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# WT

## SECTION

### ROAD WHEELS & TIRES

D

WT

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# PRECAUTIONS

< SERVICE INFORMATION >

## SERVICE INFORMATION

### PRECAUTIONS

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

INFOID:000000001718210

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

< SERVICE INFORMATION >

## PREPARATION

### Special Service Tool

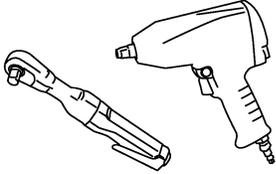
INFOID:000000001718211

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	<ul style="list-style-type: none"><li>• Wake up</li><li>• ID registration</li></ul>

### Commercial Service Tool

INFOID:000000001718212

Tool name	Description
Power tool  PBIC0190E	Removing wheel nuts

# NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

< SERVICE INFORMATION >

## NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

### NVH Troubleshooting Chart

INFOID:000000001718213

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

Symptom		Possible cause and SUSPECTED PARTS														Reference page			
		Improper installation, looseness	Out-of-round	Imbalance	Incorrect tire pressure	Uneven tire wear	Deformation or damage	Non-uniformity	Incorrect tire size	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEEL	DRIVESHAFT	BRAKE	STEERING		
TIRES	Noise	x	x	x	x	x	x	x	x		x	x	x		x	x	x		<a href="#">FAX-5, FSU-6</a>
	Shake	x	x	x	x	x	x		x		x	x		x	x	x	x		<a href="#">WT-5</a>
	Vibration				x					x		x			x				<a href="#">WT-6</a>
	Shimmy	x	x	x	x	x	x	x	x		x	x		x		x	x		<a href="#">WT-29</a>
	Shudder	x	x	x	x	x	x		x		x	x		x		x	x		<a href="#">WT-6</a>
	Poor quality ride or handling	x	x	x	x	x	x		x		x	x		x					—
	Noise	x	x	x			x				x	x	x	x	x	x	x		—
	Shake	x	x	x			x					x	x	x	x	x	x		<a href="#">WT-29</a>
ROAD WHEEL	Shimmy, shudder	x	x	x			x				x	x	x			x	x		<a href="#">FAX-4, "NVH Troubleshooting Chart", RAX-4, "NVH Troubleshooting Chart"</a>
	Poor quality ride or handling	x	x	x			x				x	x	x						<a href="#">FSU-5, "NVH Troubleshooting Chart", FAX-4, "NVH Troubleshooting Chart"</a>
	Noise																		<a href="#">RAX-4, "NVH Troubleshooting Chart", RSU-4, "NVH Troubleshooting Chart"</a>
	Shake																		<a href="#">RAX-4, "NVH Troubleshooting Chart", RSU-4, "NVH Troubleshooting Chart"</a>
Refer to TIRES in this chart.																			
Refer to ROAD WHEEL in this chart.																			
<a href="#">FAX-4, "NVH Troubleshooting Chart"</a>																			
<a href="#">BR-4, "NVH Troubleshooting Chart"</a>																			
<a href="#">PS-5, "NVH Troubleshooting Chart"</a>																			

x: Applicable

# ROAD WHEEL

< SERVICE INFORMATION >

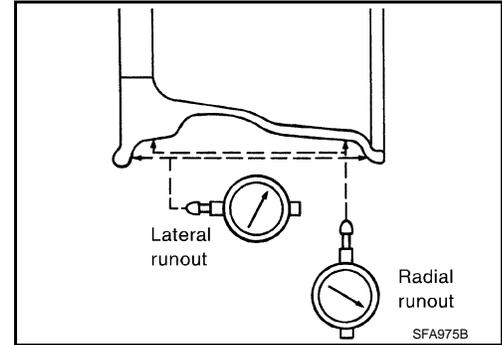
## ROAD WHEEL

### Inspection

INFOID:000000001718214

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 aluminum wheel and mount on a tire balance machine.
  - b. Set dial indicator as shown.

**Wheel runout (Dial indicator value)** : Refer to [WT-29, "Road Wheel"](#).



3. Check front wheel bearings for looseness. Refer to [FAX-5, "On-Vehicle Inspection and Service"](#).
4. Check front suspension for looseness. Refer to [FSU-6, "On-vehicle Service"](#).

# ROAD WHEEL TIRE ASSEMBLY

< SERVICE INFORMATION >

## ROAD WHEEL TIRE ASSEMBLY

### PAX Run Flat Tires and Wheels

INFOID:000000001718215

#### CAUTION:

- Servicing PAX run flat tires and wheels requires special tire equipment and training. **DO NOT** service PAX Run Flat tires and wheels with conventional tire servicing equipment or damage to the tire and wheel will result.
- If a PAX run flat tire and wheel [or transmitter (pressure sensor)] requires service, and the proper servicing equipment is not available, then replace the complete PAX tire and wheel assembly.

### Conventional Tire and Wheel

INFOID:000000001718216

## BALANCING WHEELS

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

#### CAUTION:

**Be careful not to scratch the road wheel during removal.**

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

#### CAUTION:

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

3. Set road wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.

- 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 road wheels.

4. 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 above 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 road wheel.**

#### Calculation:

Indicated unbalance value  $\times$  1.6 = balance weight to be installed

#### Calculation example:

23 g (0.81 oz)  $\times$  1.6 = 38.33 g (1.35 oz) = 40 g (1.41 oz) balance weight (closer to calculated balance weight value)

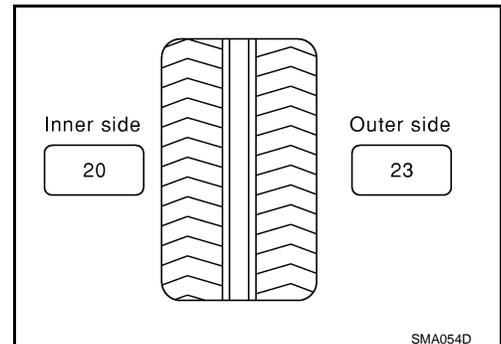
#### NOTE:

The selected balance weight value must be the closest balance weight available to the calculated balance weight value.

