SECTION WT
ROAD WHEELS & TIRES

CONTENTS

PRECAUTIONS

PFP:00001

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

EES002E4

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.**

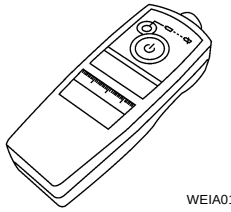
PREPARATION

PFP:00002

Special Service Tool

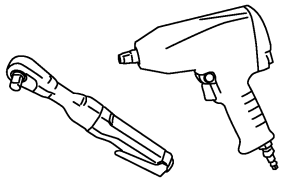
EES002DC

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

Tool number (Kent-Moore No.) Tool name	Description
KV991B1000 (J-45295) Transmitter activation tool  WEIA0144E	● Wake up ● ID registration

Commercial Service Tools

EES002DD

Tool name	Description
Power tool  PBIC0190E	Removing wheel nuts

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

EES0019D

Use the chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Reference page			WT-5	WT-6	WT-36	WT-7	—	—	WT-36	—	FAX-4, "NVH Troubleshooting Chart", FSU-4, "NVH Troubleshooting Chart"	RAX-4, "NVH Troubleshooting Chart", RSU-4, "NVH Troubleshooting Chart"	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	BR-5, "NVH Troubleshooting Chart"	PS-5, "NVH Troubleshooting Chart"
Possible cause and SUSPECTED PARTS			Out-of-round	Imbalance	Incorrect tire pressure	Uneven tire wear	Deformation or damage	Non-uniformity	Incorrect tire size	DIFFERENTIAL (Transaxle)	FRONT AXLE AND FRONT SUSPENSION	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEEL	BRAKE	STEERING
Symptom	TIRES	Noise	×	×	×	×	×	×		×	×	×		×	×	×
		Shake	×	×	×	×	×		×		×	×		×	×	×
		Vibration			×				×		×	×				×
		Shimmy	×	×	×	×	×	×	×		×	×		×	×	×
		Shudder	×	×	×	×	×		×		×	×		×	×	×
		Poor quality ride or handling	×	×	×	×	×		×		×	×		×		
	ROAD WHEEL	Noise	×	×			×			×	×	×	×		×	×
		Shake	×	×			×				×	×	×		×	×
		Shimmy, Shudder	×	×			×				×	×	×		×	×
		Poor quality ride or handling	×	×			×				×	×	×			

×: Applicable

WHEEL

PFP:40300

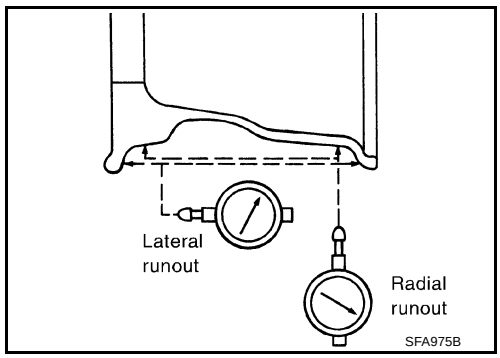
Inspection

EES0019E

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.

a. Remove tire from wheel and mount wheel on a tire balance machine.

b. Set dial indicator as shown in the illustration.



Wheel runout (Dial indicator value): Refer to WT-36, "Road Wheel" .

3. Check front wheel bearings for looseness.
4. Check front suspension for looseness.

WHEEL AND TIRE ASSEMBLY

PFP:40300

Balancing Wheels

EES0019F

REMOVAL

1. Remove inner and outer balance weights from the wheel.

   CAUTION:
   Be careful not to scratch the wheel during removal procedures.

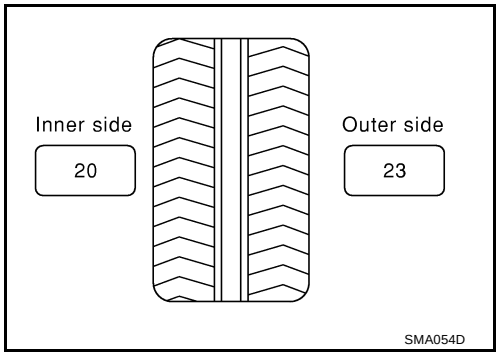
2. Using releasing agent, remove double-faced adhesive tape from the wheel.

   CAUTION:
   - **Be careful not to scratch the wheel during removal.**
   - **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the wheel.**

WHEEL BALANCE ADJUSTMENT

NOTE:
If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for wheels.

1. Set wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the wheel balancer indicator, multiply outer unbalance value by 1.6 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value and install it to the designated outer position of, or at the designated angle in relation to the road wheel.

   CAUTION:
   - **Do not install the inner balance weight before installing the outer balance weight.**
   - **Before installing the balance weight, be sure to clean the mating surface of the wheel.**

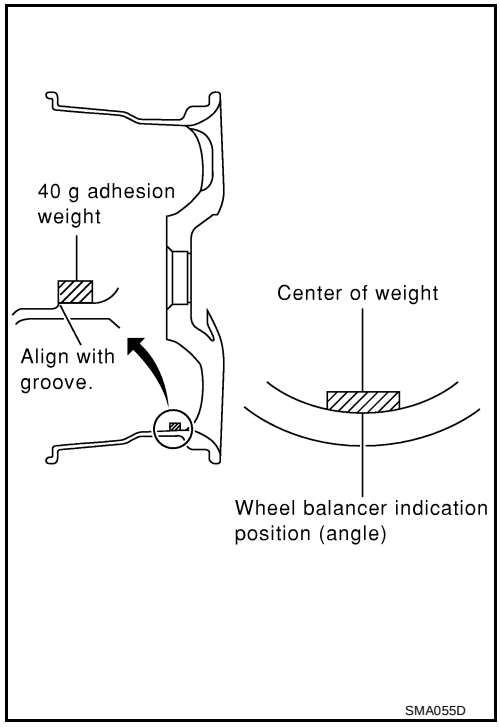
   Indicated unbalance value × 5/3 = balance weight to be installed
   Calculation example:
   23 g (0.81 oz.) × 5/3 = 38.33 g (1.35 oz.) = 40 g (1.41 oz.) balance weight (closer to calculated balance weight value)
   Note that balance weight value must be closer to the calculated balance weight value.
   Example:
   37.4 g = 35 g (1.23 oz.)
   37.5 g = 40 g (1.41 oz.)

a. Install balance weight in the position shown.

b. When installing balance weight to wheels, set it into the grooved area on the inner wall of the wheel as shown so that the balance weight center is aligned with the wheel balancer indication position (angle).

CAUTION:

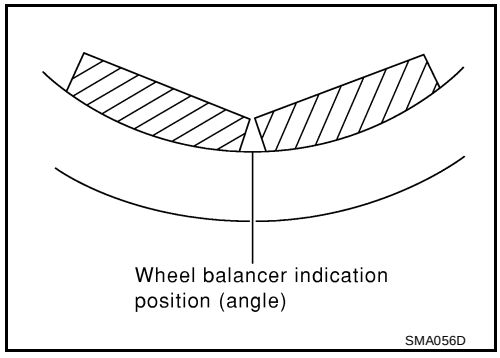
- **Always use genuine Nissan adhesion balance weights.**
- **Balance weights are not reusable; always replace with new ones.**
- **Do not install more than three sheets of balance weight.**



c. If calculated balance weight value exceeds 50 g (1.76 oz.), install two balance weight sheets in line with each other as shown.

CAUTION:

Do not install one balance weight sheet on top of another.



3. Start wheel balancer again.
4. Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).

CAUTION:

Do not install more than two balance weights.

5. Start wheel balancer. Make sure that inner and outer residual unbalance values are 5 g (0.18 oz.) each or below.
   - If either residual unbalance value exceeds 5 g (0.18 oz.), repeat installation procedures.

Wheel Balance (Maximum Allowable Unbalance)

Maximum allowable unbalance	Dynamic (At rim flange)	5 g (0.18 oz.) (one side)
	Static	10 g (0.35 oz.)

Tire Rotation

EES0019G

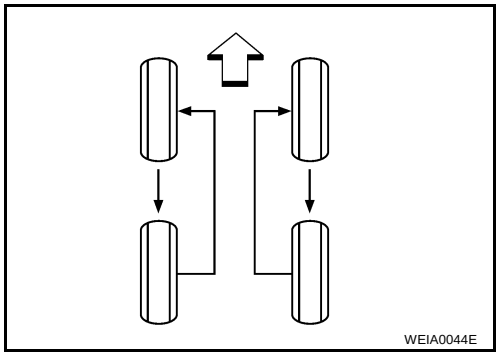
- Follow the maintenance schedule for tire rotation service intervals. Refer to MA-6, "PERIODIC MAINTENANCE" .

- Do not include the T-type spare tire when rotating the tires as shown.
- Tighten wheel nuts to specification.

CAUTION:
When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.

Wheel nut : 108 N·m (11 kg-m, 80 ft-lb)

- After rotating the tires, adjust the tire pressure.

