SECTION WT
ROAD WHEELS & TIRES

CONTENTS

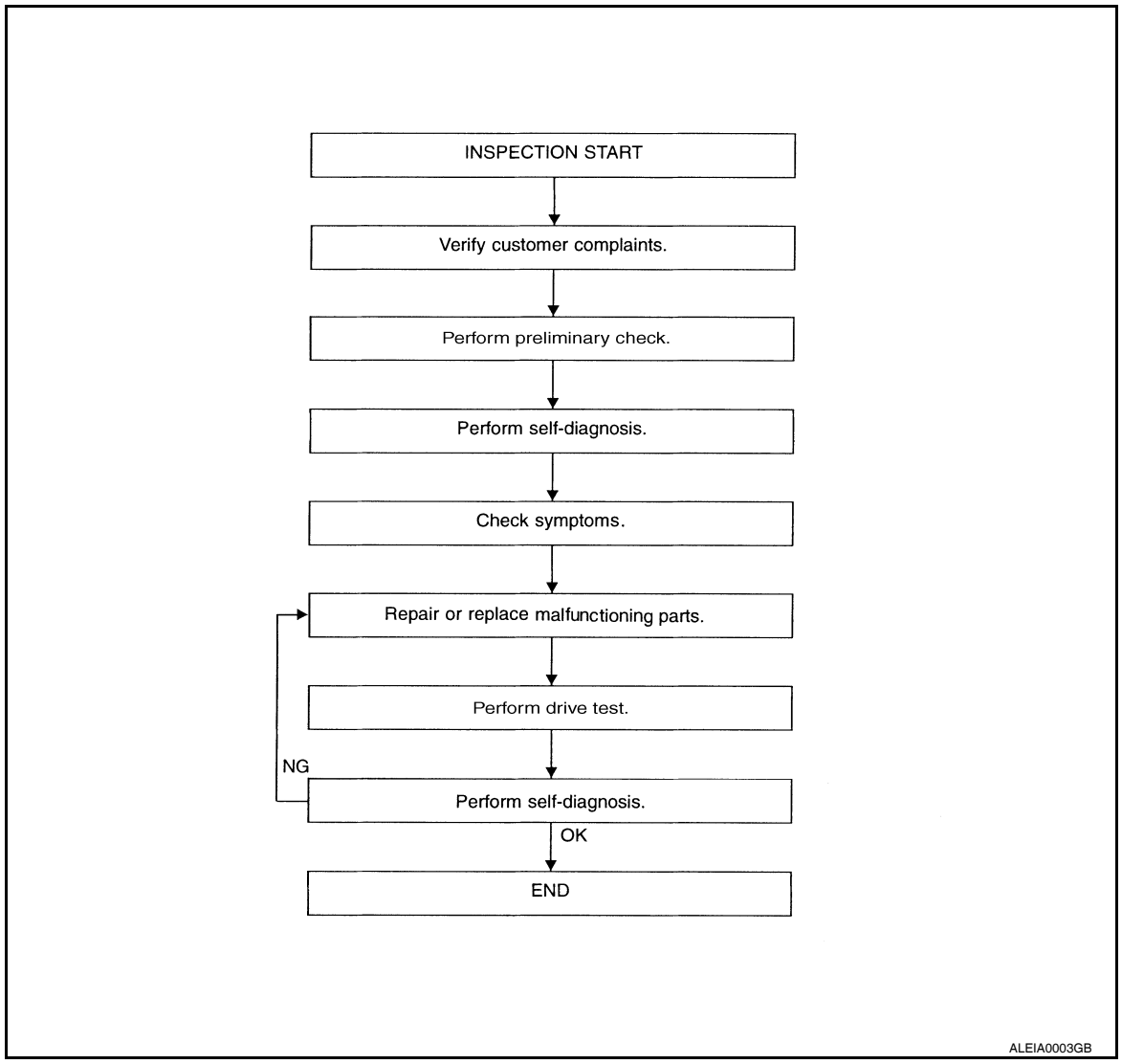
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Repair Work Flow

INFOID:0000000005255785

WORK FLOW



WT-5, "Preliminary Check"

WT-33, "Self-Diagnosis (With CONSULT-III)"
WT-34, "Self-Diagnosis (Without CONSULT-III)"

WT-36, "Symptom Table"

DETAILED FLOW

1.CUSTOMER INFORMATION

Interview the customer to obtain detailed information about the symptom.

>> GO TO 2

2.PRELIMINARY CHECK

Perform preliminary check. Refer to WT-5, "Preliminary Check".

>> GO TO 3

3.SELF-DIAGNOSIS

Perform SELF-DIAGNOSIS. Refer to WT-33, "Self-Diagnosis (With CONSULT-III)" or WT-34, "Self-Diagnosis (Without CONSULT-III)".

>> GO TO 4

4.SYMPTOM

Check for symptoms. Refer to WT-36, "Symptom Table".

>> GO TO 5

5.MALFUNCTIONING PARTS

Repair or replace the applicable parts.

>> GO TO 6

6.DRIVE TEST

1. Perform a drive test.
2. Check the low tire pressure warning lamp.

>> GO TO 7

7.SELF-DIAGNOSIS

Perform SELF-DIAGNOSIS. Refer to WT-33, "Self-Diagnosis (With CONSULT-III)" or WT-34, "Self-Diagnosis (Without CONSULT-III)".

Are any DTC's displayed?

YES >> GO TO 5
NO >> Inspection End

INSPECTION AND ADJUSTMENT

Preliminary Check

INFOID:0000000005255786

1. TIRE PRESSURE

Check all tire pressures. Refer to WT-53, "Tire".

Do tire pressures match specification?

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

2. LOW TIRE PRESSURE WARNING LAMP

Check low tire pressure warning lamp activation.

Does the low tire pressure warning lamp activate for one second when ignition switch is turned ON?

YES >> GO TO 3.
NO >> GO TO WT-37, "Low Tire Pressure Warning Lamp Does Not Come On When Ignition Switch Is Turned On".