#### Example:

37.4 = 35 g (1.23 oz)

37.5 = 40 g (1.41 oz)



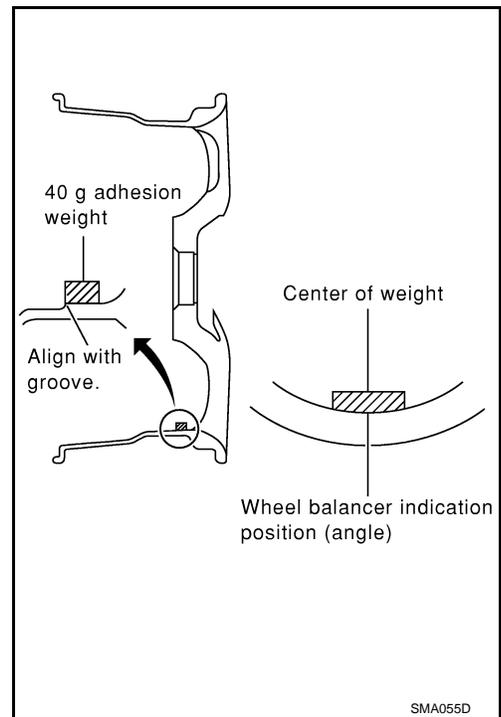
# ROAD WHEEL TIRE ASSEMBLY

## < SERVICE INFORMATION >

- Install balance weight in the position shown.
- When installing balance weight to road wheels, set it into the grooved area on the inner wall of the road wheel as shown in the figure 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 pieces of balance weight.



- If calculated balance weight value exceeds 50 g (1.76 oz), install two balance weight pieces in line with each other (as shown in the figure).

**CAUTION:**

**Do not install one balance weight piece on top of another.**

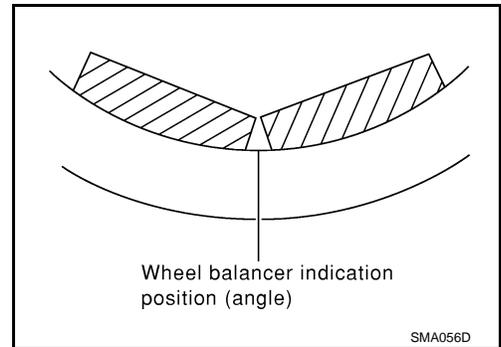
- Start wheel balancer again.
- Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).

**CAUTION:**

**Do not install more than two balance weights.**

- Start wheel balancer. Make sure that inner and outer residual unbalance values are 5 g (0.18 oz) each or less.
  - 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)	Less than 5 g (0.18 oz) (per side)
	Static (At rim flange)	Less than 10 g (0.35 oz.)

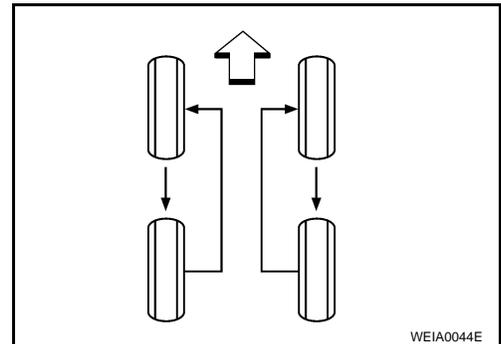
## ROTATION

- After rotating the tires, adjust the tire pressure.
- Retighten the wheel nuts when the vehicle has been driven for 1,000 km (600 miles) (also in cases of a flat tire, etc.).

**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.**

**Tightening torque : 112 N·m (11 kg·m, 83 ft·lb) of wheel nut**



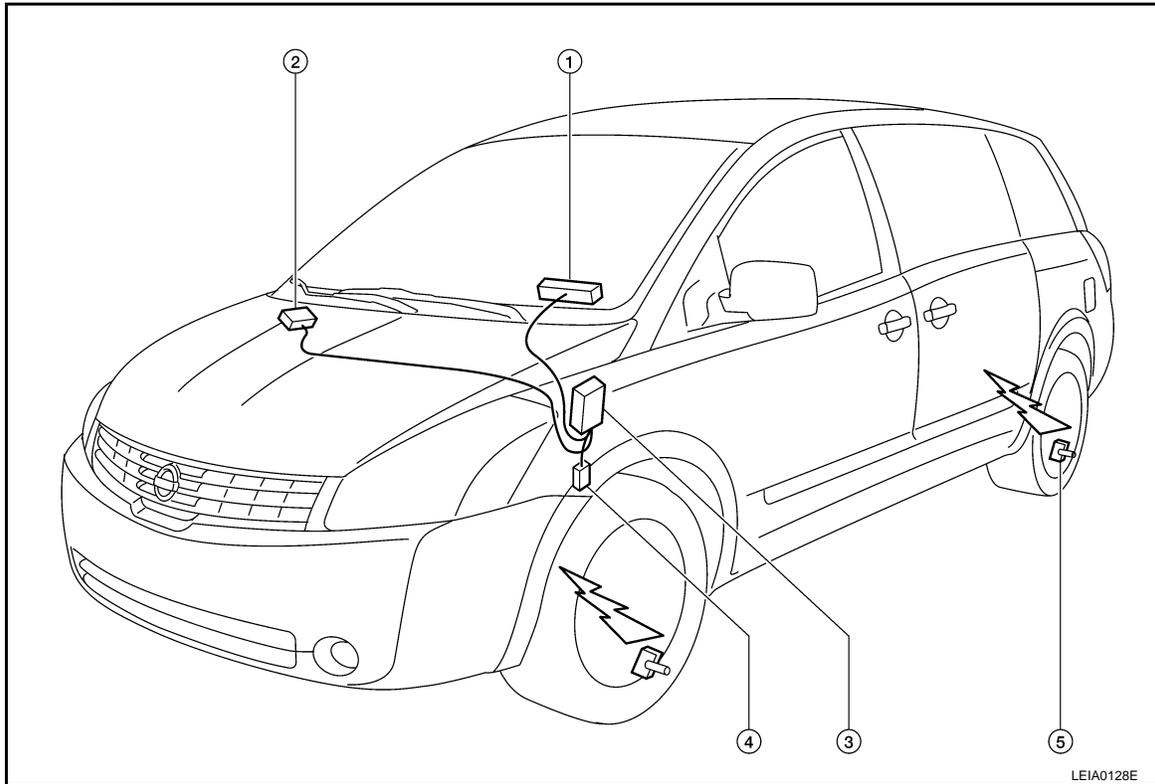
# LOW TIRE PRESSURE WARNING SYSTEM

< SERVICE INFORMATION >

## LOW TIRE PRESSURE WARNING SYSTEM

### System Component

INFOID:000000001718217



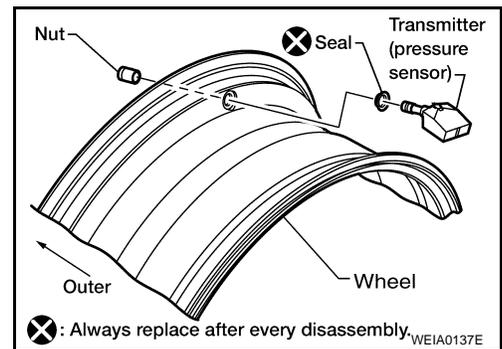
- 1. Combination meter
- 2. Remote keyless entry receiver
- 3. BCM
- 4. Tire pressure warning check connector
- 5. Transmitter