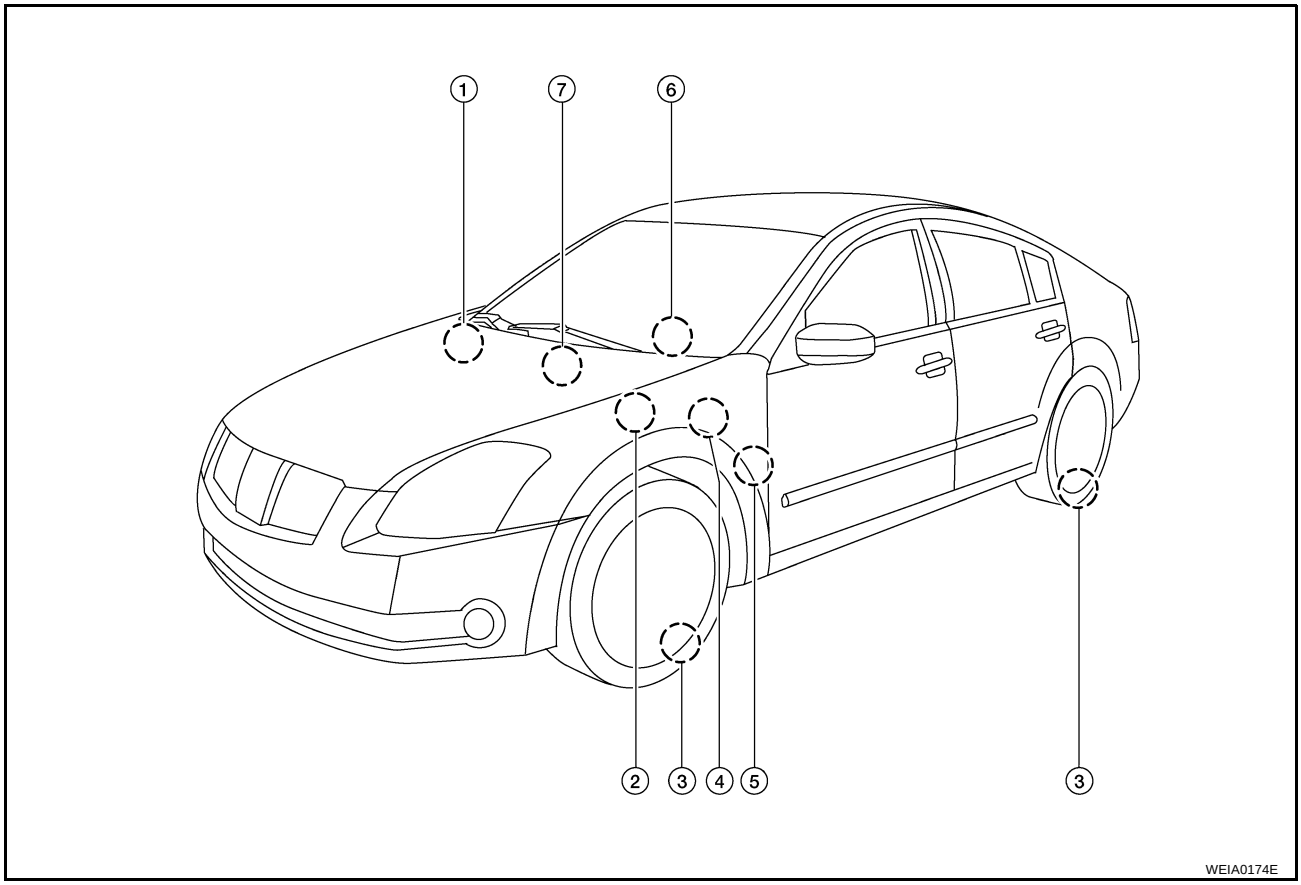


LOW TIRE PRESSURE WARNING SYSTEM

PFP:40300

System Components

EES002E5



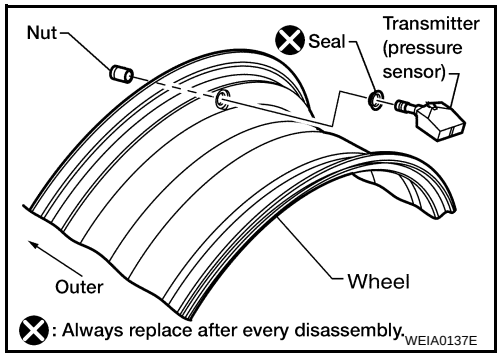
1. Remote keyless entry receiver M120
2. Display control unit, M94, M95 Unified meter and A/C AMP. M49, M50
3. Transmitters
4. Tire pressure warning check connector M123
5. BCM M18, M20
6. Combination meter M24
7. Display unit M93

System Description

EES002E6

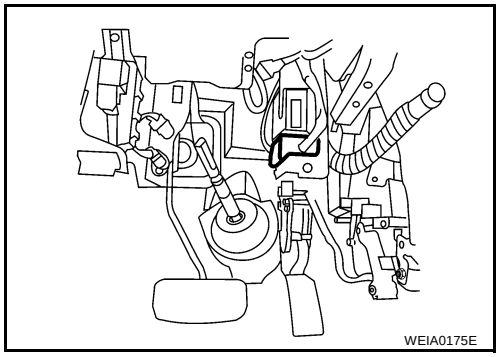
TRANSMITTER

A sensor-transmitter integrated with a valve is installed in each wheel, and transmits a detected air pressure signal in the form of a radio wave.



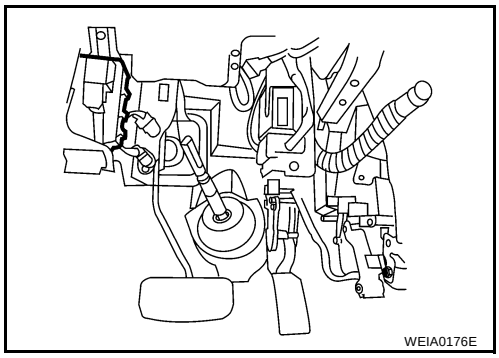
REMOTE KEYLESS ENTRY RECEIVER

The remote keyless entry receiver is shown with the steering column removed. The remote keyless entry receiver receives the air pressure signal transmitted by the transmitter in each wheel.


WEIA0175E

BODY CONTROL MODULE (BCM)

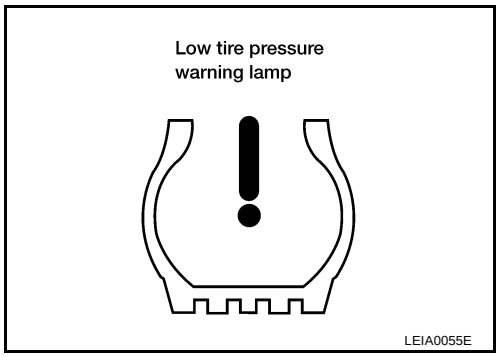
The BCM is shown with the steering column removed. The BCM reads the air pressure signal received by the remote keyless entry receiver, and controls the low tire pressure warning lamp as shown below. It also has a self-diagnosis function to detect a system malfunction.


WEIA0176E

Condition	Low tire pressure warning lamp
System normal	On for 1 second after ignition ON
Tire less than 193 kPa (2.0 kg/cm^2 , 28 psi) [Flat tire]	ON
Low tire pressure system malfunction	After key ON, flashes once per second for 1 minute, then stays ON

COMBINATION METER

The combination meter receives tire pressure status from the BCM using CAN communication. When a low tire pressure condition is sensed by the BCM, the combination meter low tire pressure warning lamp is activated.



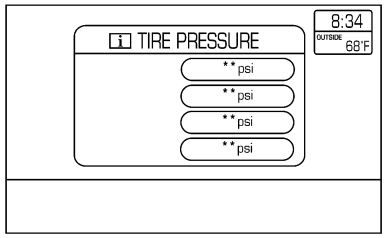
LEIA0055E

DISPLAY UNIT

Displays the air pressure of each tire.

- After the ignition switch is turned ON, the pressure values are not displayed until the data of each wheel is received.