3. BCM CONNECTOR

1. Disconnect BCM harness connectors.
2. Check terminals for damage or loose connections.
3. Reconnect harness connectors.

Are BCM connectors damaged or loose?

YES >> Repair or replace damaged parts.
NO >> GO TO 4.

4. TRANSMITTER ACTIVATION TOOL

Check battery in transmitter activation tool.

Is transmitter activation tool battery fully charged?

YES >> Perform self-diagnosis. Refer to WT-33, "Self-Diagnosis (With CONSULT-III)".
NO >> Replace battery in transmitter activation tool.

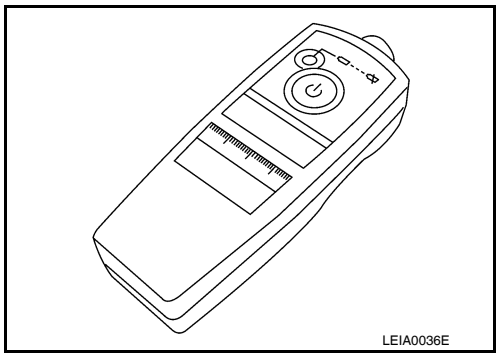
Transmitter Wake Up Operation

INFOID:0000000005255787

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.

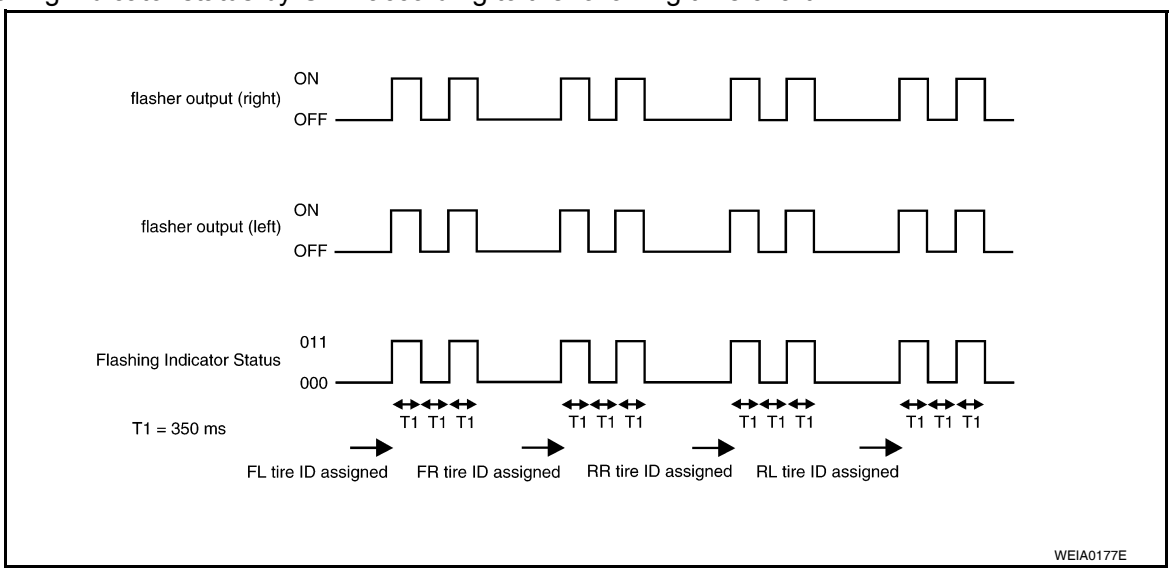
1. Turn ignition switch ON. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds. The hazard warning lamps flash per the following diagram.

Tool number : (J-45295)



2. Repeat this procedure for each tire in the following order: FL, FR, RR, RL.

3. 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.



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

ID Registration Procedure

INFOID:0000000005255788

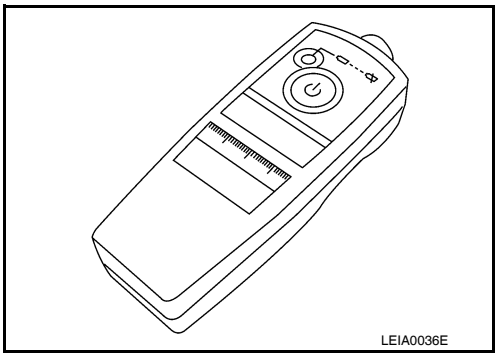
ID REGISTRATION WITH TRANSMITTER ACTIVATION TOOL

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 ID REGIST under BCM.
3. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds.

Tool number : (J-45295)



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

Step	Activation tire position	Hazard warning lamp	CONSULT-III
1	Front LH	2 times flashing	YET ↓ DONE
2	Front RH		
3	Rear RH		
4	Rear LH		

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

NOTE:

Be sure to register all of 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 ID REGIST under BCM.
3. Adjust the tire pressures to the values shown in the table and drive the vehicle at 40 km/h (25 MPH) or more for a few minutes.