### System Description

INFOID:000000001718218

#### 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.

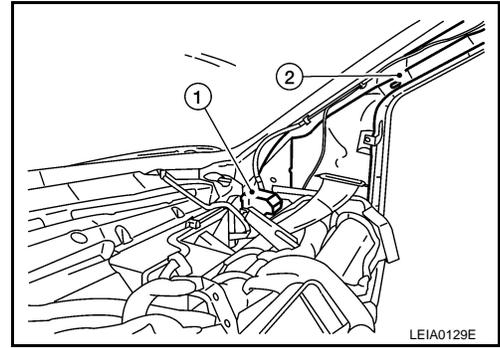


#### REMOTE KEYLESS ENTRY RECEIVER

# LOW TIRE PRESSURE WARNING SYSTEM

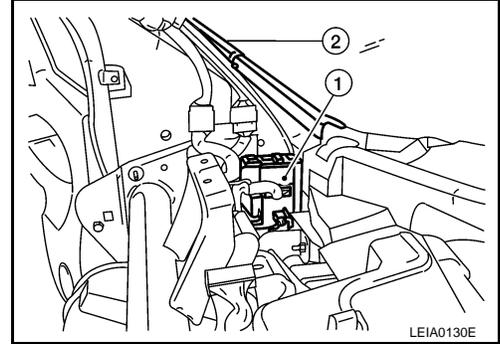
## < SERVICE INFORMATION >

The remote keyless entry receiver (1), which is located near the front pillar RH (2), is shown with the instrument panel removed. This remote keyless entry receiver receives the air pressure signal transmitted by the transmitter in each wheel.



## BCM (BODY CONTROL MODULE)

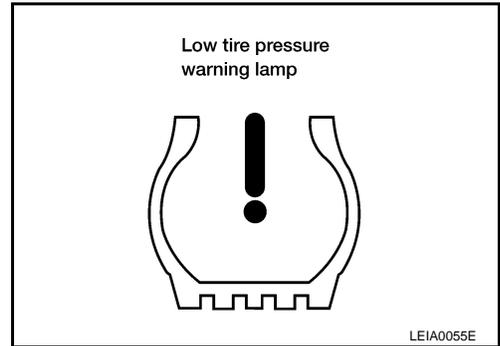
The BCM (1), which is located near the front pillar LH (2), is shown with the instrument panel removed. This BCM reads the air pressure signal received by the remote keyless entry receiver, and controls the combination meter warning lamp and the buzzer operations as shown below. It also has a judgement function to detect a system malfunction.



Condition	Warning lamp	Buzzer
Less than 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) [Flat tire]	ON	OFF
System malfunction	After key ON, flashes once per second for 1 minute, then stays ON	OFF
System normal	On for 1 second after ignition ON	OFF

## COMBINATION METER

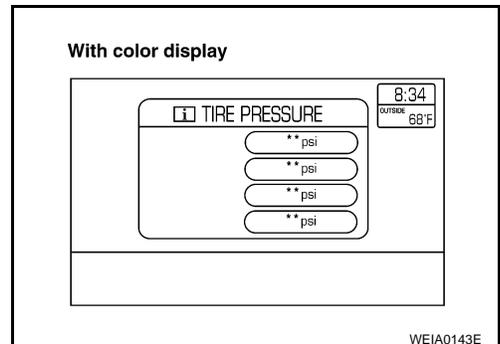
The combination meter receives tire pressure status from the BCM using CAN communication. When a low tire pressure condition is sensed by the BCM, the combination meter low tire pressure warning lamp and buzzer are activated.



## 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.

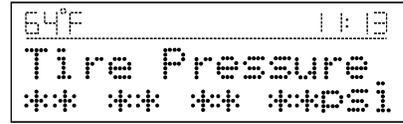


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# LOW TIRE PRESSURE WARNING SYSTEM

< SERVICE INFORMATION >

With monochrome display



64F 11:13  
Tire Pressure  
\*\* \*\* \* \*\*

WEIA0169E

# CAN COMMUNICATION

< SERVICE INFORMATION >

## CAN COMMUNICATION

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### System Description

INFOID:000000001718219

Refer to [LAN-3. "CAN Communication System"](#).