With color display



WEIA0143E

CAN COMMUNICATION

PFP:23710

System Description

EES002DI

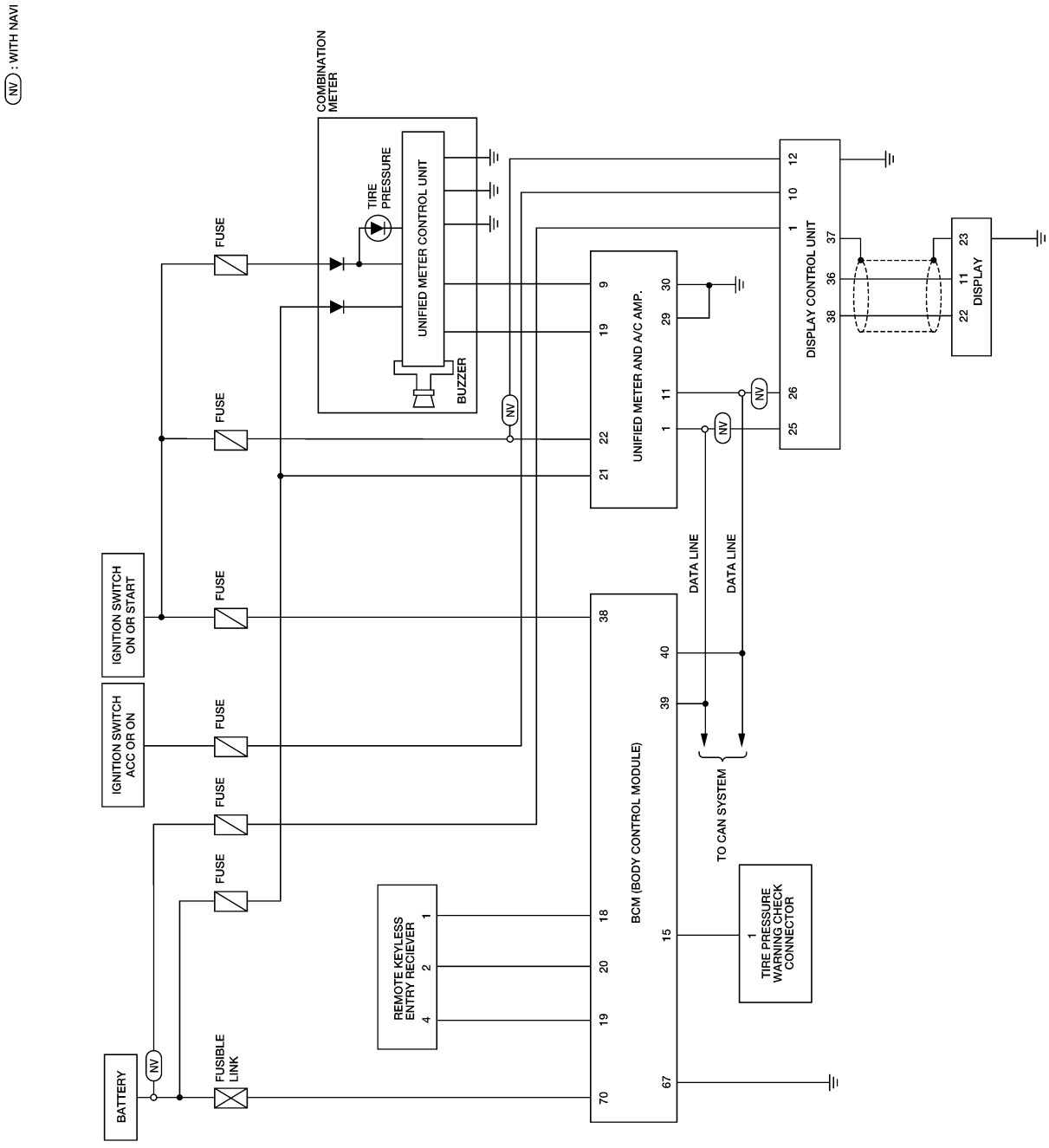
Refer to LAN-4, "SYSTEM DESCRIPTION" .