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

4. After completing all ID registrations, press END to complete the procedure.

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

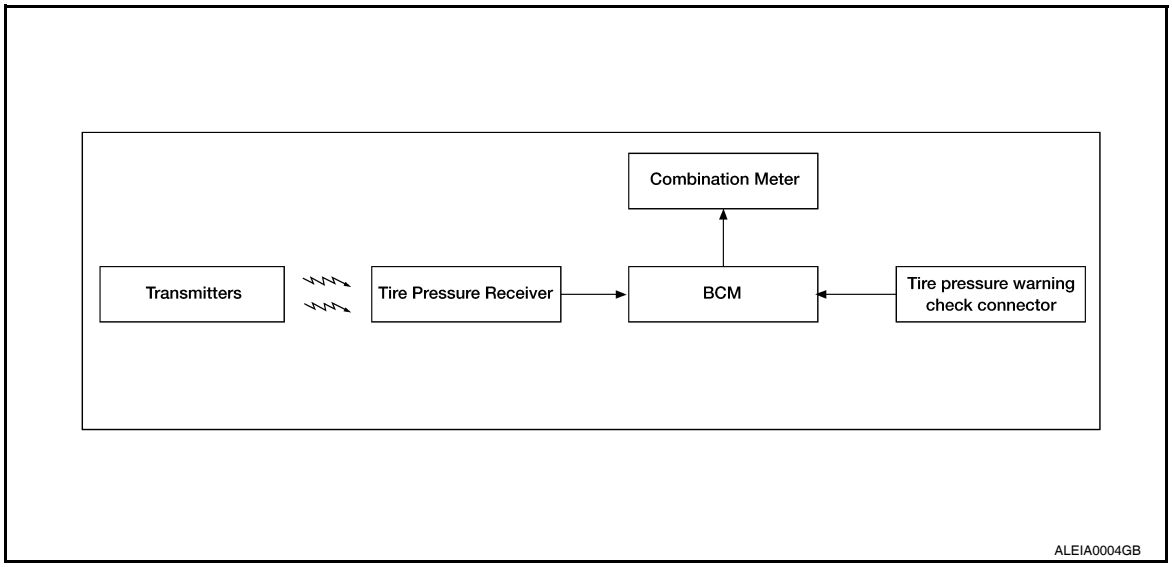
5. Inflate all tires to proper pressure. Refer to WT-53, "Tire".

FUNCTION DIAGNOSIS

TPMS

System Diagram

INFOID:0000000005255789

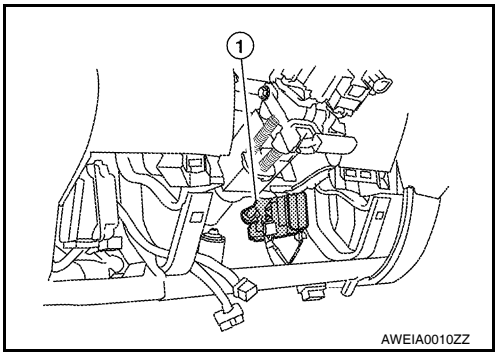


System Description

INFOID:0000000005255790

BODY CONTROL MODULE (BCM)

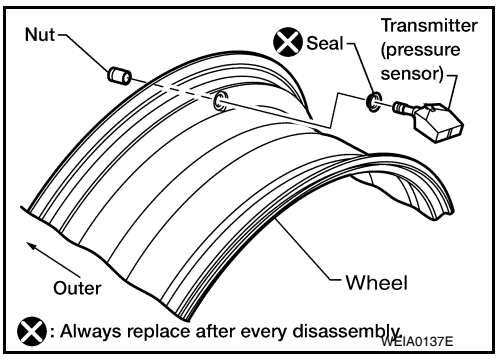
The BCM (1) is shown with the lower instrument panel LH removed. The BCM reads the air pressure signal received by the remote keyless entry receiver, and controls the low tire pressure warning lamp as shown below. It also has a self-diagnosis function to detect a system malfunction.



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 warning system malfunction	After key ON, flashes once per second for 1 minute, then stays ON

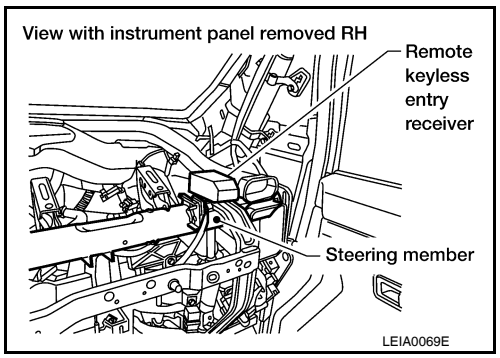
TRANSMITTER

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. The radio signal is received by the remote keyless entry receiver.



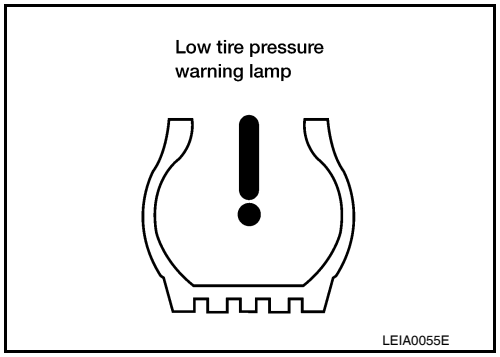
REMOTE KEYLESS ENTRY RECEIVER

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



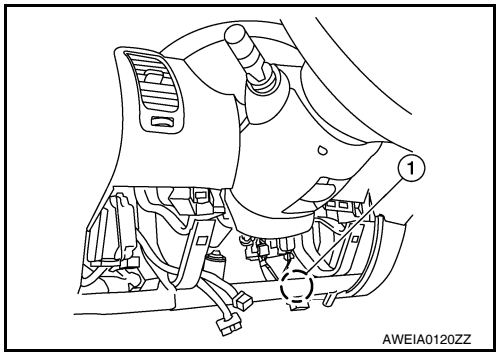
COMBINATION METER

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.



TIRE PRESSURE WARNING CHECK CONNECTOR

The tire pressure warning check connector can be grounded in order to initiate self-diagnosis without a CONSULT-III. Refer to WT-34, "Self-Diagnosis (Without CONSULT-III)". The tire pressure warning check connector (1) is located behind the lower portion of the instrument panel LH.

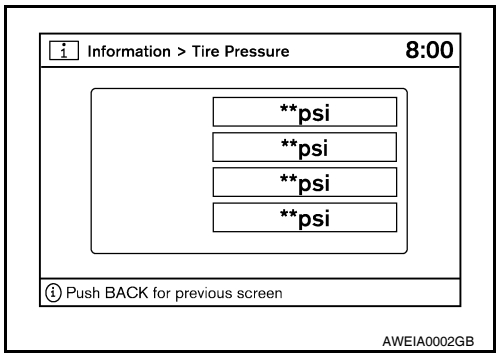


DISPLAY UNIT (if equipped)

Displays the air pressure of each tire.