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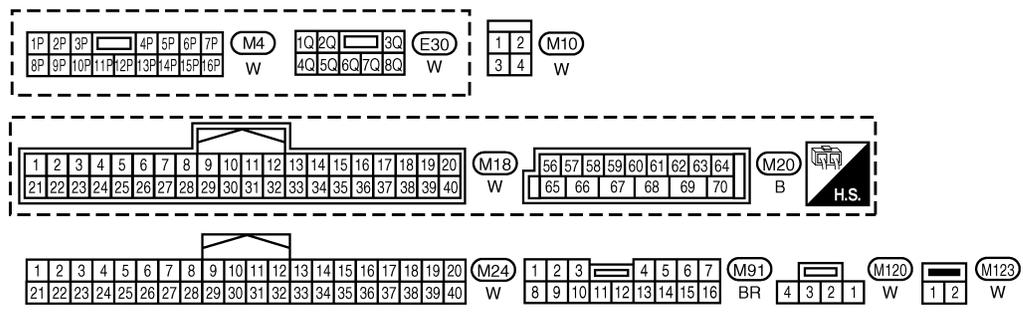
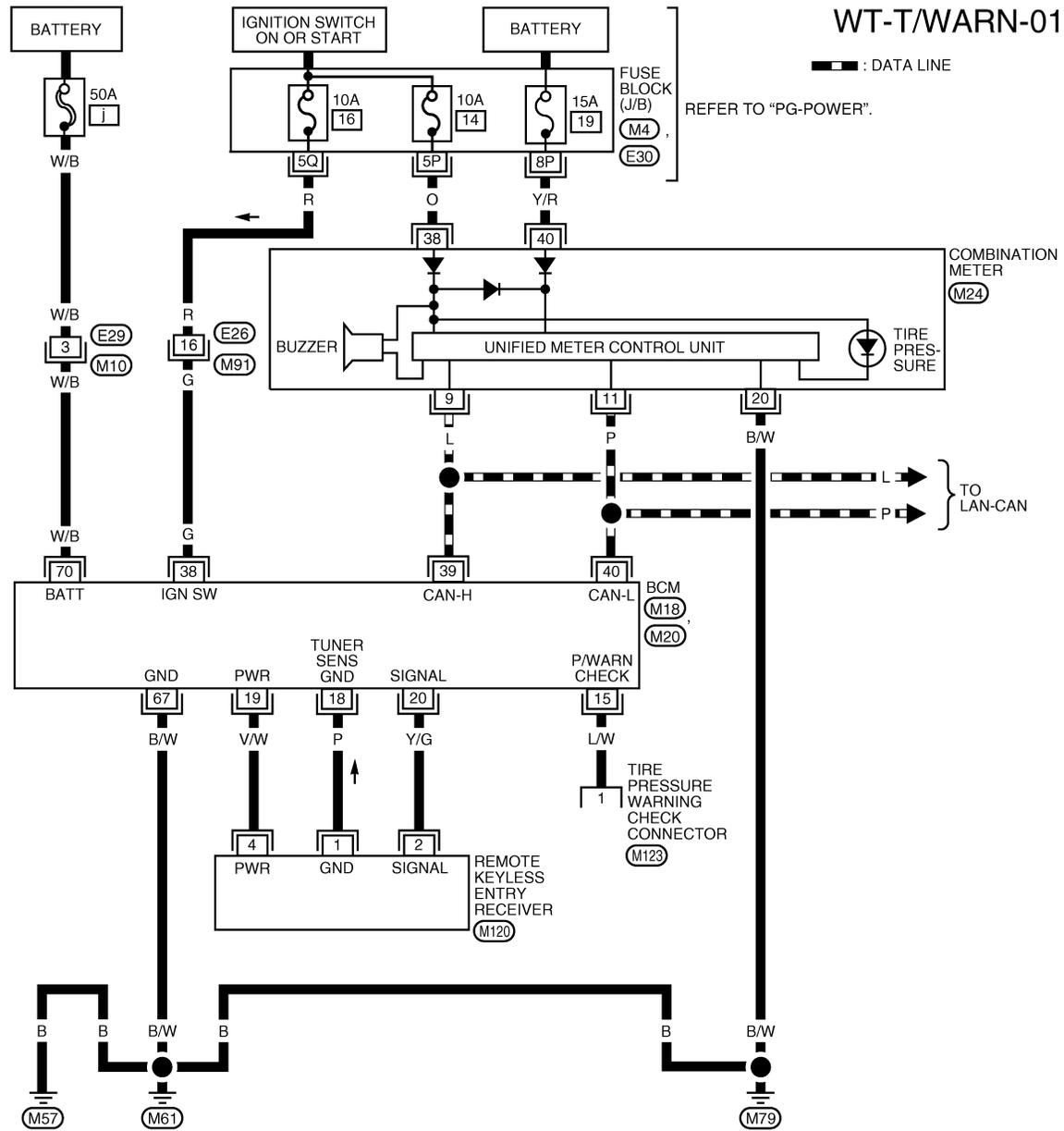
# TROUBLE DIAGNOSES

< SERVICE INFORMATION >

## TROUBLE DIAGNOSES

### Wiring Diagram -T/WARN -

INFOID:000000001718220



WEWA0066E

### Terminal and Reference Value for BCM

INFOID:000000001718221

Refer to [BCS-11, "Terminal and Reference Value for BCM"](#).

# TROUBLE DIAGNOSES

< SERVICE INFORMATION >

## ID Registration Procedure

INFOID:000000001718222

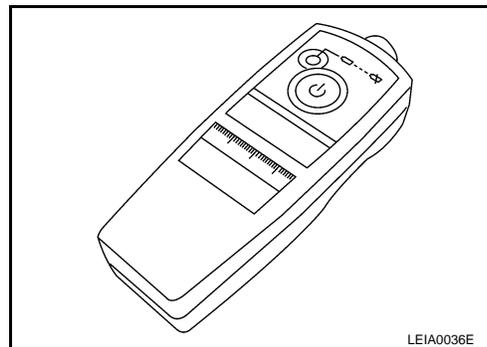
### ID REGISTRATION WITH TRANSMITTER ACTIVATION TOOL

**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-III.
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-III
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-III.
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 <sup>2</sup> , 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.

# TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

Activation tire position	CONSULT-III
Front LH	"YET" ↓ "DONE"
Front RH	
Rear RH	
Rear LH	

6. Inflate all tires to proper pressure. Refer to [WT-29, "Tire"](#).

### Transmitter Wake Up Operation

INFOID:000000001718223

#### WITH TRANSMITTER ACTIVATION TOOL

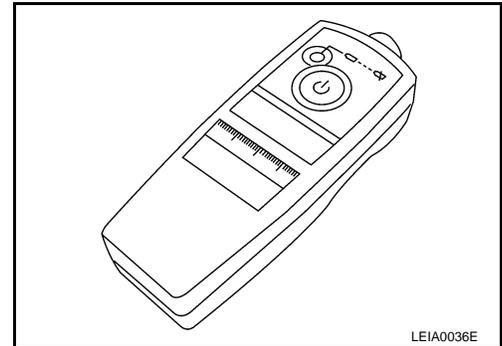
##### NOTE:

**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.**

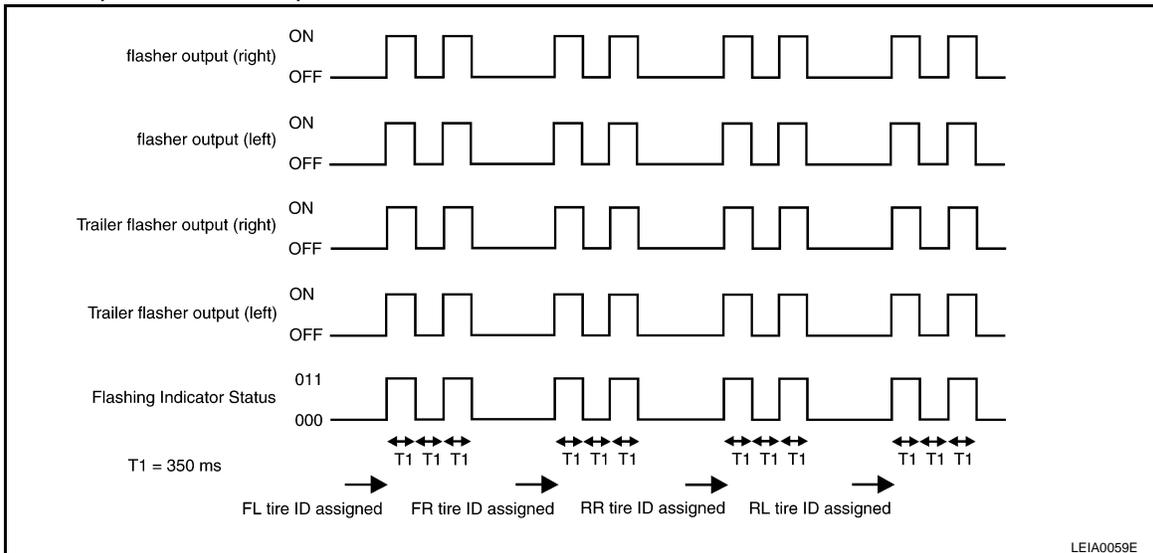
1. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds.

**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 trailer flasher lamps (if equipped) and sends flashing indicator status by CAN according to the following time chart. Please see trailer flasher specification details of trailer flashing lamps since the BCM controls trailer flasher lamps as brake lamps. Refer to [LT-103](#).



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

### CONSULT-III Function (BCM)

INFOID:000000001718224

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

# TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

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

INFOID:000000001718225

### 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, the warning lamp in the combination meter comes on and the buzzer may sound (with PAX tires). The malfunction location is indicated by the warning lamp flashing.

### CONSULT-III 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
FLAT - TIRE - FL [C1730] FLAT - TIRE - FR [C1731] FLAT - TIRE - RR [C1732] FLAT - TIRE - RL [C1733]	FL tire pressure 121 kPa (1.23 kg/cm <sup>2</sup> , 17.5 psi) or less FR tire pressure 121 kPa (1.23 kg/cm <sup>2</sup> , 17.5 psi) or less RR tire pressure 121 kPa (1.23 kg/cm <sup>2</sup> , 17.5 psi) or less RL tire pressure 121 kPa (1.23 kg/cm <sup>2</sup> , 17.5 psi) or less	—
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 <sup>2</sup> , 28 psi) or less FR tire pressure 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) or less RR tire pressure 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) or less RL tire pressure 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) or less	—

# TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

Diagnostic item	Diagnostic item is detected when ...	Reference page
[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.	<a href="#">WT-21</a>
[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.	<a href="#">WT-21</a>
[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.	<a href="#">WT-22</a>
[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.	<a href="#">WT-21</a>
[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.	<a href="#">WT-21</a>
VHCL_SPEED_SIG_ERR [C1729]	Vehicle speed signal is in error.	<a href="#">WT-22</a>

### 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-III.

### 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	<ul style="list-style-type: none"> <li>Drive vehicle for a few minutes.</li> </ul> <p style="text-align: center;">or</p> <ul style="list-style-type: none"> <li>Ignition switch ON and activation tool is transmitting activation signals.</li> </ul>	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 else the actual malfunction location may be different from that displayed on CONSULT-III.

## How to Perform Trouble Diagnosis for Quick and Accurate Repair

INFOID:000000001718226

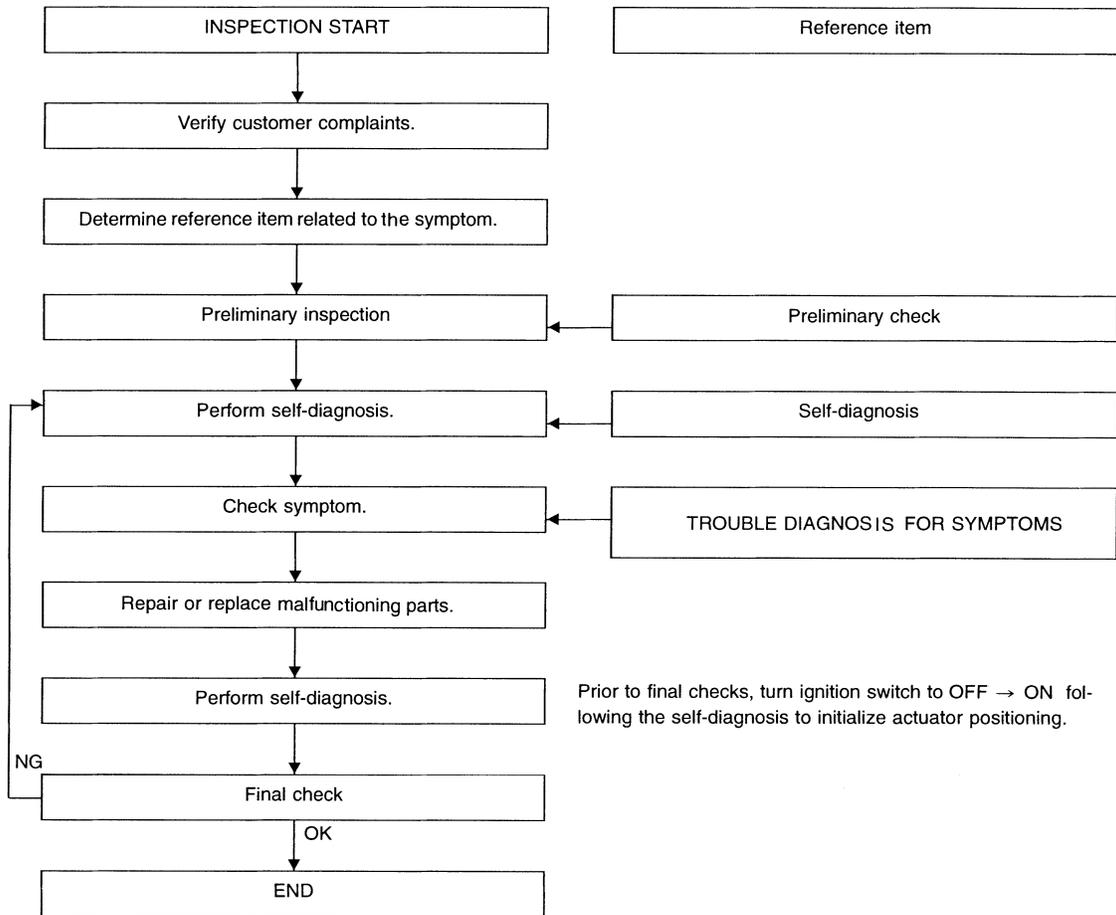
### INTRODUCTION

- 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

# TROUBLE DIAGNOSES

< SERVICE INFORMATION >



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Preliminary check: [WT-19](#)    Self-diagnosis: [WT-15](#)    Trouble diagnosis for symptoms: [WT-23](#)

## Malfunction Code/Symptom Chart

INFOID:000000001718227

### DIAGNOSTIC PROCEDURE

1. Start the engine.
2. Perform the following procedures to enter the corresponding signals.
  - Ground the tire pressure warning check harness connector terminal 1 for more than 5 seconds.
  - Read the flickering of the low tire pressure lamp. Refer to "JUDGEMENT SELF-DIAGNOSIS".