TROUBLE DIAGNOSES

PFP:00004

Schematic

EES002E3

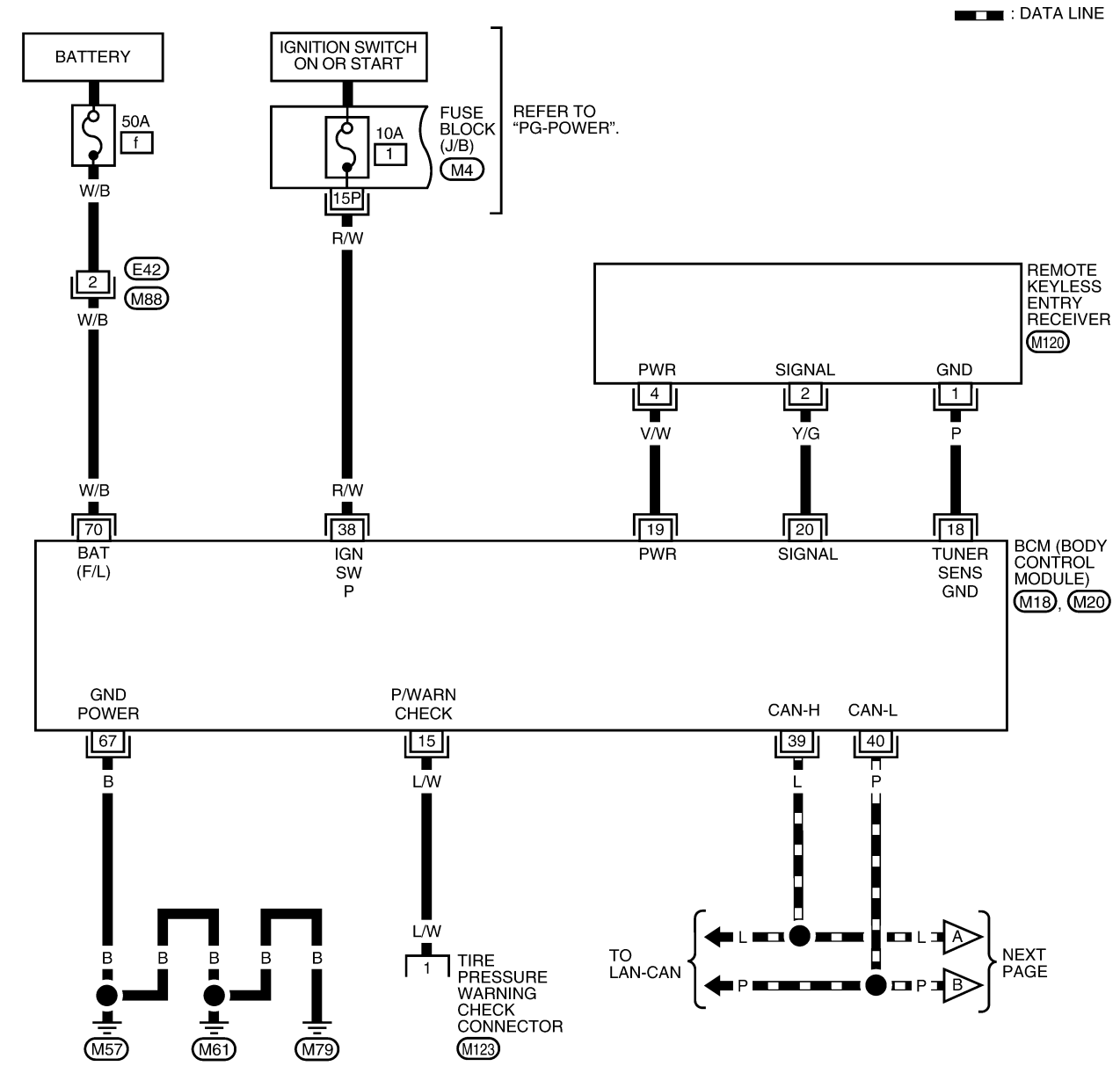


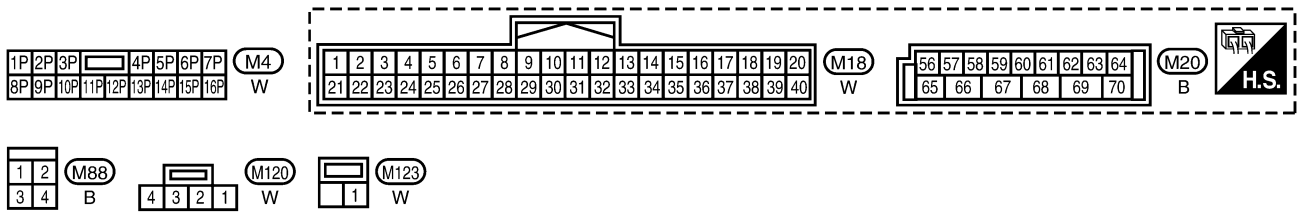
LEWA0004E

Wiring Diagram — T/WARN —

EES002DJ

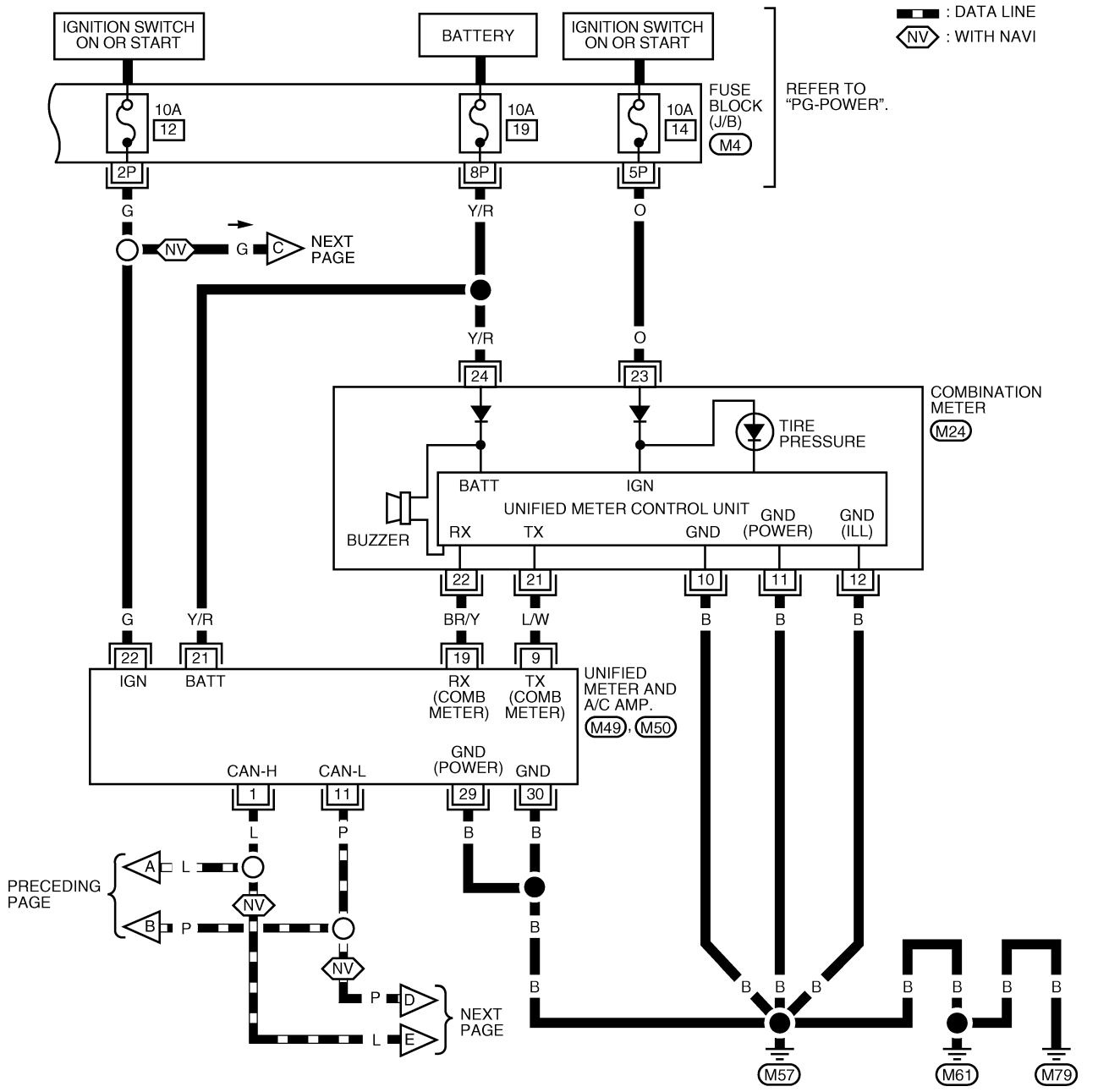
WT-T/WARN-01

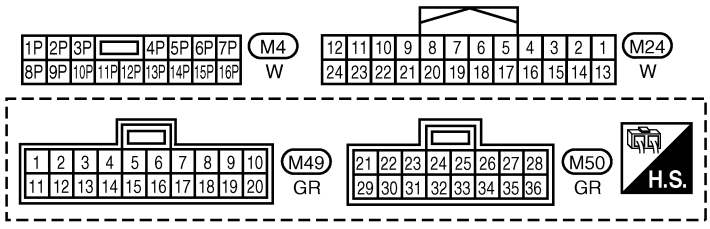




LEWA0005E

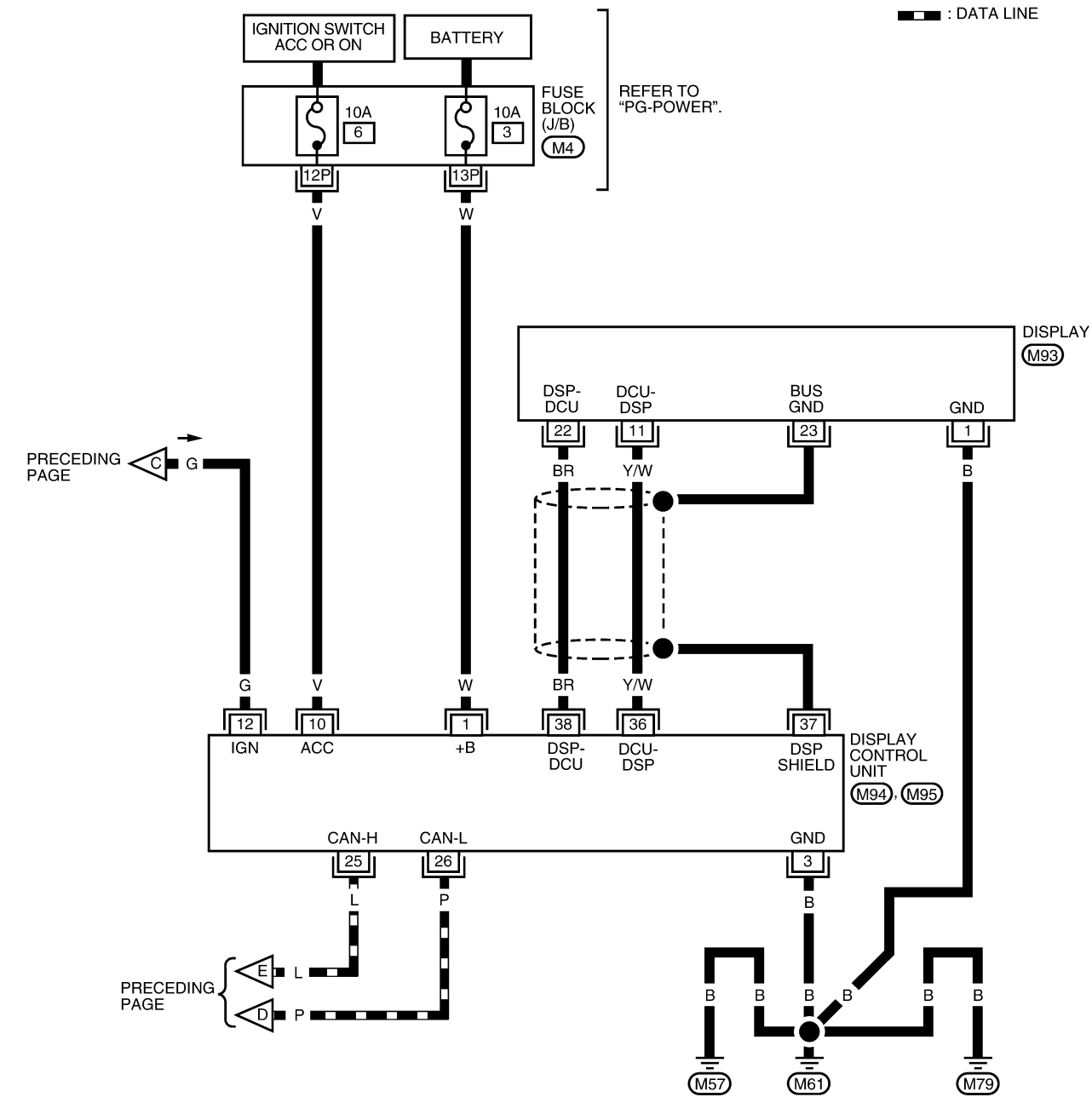
WT-T/WARN-02

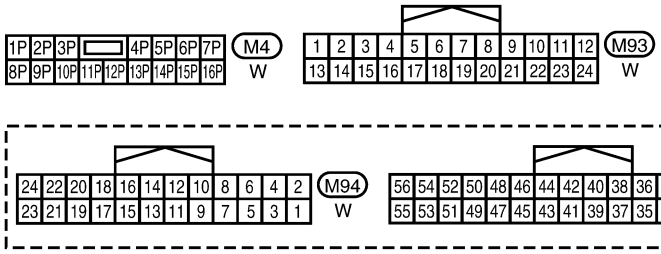




LEWA0006E

WT-T/WARN-03





LEWA0007E

Terminal and Reference Value (BCM)

EES002DK

Refer to BCS-12, "Terminals and Reference Values for BCM" .

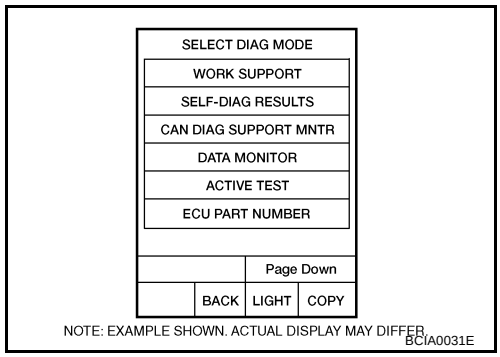
ID Registration Procedure

EES002E7

ID REGISTRATION WITH TRANSMITTER ACTIVATION TOOL

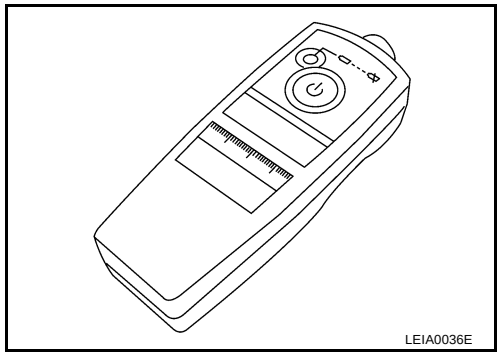
NOTE:
This procedure must be done after replacement of a low tire pressure warning transmitter or BCM. New replacement transmitters are provided "asleep" and must first be "woken up" using Transmitter Activation Tool J-45295 before ID registration can be performed.

1. Connect CONSULT-II. Refer to GI-37, "CONSULT-II Start Procedure" .
2. Select “AIR PRESSURE MONITOR” on "SELECT TEST ITEM" screen.
3. Select “WORK SUPPORT” on "SELECT DIAG MODE" screen, and select "ID REGIST".



4. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds.

   Tool number : (J-45295)



5. Register the IDs in order from FR LH, FR RH, RR RH and RR LH. When ID registration of each wheel has been completed, a buzzer sounds and the hazard warning lamps flash.