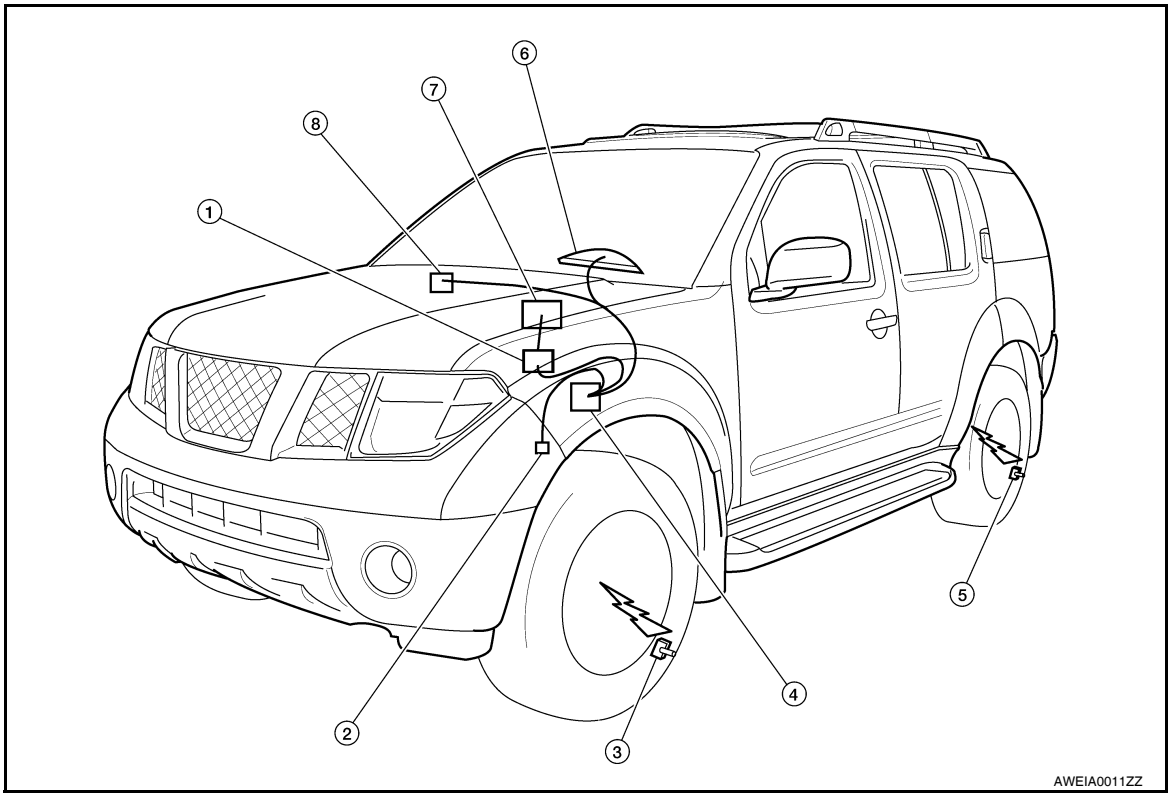
NOTE:

After the ignition switch is turned on, the pressure values will not be displayed until the data of each wheel is received.



System Component

INFOID:0000000005255791



1. AV control unit M37, M48 (with BOSE audio system - with NAVI)
   AV control unit M45, M70 (with BOSE audio system - without NAVI)
   AV control unit M133, M135 (with mid audio system)
2. Tire pressure warning check connector M123
3. Transmitter
4. BCM M18, M20
5. Transmitter
6. Combination meter M24
7. Display unit M92 (with BOSE audio system - with NAVI)
   Display unit M93 (with mid audio system or with BOSE audio system - without NAVI)
8. Remote keyless entry receiver M120

DIAGNOSIS SYSTEM (BCM)

CONSULT-III Function (BCM)

INFOID:0000000005255792

CONSULT-III DIAGNOSTIC MODES

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

Diagnostic mode	Description
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 Diagnostic Result	Displays BCM self-diagnosis results.
CAN Diag Support Monitor	The result of transmit/receive diagnosis of CAN communication can be read.
ECU Identification	BCM part number can be read.
Configuration	Performs BCM configuration read/write functions.

DESCRIPTION

During driving, the tire pressure monitoring system receives the signal transmitted from the transmitter installed in each wheel, and turns on the low tire pressure warning lamp when the tire pressure becomes low. The control unit (BCM) for this system has pressure judgement and self-diagnosis functions.

FUNCTION

When the tire pressure monitoring system detects low inflation pressure or an internal malfunction, the low tire pressure warning lamp in the combination meter comes on. The malfunction is indicated by the low tire pressure warning lamp flashing.

CONSULT-III Application to Tire Pressure Monitoring System

ITEM	SELF DIAGNOSTIC RESULT	DATA MONITOR
Front - Left transmitter	×	×
Front - Right transmitter	×	×
Rear - Left transmitter	×	×
Rear - Right transmitter	×	×
Warning lamp	—	×
Buzzer	—	×
Vehicle speed	×	×
CAN Communication	×	×

× : Applicable

– : Not applicable

Data Monitor Mode

MONITOR	CONDITION	SPECIFICATION
VEHICLE SPEED	Drive vehicle.	Vehicle speed (km/h or MPH)
AIR PRESS FL	• Drive vehicle for a few minutes. or • Ignition switch ON and activation tool is transmitting activation signals.	Tire pressure (kPa or psi)
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

MONITOR	CONDITION	SPECIFICATION
ID REGST FL1	Ignition switch ON	ID not registered: YET ID registered: DONE
ID REGST FR1		
ID REGST RR1		
ID REGST RL1		
WARNING LAMP	Ignition switch ON	Low tire pressure warning lamp on: On Low tire pressure warning lamp off: Off
BUZZER	Ignition switch ON	Low tire pressure buzzer on: On Low tire pressure buzzer off: Off

NOTE:

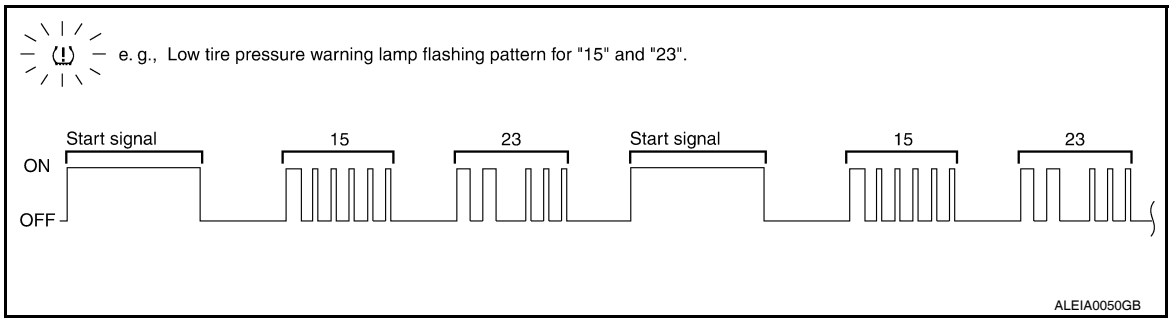
Before performing the self-diagnosis, be sure to register the ID, or the actual malfunction location may be different from that displayed on CONSULT-III.

Self-Diagnosis (Without CONSULT-III)

INFOID:0000000005484847

SELF-DIAGNOSTIC PROCEDURE (WITHOUT CONSULT-III)

1. Turn ignition switch ON.
2. Ground the tire pressure warning check connector to initiate self diagnosis.
3. Compare the flashing pattern with the flash code chart below.



NOTE:

The system is normal when the low tire pressure warning lamp flashes 5 times and continues repeating. Self-diagnosis results are erased automatically by turning the ignition switch “OFF”.

Flash Code	Malfunction part	Reference page
15 16 17 18	Tire pressure dropped below specified value. Refer to WT-8, "System Description".	—
21 22 23 24	Transmitter no data (FL) Transmitter no data (FR) Transmitter no data (RR) Transmitter no data (RL)	WT-14
31 32 33 34	Transmitter checksum error (FL) Transmitter checksum error (FR) Transmitter checksum error (RR) Transmitter checksum error (RL)	WT-16
35 36 37 38	Transmitter pressure data error (FL) Transmitter pressure data error (FR) Transmitter pressure data error (RR) Transmitter pressure data error (RL)	WT-18
41 42 43 44	Transmitter function code error (FL) Transmitter function code error (FR) Transmitter function code error (RR) Transmitter function code error (RL)	WT-16

Flash Code	Malfunction part	Reference page
45 46 47 48	Transmitter battery voltage low (FL) Transmitter battery voltage low (FR) Transmitter battery voltage low (RR) Transmitter battery voltage low (RL)	WT-16
52	Vehicle speed signal	WT-19
54	Vehicle ignition signal	WT-20

COMPONENT DIAGNOSIS

C1708 - C1711 DATA FROM TRANSMITTER NOT BEING RECEIVED

Description

INFOID:0000000005255794

Tire pressure data for one or more transmitters is not being received by the BCM.

DTC Logic

INFOID:0000000005255795

DTC DETECTION LOGIC

DTC	CONSULT-III	DTC detecting condition
C1708	[NO - DATA] - FL	Data from FL transmitter cannot be received.
C1709	[NO - DATA] - FR	Data from FR transmitter cannot be received.
C1710	[NO - DATA] - RR	Data from RR transmitter cannot be received.
C1711	[NO - DATA] - RL	Data from RL transmitter cannot be received.

DTC CONFIRMATION PROCEDURE

1.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.
3. Check all tire pressures with CONSULT-III within 5 minutes.

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

YES >> Inspection End.
NO >> Refer to WT-14, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005255796

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

1.CHECK BCM

Drive for several minutes. Check all tire pressures with CONSULT-III.

Are all tire pressures displayed as 0 kPa?

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

2.CHECK TIRE PRESSURE RECEIVER CONNECTOR

Check tire pressure receiver connector for damage or loose connection.

Is tire pressure receiver connector damaged or loose?

YES >> Repair or replace tire pressure receiver connector.
NO >> Replace BCM, then GO TO 3. Refer to BCS-59, "Removal and Installation".

3.PERFORM ID REGISTRATION

Carry out ID registration of all transmitters. Refer to WT-6, "ID Registration Procedure".

Is there a tire that cannot register ID?

YES >> Replace malfunctioning transmitter, then GO TO 5. Refer to WT-51, "Transmitter (Pressure Sensor)".
NO >> GO TO 4

4.DRIVE VEHICLE

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 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.
3. Check all tire pressures with CONSULT-III within 5 minutes.

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

YES >> Inspection End.
NO >> Proceed to the inspection applicable to DTC.

Special Repair Requirement

INFOID:0000000005255797

Perform preliminary check. Refer to WT-5, "Preliminary Check".

C1712 - C1715, C1720 - C1723, C1724 - C1727 TRANSMITTER MALFUNCTION

Description

INFOID:0000000005255798

One or more transmitters are malfunctioning internally.

DTC Logic

INFOID:0000000005255799

DTC DETECTION LOGIC

DTC	CONSULT-III	DTC detecting condition
C1712	[CHECKSUM - ERR] - FL	Checksum data from FL transmitter is malfunctioning.
C1713	[CHECKSUM - ERR] - FR	Checksum data from FR transmitter is malfunctioning.
C1714	[CHECKSUM - ERR] - RR	Checksum data from RR transmitter is malfunctioning.
C1715	[CHECKSUM - ERR] - RL	Checksum data from RL transmitter is malfunctioning.
C1720	[CODE - ERR] - FL	Function code data from FL transmitter is malfunctioning.
C1721	[CODE - ERR] - FR	Function code data from FR transmitter is malfunctioning.
C1722	[CODE - ERR] - RR	Function code data from RR transmitter is malfunctioning.
C1723	[CODE - ERR] - RL	Function code data from RL transmitter is malfunctioning.
C1724	[BATT - VOLT - LOW] - FL	Battery voltage of FL transmitter drops.
C1725	[BATT - VOLT - LOW] - FR	Battery voltage of FR transmitter drops.
C1726	[BATT - VOLT - LOW] - RR	Battery voltage of RR transmitter drops.
C1727	[BATT - VOLT - LOW] - RL	Battery voltage of RL transmitter drops.