#### NOTE:

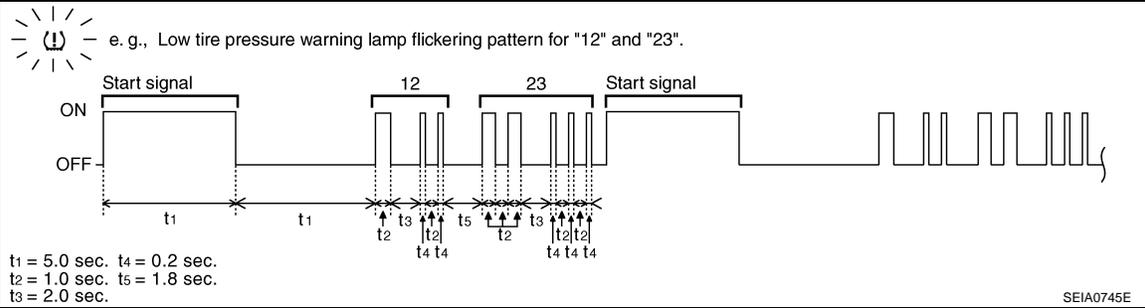
When the low tire pressure warning lamp flashes 5 Hz and continues repeating it, the system is normal.

### JUDGEMENT SELF-DIAGNOSIS

# TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

When a malfunction is detected, the malfunction route is indicated by flickering of the low tire pressure warning lamp.



### NOTE:

When the low tire pressure warning lamp flashes 5 Hz and continues repeating it, the system is normal.

Code/Symptom	Malfunction part	Reference page
15 16 17 18	Front-left tire pressure drops to 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) or less Front-right tire pressure drops to 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) or less Rear-right tire pressure drops to 193 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) or less Rear-left tire pressure drops to 193 kPa (2.0 kg/cm <sup>2</sup> , 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)	<a href="#">WT-21, "Inspection 1 Transmitter or BCM"</a>
31 32 33 34	Transmitter checksum error (front - left) Transmitter checksum error (front - right) Transmitter checksum error (rear - right) Transmitter checksum error (rear - left)	<a href="#">WT-21, "Inspection 2 Transmitter - 1"</a>
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)	<a href="#">WT-22, "Inspection 3 Transmitter - 2"</a>
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)	<a href="#">WT-21, "Inspection 2 Transmitter - 1"</a>
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)	<a href="#">WT-21, "Inspection 2 Transmitter - 1"</a>
52	Vehicle speed signal	<a href="#">WT-22, "Inspection 4 Vehicle Speed Signal"</a>
Low tire pressure warning lamp does not come on when ignition switch is turned on.	Fuse or combination meter BCM connector or circuit BCM	<a href="#">WT-23, "Inspection 1 Warning Lamp Does Not Come On When Ignition Switch Is Turned On"</a>
Low tire pressure warning lamp stays on when ignition switch is turned on.	Fuse or combination meter BCM connector or circuit BCM	<a href="#">WT-23, "Inspection 2 Warning Lamp Stays On When Ignition Switch Is Turned On"</a>

# TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

Code/Symptom	Malfunction part	Reference page
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 yet completed	<a href="#">WT-24. "Inspection 3 Warning Lamp Flashes When Ignition Switch Is Turned On"</a>
Hazard warning lamp flashes when ignition switch is turned on.	BCM harness connector or circuit BCM	<a href="#">WT-25. "Inspection 4 Hazard Warning Lamp Flashes When Ignition Switch Is Turned On"</a>
"TIRE PRESSURE" information in display unit does not exist.	Fuse Display unit BCM	<a href="#">WT-25. "Inspection 5 "TIRE PRES-SURE" Information in Display Unit Does Not Exist"</a>
ID registration cannot be completed.	Transmitter Remote keyless entry receiver harness connector or circuit Remote keyless entry receiver	<a href="#">WT-25. "Inspection 6 ID Registration Cannot Be Completed"</a>

## Preliminary Check

INFOID:000000001718228

### BASIC INSPECTION

#### 1. CHECK ALL TIRE PRESSURES

Check all tire pressures. Refer to [WT-29. "Tire"](#).

##### OK or NG

OK >> GO TO 2.

NG >> Adjust tire pressure to specified value.

#### 2. CHECK LOW TIRE PRESSURE WARNING LAMP ACTIVATION

1. Check low tire pressure warning lamp activation.
2. Does low tire pressure warning lamp activate for 1 second when ignition switch is turned ON?

##### Does warning lamp activate?

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

## TROUBLE DIAGNOSES

### < SERVICE INFORMATION >

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

# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

< SERVICE INFORMATION >

## TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

### Inspection 1 Transmitter or BCM

INFOID:000000001718229

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-III "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-18, "Removal and Installation of BCM"](#).
- NG >> Repair or replace remote keyless entry receiver connector.

#### 3. ID REGISTRATION

Carry out ID registration of all transmitters.

Is there a tire that cannot register ID?

- YES >> Replace transmitter of the tire, then GO TO 5.
- 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-III "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.
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. Then check all tire pressures with CONSULT-III "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

INFOID:000000001718230

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.
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.

Can ID registration of all transmitters be completed?

- YES >> GO TO 3.
- NO >> GO TO Inspection 1. Refer to [WT-21, "Inspection 1 Transmitter or BCM"](#).

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# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

## < SERVICE INFORMATION >

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### 3.VEHICLE DRIVING

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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. Then check all tire pressures with CONSULT-III "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.

#### Inspection 3 Transmitter - 2

INFOID:000000001718231

MALFUNCTION CODE NO. 35, 36, 37 or 38

### 1.CHECK ALL TIRE PRESSURES

---

Check all tire pressures. Refer to [WT-29, "Tire"](#).

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

NO >> GO TO 2.