Activation tire position		Buzzer	Hazard warning lamp	CONSULT-II
1	Front LH	Once	2 times flashing	“YET” ↓ “DONE”
2	Front RH	2 times		
3	Rear RH	3 times		
4	Rear LH	4 times		

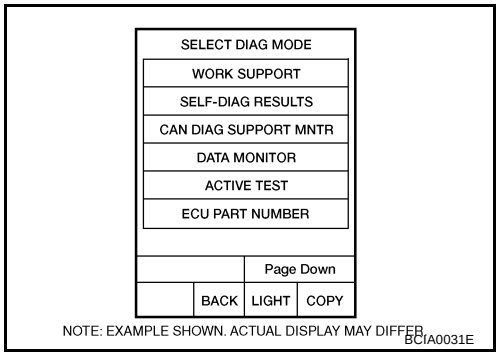
6. After completing all ID registrations, press “END” to complete the procedure.

NOTE:
Be sure to register the IDs in order from FR LH, FR RH, RR RH, to RR LH, or the self-diagnostic results display will not function properly.

ID REGISTRATION WITHOUT TRANSMITTER ACTIVATION TOOL

NOTE:
This procedure must be done after replacement of a low tire pressure warning transmitter or BCM. New replacement transmitters are provided "asleep" and must first be "woken up" using Transmitter Activation Tool J-45295 before ID registration can be performed.

1. Connect CONSULT-II. Refer to GI-37, "CONSULT-II Start Procedure" .
2. Select “AIR PRESSURE MONITOR” on “SELECT TEST ITEM" screen.
3. Select “WORK SUPPORT” on “SELECT DIAG MODE" screen, and select "ID REGIST".
4. Adjust the tire pressure to the values shown in the table below for ID registration, and drive the vehicle at 15 km/h (9.4 MPH) or more for a few minutes.



Tire position	Tire pressure kPa (kg/cm^2 , psi)
Front – Left	250 (2.5, 36)
Front – Right	230 (2.3, 33)
Rear – Right	210 (2.1, 30)
Rear – Left	190 (1.9, 27)

5. After completing all ID registrations, press “END” to complete the procedure.

Activation tire position	CONSULT-II
Front LH	“YET” ↓ “DONE”
Front RH	
Rear RH	
Rear LH	

6. Inflate all tires to proper pressure. Refer to WT-36, "Tire" .

Transmitter Wake Up Operation

EES002E8

WITH TRANSMITTER ACTIVATION TOOL

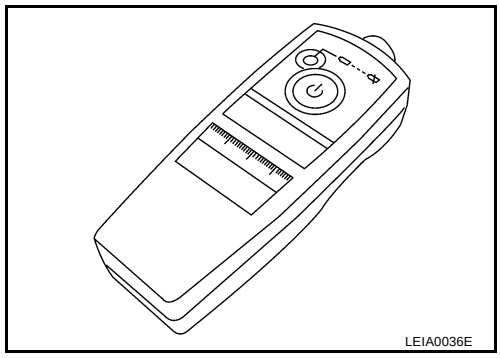
NOTE:

This procedure must be done after replacement of a low tire pressure warning transmitter or BCM. New replacement transmitters are provided "asleep" and must first be "woken up" using Transmitter Activation Tool J-45295 before ID registration can be performed.

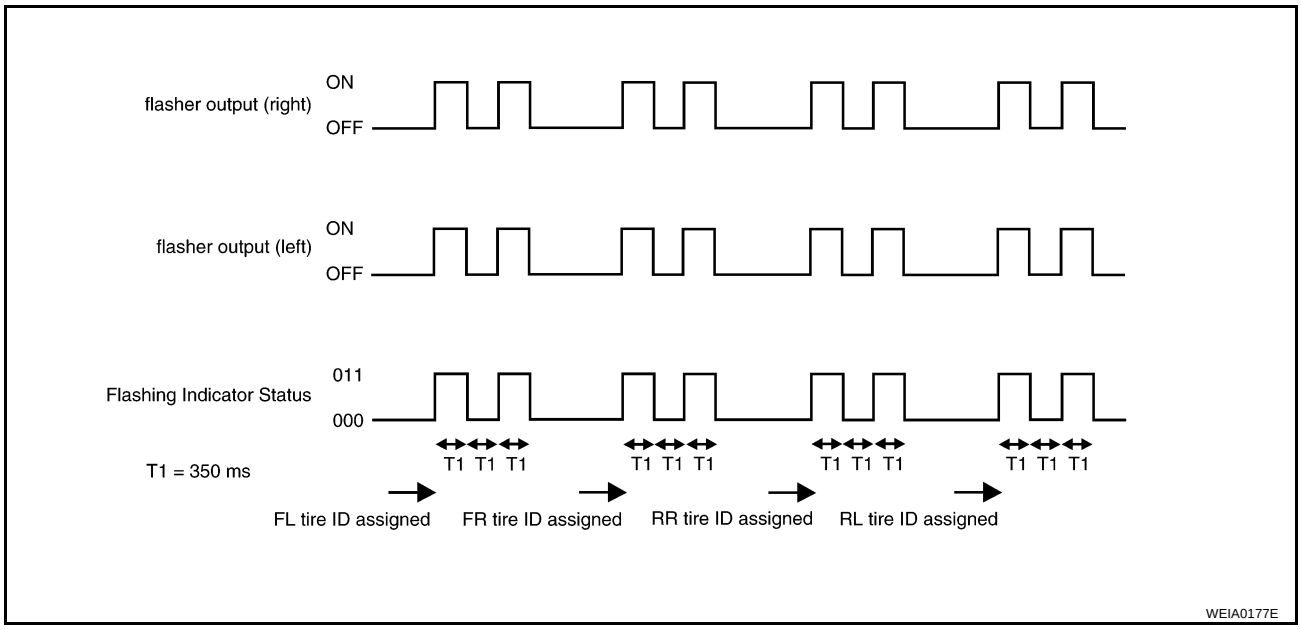
1. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds.

   Tool number : (J-45295)

   - With ignition switch ON, as the hazard warning lamp flashes per the follow diagram, the respective transmitter then must be woken up.



2. When the BCM finishes assigning each tire ID, the BCM flashes the hazard warning lamps and sends flashing indicator status by CAN according to the following time chart.



3. After completing wake up of all transmitters, make sure low tire pressure warning lamp goes out.

CONSULT-II Function (BCM)

EES002DN

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

Self-Diagnosis

EES002DO

DESCRIPTION

During driving, the low tire pressure warning system receives the signal transmitted from the transmitter installed in each wheel, and gives alarms when the tire pressure becomes low. The control unit (BCM) for this system has pressure judgement and trouble diagnosis functions.

FUNCTION

When the low tire pressure warning system detects low inflation pressure or another unusual symptom, the warning lamp in the combination meter comes on. To start the self-diagnostic results mode, ground the tire pressure warning check terminal. The malfunction location is indicated by the warning lamp flashing and the buzzer sounds.

CONSULT-II Application to Low Tire Pressure Warning System

ITEM	SELF-DIAGNOSTIC RESULTS	DATA MONITOR
Front - Left transmitter	×	×
Front - Right transmitter	×	×
Rear - Left transmitter	×	×
Rear - Right transmitter	×	×
Warning lamp	—	×
Vehicle speed	×	×
Buzzer (in combination meter)	—	×
CAN Communication	×	×

× : Applicable
– : Not applicable

Self-Diagnostic Results Mode

Diagnostic item		Diagnostic item is detected when ···	Reference page
Program card UED06A or earlier	Program card UED06B or later		
FLAT - TIRE - FL [C1704] FLAT - TIRE - FR [C1705] FLAT - TIRE - RR [C1706] FLAT - TIRE - RL [C1707]	LOW - PRESSURE - FL [C1704] LOW - PRESSURE - FR [C1705] LOW - PRESSURE - RR [C1706] LOW - PRESSURE - RL [C1707]	FL tire pressure 193 kPa (2.0 kg/cm^2 , 28 psi) or less FR tire pressure 193 kPa (2.0 kg/cm^2 , 28 psi) or less RR tire pressure 193 kPa (2.0 kg/cm^2 , 28 psi) or less RL tire pressure 193 kPa (2.0 kg/cm^2 , 28 psi) or less	—
[NO-DATA] - FL [C1708] [NO-DATA] - FR [C1709] [NO-DATA] - RR [C1710] [NO-DATA] - RL [C1711]		Data from FL transmitter cannot be received. Data from FR transmitter cannot be received. Data from RR transmitter cannot be received. Data from RL transmitter cannot be received.	WT-26
[CHECKSUM- ERR] - FL [CHECKSUM- ERR] - FR [CHECKSUM- ERR] - RR [CHECKSUM- ERR] - RL		Checksum data from FL transmitter is malfunctioning. Checksum data from FR transmitter is malfunctioning. Checksum data from RR transmitter is malfunctioning. Checksum data from RL transmitter is malfunctioning.	WT-26
[PRESSDATA- ERR] - FL [PRESSDATA- ERR] - FR [PRESSDATA- ERR] - RR [PRESSDATA- ERR] - RL		Air pressure data from FL transmitter is malfunctioning. Air pressure data from FR transmitter is malfunctioning. Air pressure data from RR transmitter is malfunctioning. Air pressure data from RL transmitter is malfunctioning.	WT-27
[CODE- ERR] - FL [CODE- ERR] - FR [CODE- ERR] - RR [CODE- ERR] - RL		Function code data from FL transmitter is malfunctioning. Function code data from FR transmitter is malfunctioning. Function code data from RR transmitter is malfunctioning. Function code data from RL transmitter is malfunctioning.	WT-26
[BATT - VOLT - LOW] - FL [BATT - VOLT - LOW] - FR [BATT - VOLT - LOW] - RR [BATT - VOLT - LOW] - RL		Battery voltage of FL transmitter drops. Battery voltage of FR transmitter drops. Battery voltage of RR transmitter drops. Battery voltage of RL transmitter drops.	WT-26
VHCL_SPEED_SIG_ERR [C1729]		Vehicle speed signal is in error.	WT-28

NOTE:
Before performing the self-diagnosis, be sure to register the ID or else the actual malfunction location may be different from that displayed on CONSULT-II.