DTC CONFIRMATION PROCEDURE

1.DRIVE VEHICLE

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-III within 5 minutes.

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

YES >> Inspection End.
NO >> Refer to WT-16, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005255800

MALFUNCTION CODE NO. 31, 32, 33, 34, 41, 42, 43, 44, 45, 46, 47 OR 48 (DTC C1712, C1713, C1714, C1715, C1720, C1721, C1722, C1723, C1724, C1725, C1726 OR C1727)

1.PERFORM ID REGISTRATION

1. Carry out ID registration of all transmitters. Refer to WT-6, "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. Refer to WT-51, "Transmitter (Pressure Sensor)".
2. Carry out ID registration of all transmitters.

Can ID registration of all transmitters be completed?

YES >> GO TO 3
NO >> GO TO WT-14, "Diagnosis Procedure".

3. DRIVE VEHICLE

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-III 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.

Special Repair Requirement

INFOID:0000000005484848

Perform preliminary check. Refer to WT-5, "Preliminary Check".

C1716 - C1719 TRANSMITTER PRESSURE MALFUNCTION

Description

INFOID:0000000005255802

Air pressure data from one or more transmitters is out of range.

DTC Logic

INFOID:0000000005255803

DTC DETECTION LOGIC

DTC	CONSULT - III	DTC detecting condition
C1716	[PRESSDATA - ERR] FL	Air pressure data from FL transmitter is malfunctioning.
C1717	[PRESSDATA - ERR] FR	Air pressure data from FR transmitter is malfunctioning.
C1718	[PRESSDATA - ERR] RR	Air pressure data from RR transmitter is malfunctioning.
C1719	[PRESSDATA - ERR] RL	Air pressure data from RL transmitter is malfunctioning.

DTC CONFIRMATION PROCEDURE

1.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.
3. Check all tire pressures with CONSULT-III within 5 minutes.

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

YES >> Inspection End.
NO >> Refer to WT-18, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000005255804

MALFUNCTION CODE NO. 35, 36, 37 OR 38 (DTC C1716, C1717, C1718 OR C1719)

1.CHECK ALL TIRE PRESSURES

Check all tire pressures. Refer to WT-53, "Tire".

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

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

2.ID REGISTRATION AND VEHICLE DRIVING

1. Carry out ID registration of all transmitters. Refer to WT-6, "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-III 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-51, "Transmitter (Pressure Sensor)". GO TO 3.
NO >> GO TO 3

3.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.
3. Check all tire pressures with CONSULT-III within 5 minutes.

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

YES >> Inspection End.
NO >> Proceed to the inspection applicable to DTC.

Special Repair Requirement

INFOID:0000000005484849

Perform preliminary check. Refer to WT-5, "Preliminary Check".

C1729 VEHICLE SPEED SIGNAL

Description

INFOID:0000000005255806

The vehicle speed signal is not being detected by the BCM.

DTC Logic

INFOID:0000000005255807

DTC DETECTION LOGIC

DTC	CONSULT - III	DTC detecting condition
C1729	VHCL SPEED SIG ERR	Vehicle speed signal is in error.

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSTIC RESULTS

1. On SELECT DIAG MODE, select the SELF-DIAG RESULT screen.
2. Check display contents on SELF DIAG RESULT screen.

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

YES >> Refer to WT-19, "Diagnosis Procedure".
NO >> Inspection end.

Diagnosis Procedure

INFOID:0000000005255808

MALFUNCTION CODE NO. 52 (DTC C1729)

1.CHECK SELF-DIAGNOSTIC RESULTS

1. On SELECT DIAG MODE, select the SELF-DIAG RESULT screen.
2. Check display contents on SELF DIAG RESULT screen.

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

YES >> Perform trouble diagnosis for CAN communication system. Refer to LAN-14, "Trouble Diagnosis Flow Chart".
NO >> Check combination meter. Refer to MWI-24, "CONSULT-III Function (METER/M&A)".

Special Repair Requirement

INFOID:0000000005484850

Perform preliminary check. Refer to WT-5, "Preliminary Check".

C1735 IGNITION SIGNAL

Description

INFOID:0000000005255810

The BCM monitors the IGN ON signal on the CAN line and compares it to it's direct IGN ON signal. When these two signals do not match, the BCM sets C1735.

DTC Logic

INFOID:0000000005255811

DTC DETECTION LOGIC

DTC	CONSULT - III	DTC detecting condition
C1735	IGNITION SIGNAL LINE - BCM/TPMS	BCM has detected a mismatch between IGN ON signals.

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAGNOSTIC RESULTS

1. On SELECT DIAG MODE, select the SELF-DIAG RESULT screen.
2. Check display contents on SELF DIAG RESULT screen.

Is C1735 displayed in the self-diagnosis display?

YES >> Refer to WT-20, "Diagnosis Procedure".
NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000005255812

MALFUNCTION CODE NO. 54 (DTC C1735)

1.CAN IGNITION SIGNAL

Check BCM IGN RLY signal with CONSULT-III. Refer to WT-21, "Reference Value".

Are the inspection results normal with the ignition switch ON?

YES >> GO TO 2.
NO >> Check CAN system. Refer to LAN-14, "Trouble Diagnosis Flow Chart".

2.BCM POWER SUPPLY

Check BCM power supply (ignition ON). Refer to BCS-34, "Diagnosis Procedure".

Is the power supply with the ignition switch ON normal?

YES >> GO TO 3.
NO >> Repair power supply as necessary.

3.DRIVE VEHICLE

Clear DTC and then test drive the vehicle and check the low tire pressure warning lamp.

Does the vehicle operate without any low tire pressure warning lamp?

YES >> Inspection End.
NO >> Replace BCM. Refer to BCS-59, "Removal and Installation".