YES >> Adjust tire pressure to specified value.

### 2.VEHICLE DRIVING

---

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

>> Replace transmitter with new one if "DATA MONITOR ITEM" displays 64 psi or more. Then GO TO 3.

### 3.ID REGISTRATION AND VEHICLE DRIVING

---

- Carry out ID registration of all transmitters.
- 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. Then check all tire pressures with CONSULT-III "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

INFOID:000000001718232

MALFUNCTION CODE NO. 52 [DTC C1729]

### 1.SELF-DIAGNOSTIC RESULT CHECK

---

Using CONSULT-III, 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-38](#).

NO >> GO TO 2.

### 2.CHECK BCM

---

Perform BCM diagnosis. Refer to [BCS-15, "CONSULT-III Function \(BCM\)"](#).

Inspection results OK?

OK >> Perform Vehicle Speed Sensor Inspection. Refer to [AT-104, "Diagnosis Procedure"](#).

NG >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).

# TROUBLE DIAGNOSIS FOR SYMPTOMS

< SERVICE INFORMATION >

## TROUBLE DIAGNOSIS FOR SYMPTOMS

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

INFOID:000000001718233

#### DIAGNOSTIC PROCEDURE

#### 1.SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-III, 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-38](#).
- 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-17, "Trouble Diagnosis"](#).

#### 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-18, "Removal and Installation of BCM"](#).
- NO >> Check combination meter and repair or replace.

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

INFOID:000000001718234

#### 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 POWER SUPPLY CIRCUIT (BAT)

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

1.

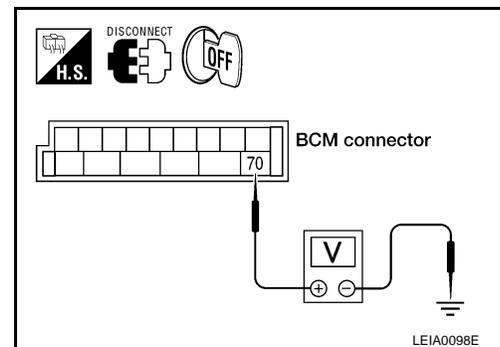
Terminals		Voltage (Approx.)
(+)	(-)	
Connector	Terminal	Battery Voltage
M20	70	

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.



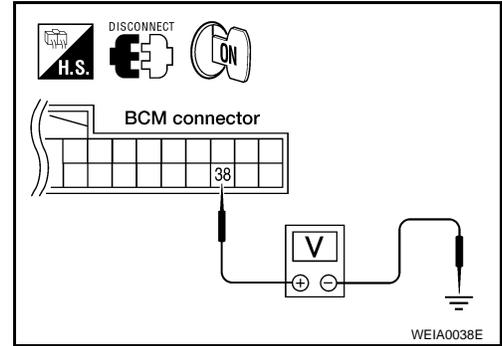
# TROUBLE DIAGNOSIS FOR SYMPTOMS

< SERVICE INFORMATION >

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

OK or NG

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



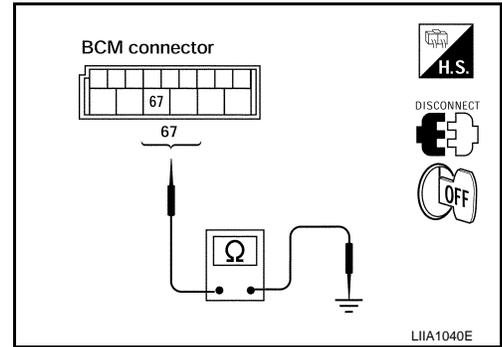
## 4. CHECK GROUND CIRCUIT

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

Terminals		Continuity
Connector	Terminal	
M20	67	Ground
		Yes

OK or NG

- OK >> Reconnect BCM and perform combination meter check [DI-13, "Self-Diagnosis Mode of Combination Meter"](#). If OK, replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).
- NG >> Repair or replace BCM ground circuit.



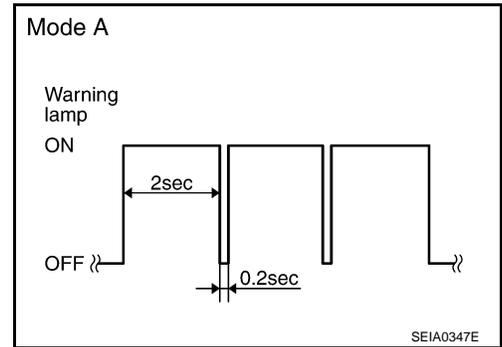
## Inspection 3 Warning Lamp Flashes When Ignition Switch Is Turned On

INFOID:000000001718235

### 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-14, "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.

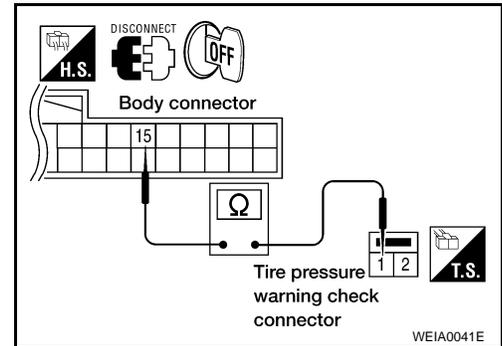
# TROUBLE DIAGNOSIS FOR SYMPTOMS

## < SERVICE INFORMATION >

**Continuity should exist.**

### OK or NG

- OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).
- NG >> Repair or replace harness connector.



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

INFOID:000000001718236

### DIAGNOSTIC PROCEDURE

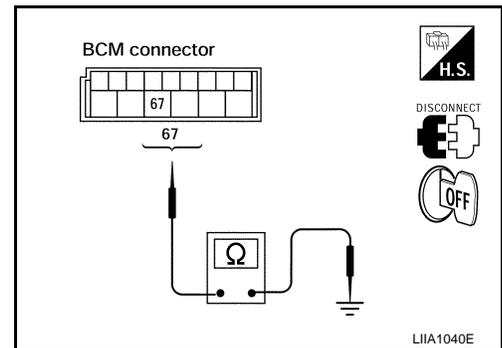
#### 1. CHECK GROUND CIRCUIT

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	Yes
M19	67	
		Ground

### OK or NG

- OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).
- NG >> Repair or replace BCM ground circuit.



## Inspection 5 "TIRE PRESSURE" Information in Display Unit Does Not Exist

INFOID:000000001718237

### DIAGNOSTIC PROCEDURE

#### 1. SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-III, 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-38](#).
- NO >> GO TO 2.