Data Monitor Mode

MONITOR	CONDITION	SPECIFICATION
VHCL SPEED	Drive vehicle.	Vehicle speed (km/h or MPH)
AIR PRESS FL AIR PRESS FR AIR PRESS RR AIR PRESS RL	● Drive vehicle for a few minutes. or ● Ignition switch ON and activation tool is transmitting activation signals.	Tire pressure (kPa or psi)
ID REGST FL1 ID REGST FR1 ID REGST RR1 ID REGST RL1	Ignition switch ON	Registration ID: DONE No registration ID: YET
WARNING LAMP		Low tire pressure warning lamp on: ON Low tire pressure warning lamp off: OFF
BUZZER		Buzzer in combination meter on: ON Buzzer in combination meter off: OFF

NOTE:
Before performing the self-diagnosis, be sure to register the ID, or the actual malfunction location may be different from that displayed on CONSULT-II.

Malfunction Code/Symptom Chart

EES002DR

Code/Symptom	Malfunction part	Reference page
15 16 17 18	Front-left tire pressure drops to 193 kPa (2.0 kg/cm^2 , 28 psi) or less Front-right tire pressure drops to 193 kPa (2.0 kg/cm^2 , 28 psi) or less Rear-right tire pressure drops to 193 kPa (2.0 kg/cm^2 , 28 psi) or less Rear-left tire pressure drops to 193 kPa (2.0 kg/cm^2 , 28 psi) or less	—
21 22 23 24	Transmitter no data (front - left) Transmitter no data (front - right) Transmitter no data (rear - right) Transmitter no data (rear - left)	WT-26
31 32 33 34	Transmitter checksum error (front - left) Transmitter checksum error (front - right) Transmitter checksum error (rear - right) Transmitter checksum error (rear - left)	WT-26
35 36 37 38	Transmitter pressure data error (front - left) Transmitter pressure data error (front - right) Transmitter pressure data error (rear - right) Transmitter pressure data error (rear - left)	WT-27
41 42 43 44	Transmitter function code error (front - left) Transmitter function code error (front - right) Transmitter function code error (rear - right) Transmitter function code error (rear - left)	WT-26
45 46 47 48	Transmitter battery voltage low (front - left) Transmitter battery voltage low (front - right) Transmitter battery voltage low (rear - right) Transmitter battery voltage low (rear - left)	WT-26
52	Vehicle speed signal	WT-28
Low tire pressure warning lamp does not come on when ignition switch is turned on.	● Fuse or combination meter ● BCM connector or circuit ● BCM	WT-29
Low tire pressure warning lamp stays on when ignition switch is turned on.	● Combination meter ● BCM connector or circuit ● BCM	WT-29
Low tire pressure warning lamp flashes when ignition switch is turned on.	● BCM harness connector or circuit ● BCM ● Transmitter's mode off ● ID registration not completed yet	WT-31
Hazard warning lamp flashes when ignition switch is turned on.	● BCM harness connector or circuit ● BCM	WT-32
“TIRE PRESSURE” information in display does not exist (with NAVI).	● Fuse ● Display unit ● BCM	WT-33
ID registration cannot be completed.	● Transmitter ● Remote keyless entry receiver harness connector or circuit ● Remote keyless entry receiver ● BCM harness connector or circuit ● BCM	WT-33

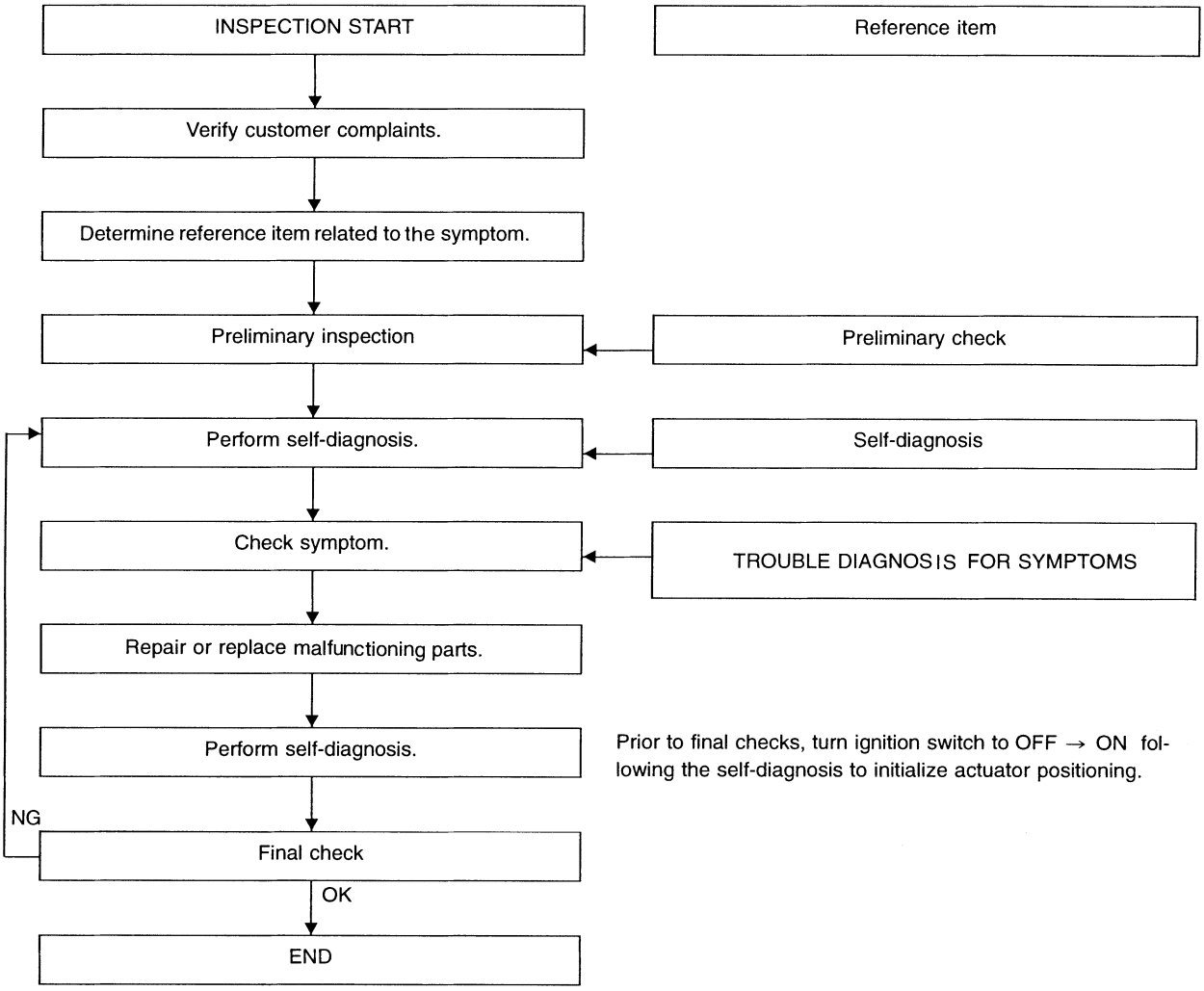
How to Perform Trouble Diagnosis for Quick and Accurate Repair

EES002DP

INTRODUCTION

- Before troubleshooting, verify customer complaints.
- If a vehicle malfunction is difficult to reproduce, harnesses, harness connectors or terminals may be malfunctioning. Hold and shake these parts to make sure they are securely connected.
- When using a circuit tester to measure voltage or resistance of each circuit, be careful not to damage or deform connector terminals.

WORK FLOW



SEIA0100E

Preliminary check : WT-25 Self-diagnosis : WT-21 Trouble diagnosis for symptoms : WT-29

Preliminary Check

EES002DQ

BASIC INSPECTION

1. CHECK ALL TIRE PRESSURES

Check all tire pressures. Refer to WT-36, "Tire" .

OK or NG

OK >> GO TO 2.
NG >> Adjust tire pressure to specified value.

2. CHECK LOW TIRE PRESSURE WARNING LAMP ACTIVATION

Check low tire pressure warning lamp activation.

Does warning lamp activate for 1 second when ignition switch is turned ON?

YES >> GO TO 3.
NO >> Check fuse and combination meter.

3. CHECK CONNECTOR

1. Disconnect BCM harness connector.
2. Check terminals for damage or loose connection.
3. Reconnect harness connector.

OK or NG

OK >> GO TO 4.
NG >> Repair or replace damaged parts.

4. CHECK TRANSMITTER ACTIVATION TOOL

Check transmitter activation tool battery.

OK or NG

OK >> Carry out self-diagnosis.
NG >> Replace transmitter activation tool battery.

TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

PFP:00000

Inspection 1: Transmitter or Control Unit (BCM)

EES002DS

MALFUNCTION CODE NO. 21, 22, 23 OR 24 (DTC C1708, C1709, C1710 OR C1711)

1. CHECK CONTROL UNIT

Drive for several minutes. Check all tire pressures with CONSULT-II “DATA MONITOR ITEM”.

