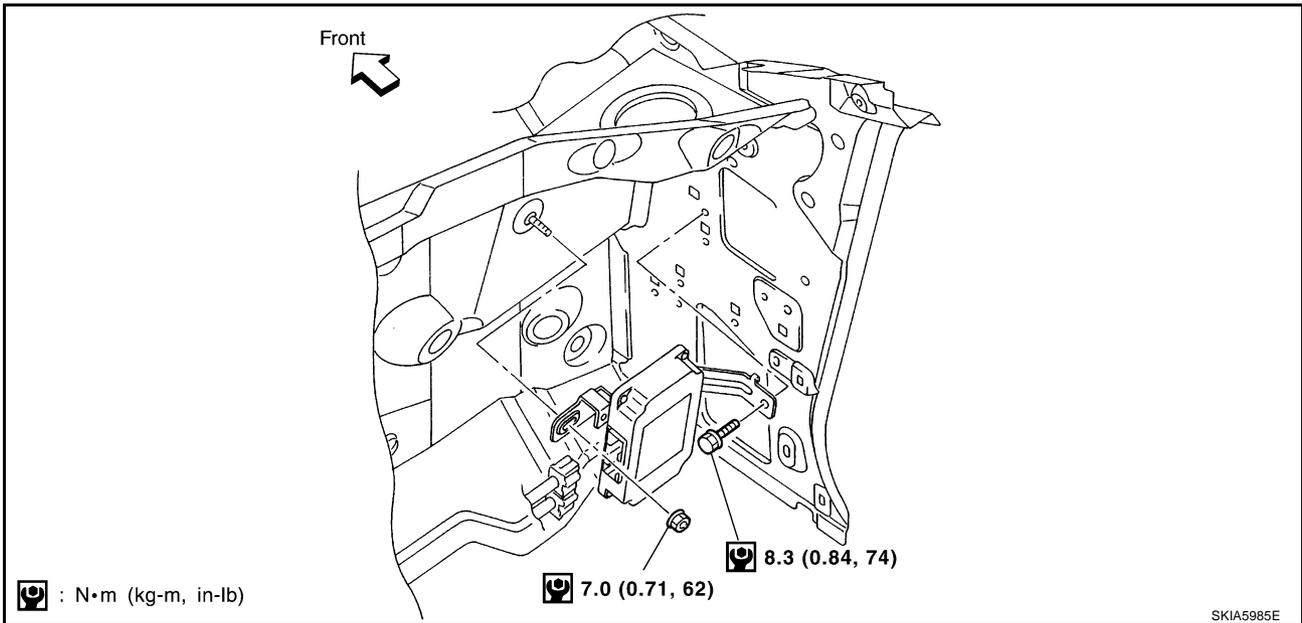


## REMOVAL AND INSTALLATION

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### ICC Unit

AKS00704



### REMOVAL

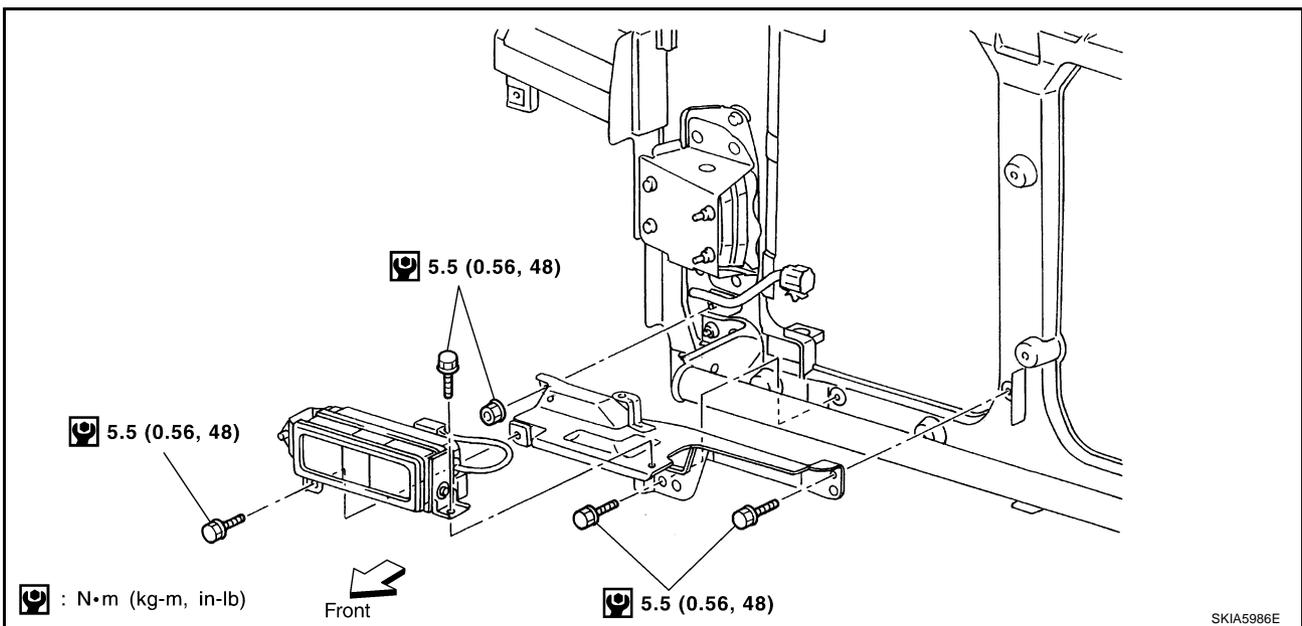
1. Remove the instrument passenger lower panel. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Remove the ECM.
3. Disconnect ICC unit connector.
4. Remove a mounting bolt and a nut from ICC unit.

### INSTALLATION

Installation is the reverse order of removal.

### ICC Sensor

AKS00705



### REMOVAL

1. Remove the front bumper. Refer to [EI-14, "FRONT BUMPER"](#).
2. Disconnect ICC sensor connector.
3. Remove mounting bolts from ICC sensor.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

ACS

L  
M

## INSTALLATION

Installation is the reverse order of removal.

### **CAUTION:**

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

## ICC Steering Switch

AKS00707

Refer to [PS-12, "Removal and Installation"](#) .