#### 2. CHECK DISPLAY UNIT

Perform display unit self-diagnosis. Refer to [AV-120, "Self-Diagnosis Mode"](#) without NAVI or [AV-171, "Self-Diagnosis Mode \(NAVI\)"](#) with NAVI.

Inspection results OK?

- OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).
- NG >> Repair or replace malfunctioning parts.

## Inspection 6 ID Registration Cannot Be Completed

INFOID:000000001718238

### DIAGNOSTIC PROCEDURE

#### 1. ID REGISTRATION (ALL)

Carry out ID registration of all transmitters.

Can ID registration of all transmitters be completed?

## TROUBLE DIAGNOSIS FOR SYMPTOMS

< SERVICE INFORMATION >

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- YES >> Inspection End.
- NO >> GO TO [WT-21, "Inspection 1 Transmitter or BCM"](#).

# REMOVAL AND INSTALLATION

< SERVICE INFORMATION >

## REMOVAL AND INSTALLATION

### Transmitter (Pressure Sensor)

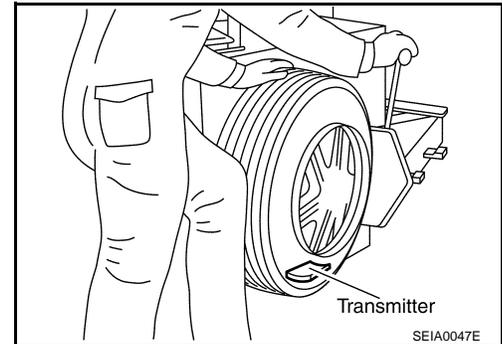
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#### CAUTION:

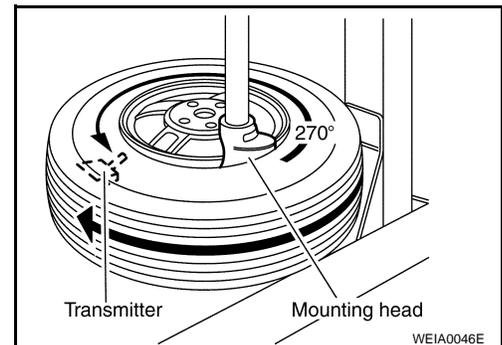
- Servicing PAX run flat tires and wheels requires special tire equipment and training. DO NOT service PAX Run Flat tires and wheels with conventional tire servicing equipment or damage to the tire and wheel will result.
- If a PAX run flat tire and wheel [or transmitter (pressure sensor)] requires service, and the proper servicing equipment is not available, then replace the complete PAX tire and wheel assembly.

#### 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.

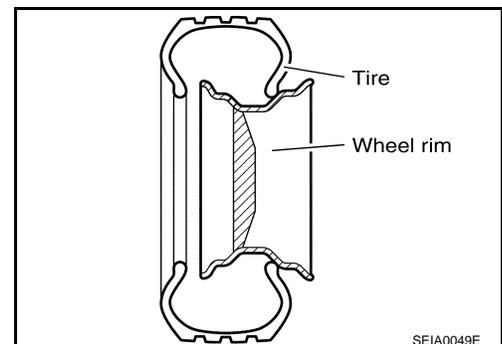


4. Turn tire so that valve hole is at bottom, and gently bounce the tire to ensure transmitter is near valve hole. Carefully lift tire onto turntable and position valve hole (and transmitter) 270 degrees from mounting/dismounting head.
5. Lubricate tire well, and remove top side of tire. Reach inside 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-11](#).

#### NOTE:

Always replace the seal after every disassembly.

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## REMOVAL AND INSTALLATION

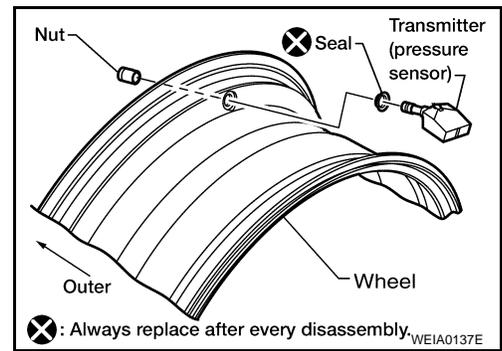
### < SERVICE INFORMATION >

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:**

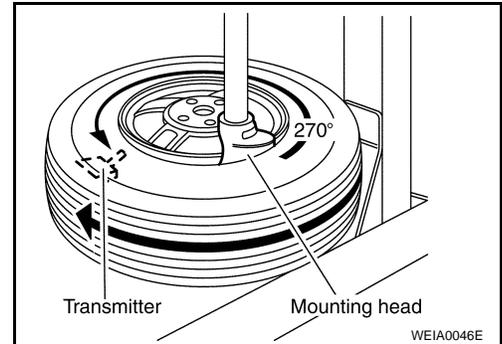
Do not touch transmitter with mounting head.

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, "Conventional Tire and Wheel"](#).
7. Install wheel and tire assembly in appropriate wheel position on vehicle. Refer to [WT-6, "Conventional Tire and Wheel"](#).

**NOTE:**

If replacing the transmitter, then transmitter wake up operation must be performed. Refer to [WT-14, "Transmitter Wake Up Operation"](#).

8. Adjust neutral position of steering angle sensor, if equipped. Refer to [BRC-84, "Adjustment of Steering Angle Sensor Neutral Position"](#).



# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE INFORMATION >

## SERVICE DATA AND SPECIFICATIONS (SDS)

### Road Wheel

INFOID:000000001718240

Wheel type		Aluminum	Steel	
			Inside	Outside
Maximum radial runout limit	Lateral mm (in)	0.3 (0.012) or less	1.0 (0.039) or less	0.9 (0.035) or less
	Radial mm (in)	0.3 (0.012) or less	0.8 (0.031) or less	0.4 (0.016) or less
Maximum residual imbalance	Dynamic (at rim flange)	Less than 5 g (0.18 oz) (per side)		
	Static (at rim flange)	Less than 10 g (0.35 oz)		

### Tire

INFOID:000000001718241

Unit: kPa (kg/cm<sup>2</sup>, psi)

Tire size	Air pressure	
	Conventional tire	Spare tire
T135/80*16	—	420 (4.2, 60)
P225/65R16	240 (2.4, 35)	—
P225/60R17	240 (2.4, 35)	—
225-700R480A	240 (2.4, 35)	—
Speed Rating	H	—

\*: D or R depending on manufacturer.