Are all tire pressures displayed as 0 kPa?

YES >> GO TO 2.
NO >> GO TO 3.

2. CHECK REMOTE KEYLESS ENTRY RECEIVER CONNECTOR

Check remote keyless entry receiver connector for damage or loose connections.

OK or NG

OK >> Replace BCM, then GO TO 3. Refer to BCS-25, "REMOVAL AND INSTALLATION" .
NG >> Repair or replace remote keyless entry receiver connector.

3. ID REGISTRATION

Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .

Is there a tire that cannot register ID?

YES >> Replace transmitter of the tire, then GO TO 5. Refer to WT-34, "Transmitter (Pressure Sensor)" .
NO >> GO TO 4.

4. VEHICLE DRIVING

1. Drive at a speed of 40 km/h (25 MPH) or more for several minutes without stopping.
2. Check all tire pressures with CONSULT-II “DATA MONITOR ITEM” within 15 minutes after vehicle speed becomes 17 km/h (11 MPH).

Does “DATA MONITOR ITEM” display tire pressure as normal without any warning lamp?

YES >> Inspection End.
NO >> GO TO 5.

5. ID REGISTRATION AND VEHICLE DRIVING

1. Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .
2. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.
3. Check all tire pressures with CONSULT-II “DATA MONITOR ITEM” within 5 minutes.

Does “DATA MONITOR ITEM” display tire pressure as normal without any warning lamp?

YES >> Inspection End.
NO >> GO TO the inspection applicable to DTC.

Inspection 2: Transmitter - 1

EES002DT

MALFUNCTION CODE NO. 31, 32, 33, 34, 41, 42, 43, 44, 45, 46, 47 OR 48

1. ID REGISTRATION (CORRECTION OF TRANSMITTER LOCATION)

1. Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .
2. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.

>> GO TO 2.

2. REPLACE TRANSMITTER

1. Check low tire pressure warning lamp again for flashing, replace malfunctioning transmitter.
2. Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .

Can ID registration of all transmitters be completed?

YES >> GO TO 3.
NO >> GO TO Inspection 1. Refer to WT-26, "Inspection 1: Transmitter or Control Unit (BCM)" .

3. VEHICLE DRIVING

1. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.
2. Check all tire pressures with CONSULT-II “DATA MONITOR ITEM” within 5 minutes.

Does “DATA MONITOR ITEM” display tire pressure as normal without any warning lamp?

YES >> Inspection End.
NO >> Replace malfunctioning transmitter, and perform Step 3 again. Refer to WT-34, "Transmitter (Pressure Sensor)" .

Inspection 3: Transmitter - 2

EES002DU

MALFUNCTION CODE NO. 35, 36, 37 OR 38

1. CHECK ALL TIRE PRESSURES

Check all tire pressures. Refer to WT-36, "Tire" .

Are there any tires with pressure of 64 psi or more?

YES >> Adjust tire pressure to specified value.
NO >> GO TO 2.

2. VEHICLE DRIVING

1. Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .
2. Drive at a speed of 40 km/h (25 MPH) or more for several minutes without stopping.
3. Check all tire pressures with CONSULT-II “DATA MONITOR ITEM” within 15 minutes after vehicle speed becomes 17 km/h (11 MPH).

Does “DATA MONITOR ITEM” display 64 psi or more?

YES >> Replace transmitter. Refer to WT-34, "Transmitter (Pressure Sensor)" . GO TO 3.
NO >> GO TO 3.

3. ID REGISTRATION AND VEHICLE DRIVING

1. Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .
2. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.
3. Check all tire pressures with CONSULT-II “DATA MONITOR ITEM” within 5 minutes.

Does “DATA MONITOR ITEM” display tire pressure as normal without any warning lamp?

YES >> Inspection End.
NO >> GO TO the inspection applicable to DTC.

Inspection 4: Vehicle Speed Signal

EES002E9

MALFUNCTION CODE NO. 52 (DTC C1729)

1. SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-II, check display contents in self-diagnostic results.

Is " CAN COMM CIRCUIT" displayed in the self-diagnosis display items?

YES >> Malfunction in CAN communication system. GO TO LAN-44, "TROUBLE DIAGNOSIS" .
NO >> GO TO 2.

2. CHECK BCM

Perform BCM diagnosis. Refer to BCS-17, "CONSULT-II START PROCEDURE" .

Inspection results OK?

OK >> Perform Vehicle Speed Sensor Inspection. Refer to CVT-90, "DTC P0720 VEHICLE SPEED SENSOR CVT (SECONDARY SPEED SENSOR)" .
NG >> Replace BCM. Refer to BCS-25, "REMOVAL AND INSTALLATION" .

TROUBLE DIAGNOSIS FOR SYMPTOMS

PFP:00007

Inspection 1: Warning Lamp Does Not Come On When Ignition Switch Is Turned On.

EES002EA

DIAGNOSTIC PROCEDURE

1. SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-II, check display contents in self-diagnostic results.

Is "CAN COMM CIRCUIT" displayed in the self-diagnosis display items?

YES >> Malfunction in CAN communication system. GO TO LAN-44, "TROUBLE DIAGNOSIS" .
NO >> GO TO 2.

2. CHECK COMBINATION METER

Check combination meter operation.

Inspection results OK?

OK >> GO TO 3.
NG >> Check combination meter. Refer to DI-13, "Self-Diagnosis Mode of Combination Meter" .

3. CHECK LOW TIRE PRESSURE WARNING LAMP

Disconnect BCM harness connector.

Does the low tire pressure warning lamp activate?

YES >> Replace BCM. Refer to BCS-25, "REMOVAL AND INSTALLATION" .
NO >> Check combination meter and repair or replace.

Inspection 2: Warning Lamp Stays On When Ignition Switch Is Turned On

EES002DX

DIAGNOSTIC PROCEDURE

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect BCM harness connectors M18 and M20.
3. Check terminals for damage or loose connections.

Inspection results OK?

OK >> GO TO 2.
NG >> Repair or replace damaged parts.

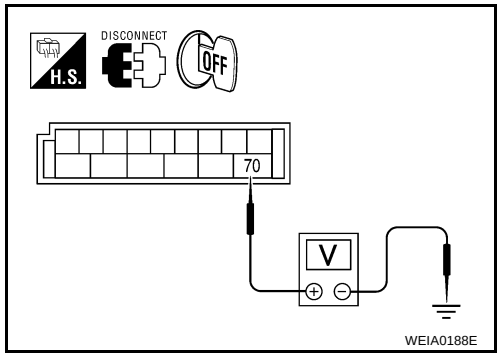
2. CHECK POWER SUPPLY CIRCUIT (BAT)

Check voltage between BCM harness connector M20 terminal 70 and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Connector	Terminal	Ground	Battery voltage
M20	70		

OK or NG

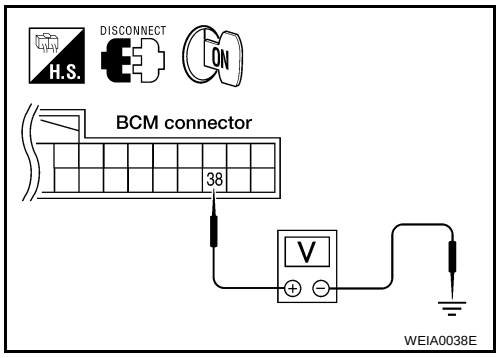
OK >> GO TO 3.
NG >> Check BCM power supply circuit for open or short.



3. CHECK POWER SUPPLY CIRCUIT (IGN)

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector M18 terminal 38 and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Connector	Terminal	Ground	Battery voltage
M18	38		



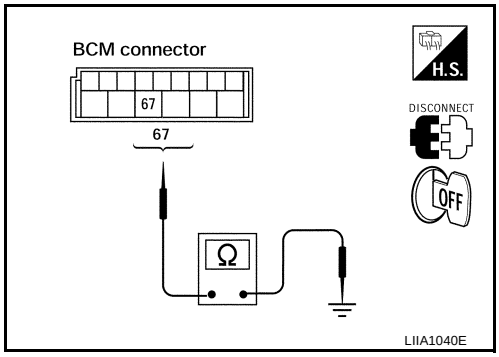
OK or NG

OK >> GO TO 4.
NG >> Check BCM power supply circuit for open or short.

4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between BCM harness connector M20 terminal 67 and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal	Ground	Yes
M20	67		



OK or NG

OK >> Replace BCM. Refer to BCS-25, "REMOVAL AND INSTALLATION" .
NG >> Repair BCM ground circuit.

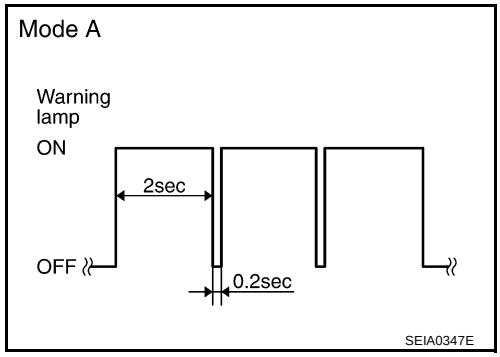
Inspection 3: Warning Lamp Flashes When Ignition Switch Is Turned On.

EES002EB

NOTE:
If warning lamp flashes as shown, the system is normal.