Special Repair Requirement

INFOID:0000000005484851

Perform preliminary check. Refer to WT-5, "Preliminary Check".

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000005484852

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
AIR COND SW	A/C switch OFF	OFF
	A/C switch ON	ON
AUT LIGHT SYS	Outside of the room is dark	OFF
	Outside of the room is bright	ON
AUTO LIGHT SW	Lighting switch OFF	OFF
	Lighting switch AUTO	ON
BACK DOOR SW	Back door closed	OFF
	Back door opened	ON
CDL LOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the LOCK side	ON
CDL UNLOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the UNLOCK side	ON
DOOR SW-AS	Front door RH closed	OFF
	Front door RH opened	ON
DOOR SW-DR	Front door LH closed	OFF
	Front door LH opened	ON
DOOR SW-RL	Rear door LH closed	OFF
	Rear door LH opened	ON
DOOR SW-RR	Rear door RH closed	OFF
	Rear door RH opened	ON
ENGINE RUN	Engine stopped	OFF
	Engine running	ON
FR FOG SW	Front fog lamp switch OFF	OFF
	Front fog lamp switch ON	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER LOW	Front wiper switch OFF	OFF
	Front wiper switch LO	ON
FR WIPER HI	Front wiper switch OFF	OFF
	Front wiper switch HI	ON
FR WIPER INT	Front wiper switch OFF	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Any position other than front wiper stop position	OFF
	Front wiper stop position	ON
HAZARD SW	When hazard switch is not pressed	OFF
	When hazard switch is pressed	ON
LIGHT SW 1ST	Lighting switch OFF	OFF
	Lighting switch 1st	ON

Monitor Item	Condition	Value/Status
HEAD LAMP SW1	Headlamp switch OFF	OFF
	Headlamp switch 1st	ON
HEAD LAMP SW2	Headlamp switch OFF	OFF
	Headlamp switch 1st	ON
HI BEAM SW	High beam switch OFF	OFF
	High beam switch HI	ON
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
I-KEY LOCK[1]	LOCK button of Intelligent Key is not pressed	OFF
	LOCK button of Intelligent Key is pressed	ON
I-KEY UNLOCK[1]	UNLOCK button of Intelligent Key is not pressed	OFF
	UNLOCK button of Intelligent Key is pressed	ON
KEY ON SW	Mechanical key is removed from key cylinder	OFF
	Mechanical key is inserted to key cylinder	ON
KEYLESS LOCK[2]	LOCK button of key fob is not pressed	OFF
	LOCK button of key fob is pressed	ON
KEYLESS UNLOCK[2]	UNLOCK button of key fob is not pressed	OFF
	UNLOCK button of key fob is pressed	ON
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	OFF
	Ignition switch ON	ON
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
PUSH SW[1]	Return to ignition switch to LOCK position	OFF
	Press ignition switch	ON
REAR DEF SW	Rear window defogger switch OFF	OFF
	Rear window defogger switch ON	ON
RR WASHER SW	Rear washer switch OFF	OFF
	Rear washer switch ON	ON
RR WIPER INT	Rear wiper switch OFF	OFF
	Rear wiper switch INT	ON
RR WIPER ON	Rear wiper switch OFF	OFF
	Rear wiper switch ON	ON
RR WIPER STOP	Rear wiper stop position	OFF
	Other than rear wiper stop position	ON
TAIL LAMP SW	Lighting switch OFF	OFF
	Lighting switch 1ST	ON
TRNK OPNR SW	When back door opener switch is not pressed	OFF
	When back door opener switch is pressed	ON
TURN SIGNAL L	Turn signal switch OFF	OFF
	Turn signal switch LH	ON

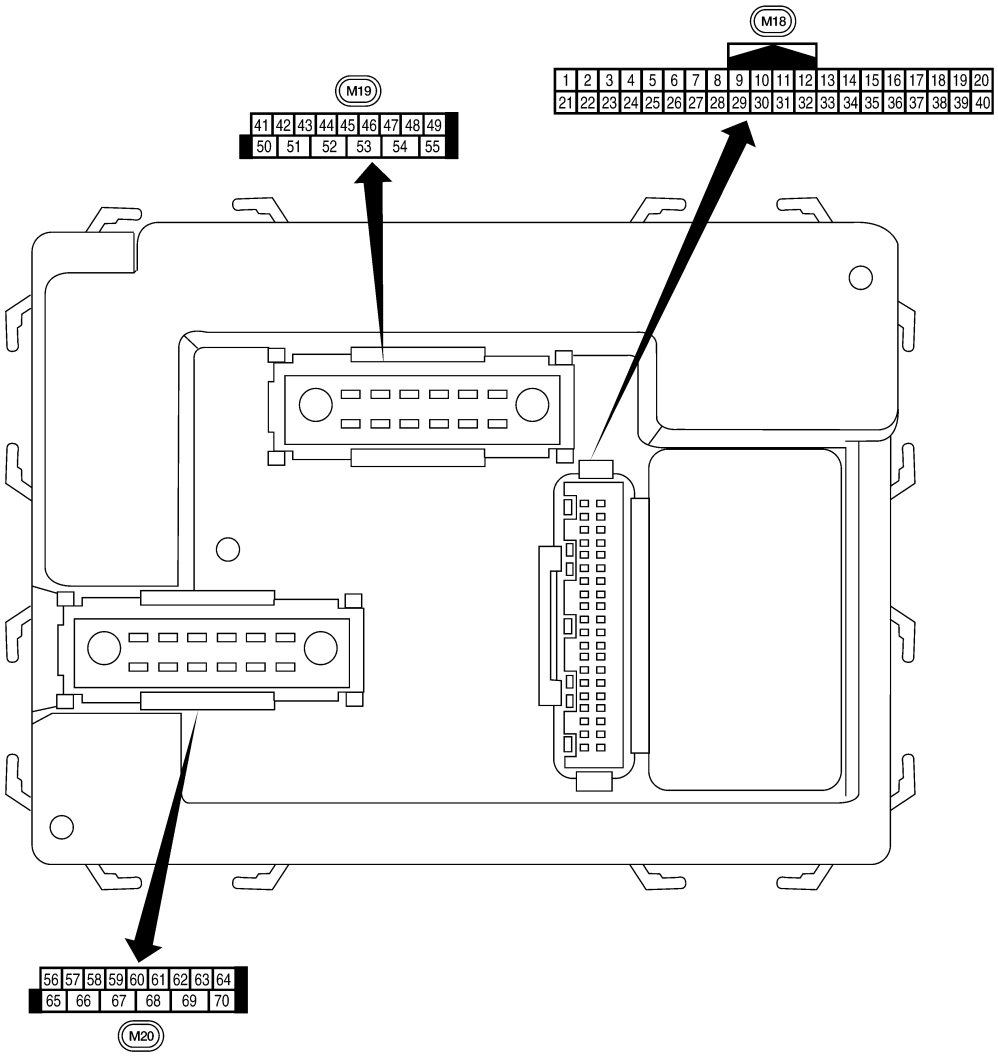
Monitor Item	Condition	Value/Status
TURN SIGNAL R	Turn signal switch OFF	OFF
	Turn signal switch RH	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