Flash Mode A

- This mode shows transmitter status is OFF-mode.
  Carry out transmitter wake up operation. Refer to WT-19, "Transmitter Wake Up Operation" .



DIAGNOSTIC PROCEDURE

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect BCM harness connectors M18, M19 and M20.
3. Check terminals for damage or loose connections.

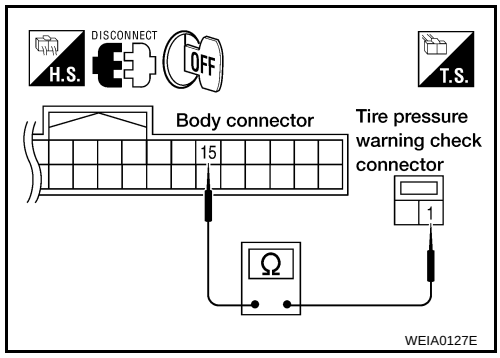
Inspection results OK?

OK >> GO TO 2.
NG >> Repair or replace damaged parts.

2. CHECK TIRE PRESSURE WARNING CHECK CONNECTOR CIRCUIT

Check continuity between BCM harness connector M18 terminal 15 and check connector M123 terminal 1.

Continuity should exist.



OK or NG

OK >> Replace BCM. Refer to BCS-25, "REMOVAL AND INSTALLATION" .
NG >> Repair or replace harness connector.

Inspection 4: Hazard Warning Lamp Flashes When Ignition Switch Is Turned On

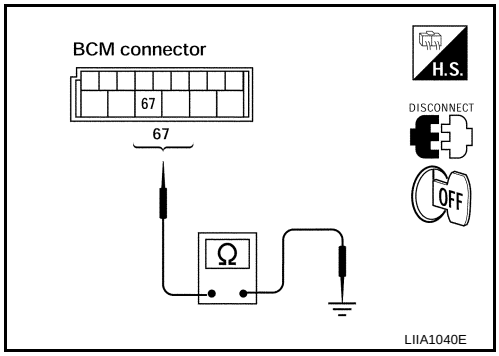
EES002DZ

DIAGNOSTIC PROCEDURE

1. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM harness connector M20.
3. Check continuity between BCM harness connector M20 terminal 67 and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal	Ground	Yes
M20	67		



OK or NG

OK >> Replace BCM. Refer to BCS-25, "REMOVAL AND INSTALLATION" .

NG >> Repair BCM ground circuit.

Inspection 5: “TIRE PRESSURE” Information In Display Unit Does Not Exist.

EES002EC

DIAGNOSTIC PROCEDURE

1. SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-II, check display contents in self-diagnostic results.

Is "CAN COMM CIRCUIT" displayed in the self-diagnosis display items?

YES >> Malfunction in CAN communication system. GO TO LAN-44, "TROUBLE DIAGNOSIS" .
NO >> GO TO 2.

2. CHECK DISPLAY UNIT

Perform display unit self-diagnosis. Refer to AV-154, "Self-Diagnosis Mode (NAVI)" .

Inspection results OK?

OK >> Replace BCM. Refer to BCS-25, "REMOVAL AND INSTALLATION" .
NG >> Repair or replace malfunctioning parts.

Inspection 6: ID Registration Cannot Be Completed

EES002E1

DIAGNOSTIC PROCEDURE

1. ID REGISTRATION (ALL)

Carry out ID registration of all transmitters. Refer to WT-17, "ID Registration Procedure" .

Can ID registration of all transmitters be completed?

YES >> Inspection End.
NO >> GO TO WT-26, "Inspection 1: Transmitter or Control Unit (BCM)" .

REMOVAL AND INSTALLATION

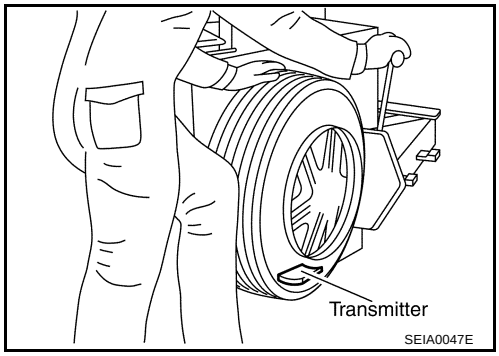
PFP:00000

Transmitter (Pressure Sensor)

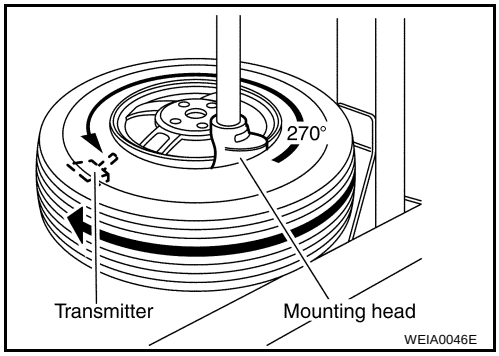
EES002E2

REMOVAL

1. Remove wheel and tire using power tool.
2. Deflate tire. Unscrew transmitter retaining nut and allow transmitter to fall into tire.
3. Gently bounce tire so that transmitter falls to bottom of tire. Place wheel and tire assembly on tire changing machine and break both tire beads. Ensure that the transmitter remains at the bottom of the tire while breaking the bead.

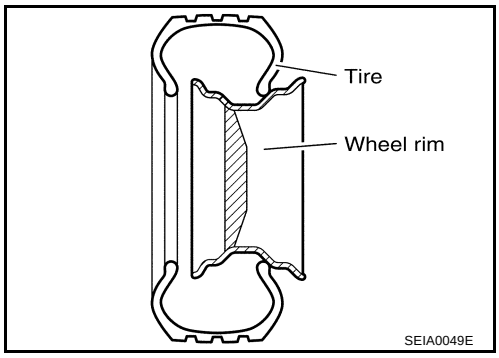


4. Turn tire so that valve hole is at bottom, and gently bounce the tire to ensure transmitter is near valve hole. Carefully lift tire onto turntable and position valve hole (and transmitter) 270 degrees from mounting/dismounting head.
5. Lubricate tire well, and remove top side of tire. Reach inside the tire and remove the transmitter.
6. Remove the second side of the tire as normal.



INSTALLATION

1. Place first side of tire onto rim.

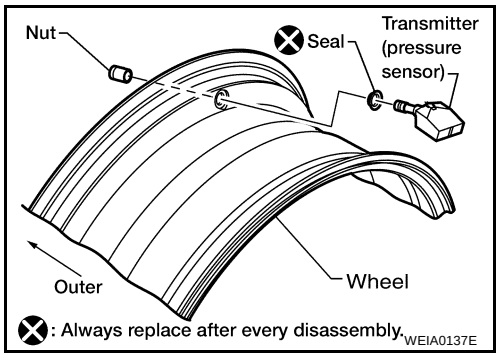


2. Apply suitable silicone lubricant to new transmitter seal then install seal on transmitter. Refer to MA-9, "RECOMMENDED FLUIDS AND LUBRICANTS" .

   NOTE:
   Always replace the seal after every disassembly.
3. Mount transmitter on rim and tighten nut to specification.

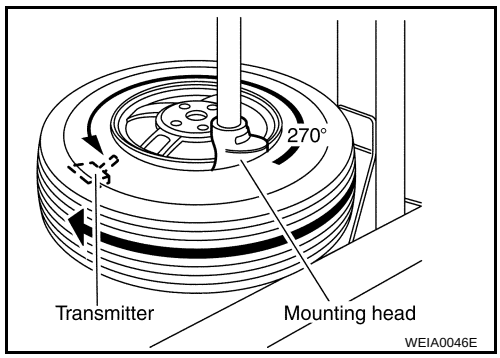
   NOTE:
   Make sure no burrs exist in the valve stem hole of the wheel.

   Transmitter nut : 5.5 N·m (0.56 kg-m, 49 in-lb)



4. Place wheel on turntable of tire machine. Ensure that transmitter is 270 degrees from mounting/dismounting head.

   NOTE:
   Do not touch transmitter with mounting head.



5. Lubricate tire well, and install second side of tire as normal. Ensure that tire does not rotate relative to rim.
6. Inflate tire and balance the wheel and tire assembly. Refer to WT-6, "WHEEL BALANCE ADJUSTMENT" .
7. Install wheel and tire assembly in appropriate wheel position on vehicle.

   NOTE:
   If replacing transmitter, transmitter wake up operation must be performed. Refer to WT-19, "Transmitter Wake Up Operation" .
8. Adjust neutral position of steering angle sensor, if equipped. Refer to BRC-93, "Adjustment of Steering Angle Sensor Neutral Position" .

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Road Wheel

EES0019H

Wheel type		Aluminum
Maximum radial runout limit	Lateral mm (in)	0.3 (0.012) or less
	Radial mm (in)	0.3 (0.012) or less
Allowable quantity of residual unbalance	Dynamic (On the ear part)	Less than 5 g (0.18 oz.) (per side)
	Static (On the ear part)	Less than 10 g (0.35 oz.)

Tire

EES0019I

Unit: kPa (kg/cm^2 , psi)

Tire size	Air pressure	
	Conventional tire	Spare tire
T145/80*17	—	420 (4.2, 60) *1
225/55R17	230 (2.3, 33)	230 (2.3, 33) *2
245/45R18	220 (2.2, 32)	220 (2.2, 32) *2

*: D or R depending on manufacturer

*1 : United States

*2 : Optional in United States; standard in Canada