1: With Intelligent Key

2: With remote keyless entry system

Terminal Layout

INFOID:0000000005484853



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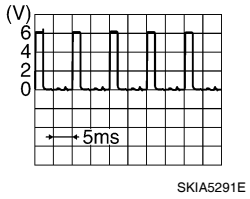
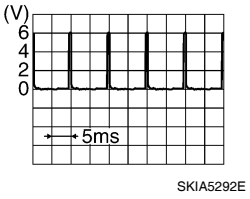
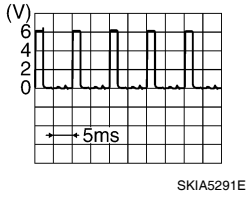
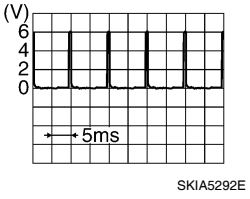
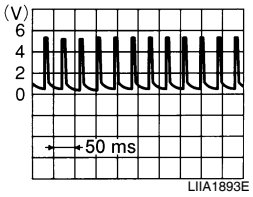
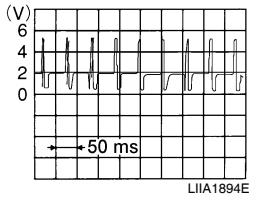
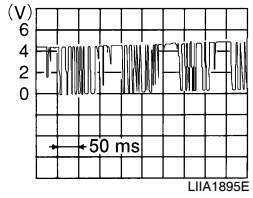
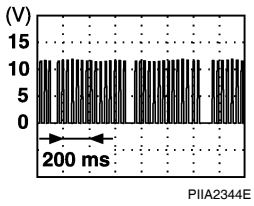
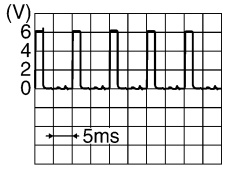
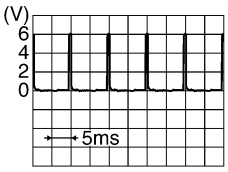
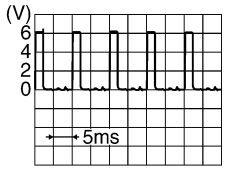
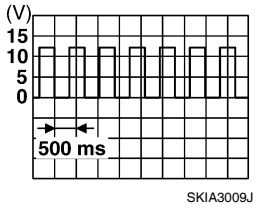
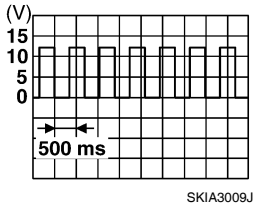
Physical Values

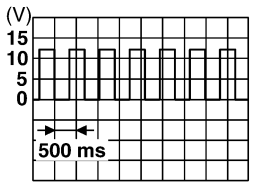
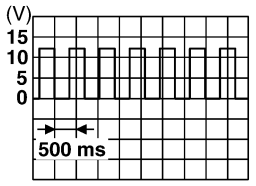
INFOID:0000000005484854

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	P	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	L	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	R	Combination switch input 1				
9	Y	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
11	G/B	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	LG	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
13	L	Rear door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	—	5V
18	BR	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	GR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	V	BUS	—	—	Ignition switch ON or power window timer operates	
23	G	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	LG	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	G	Hazard switch	Input	OFF	ON	0V
					OFF	5V
30[1]	G	Back door opener switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
30[2]	SB	Back door opener switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	O	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	LG	Combination switch output 1				
37[1]	B	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
37[2]	B	Key switch and ignition knob switch	Input	OFF	Intelligent Key inserted	Battery voltage
					Intelligent Key inserted	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	LG	Glass hatch ajar switch	Input	ON	Glass hatch open	0V
					Glass hatch closed	Battery voltage
43	P	Back door latch switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
44	O	Rear wiper auto stop switch	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	GR	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	P	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	L	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	O	Trailer turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
52	LG	Trailer turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
53	L	Back door latch actuator	Output	OFF	OFF	0
					ON	Battery voltage
55	W	Rear wiper output circuit 1	Output	ON	OFF	0
					ON	Battery voltage
56	R/Y	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	R/Y	Battery power supply	Input	OFF	—	Battery voltage
58	W	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	GR	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition			Reference value or waveform (Approx.)
				Ignition switch	Operation or condition		
60	LG	Turn signal (left)	Output	ON	Turn left ON		 SKIA3009J
61	G	Turn signal (right)	Output	ON	Turn right ON		 SKIA3009J
63	BR	Interior room/map lamp	Output	OFF	Any door switch	ON (open)	0V
						OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)		0V
					ON (lock)		Battery voltage
66	L	Front door lock actuator RH, rear door lock actuators LH/RH and glass hatch lock actuator (unlock)	Output	OFF	OFF (neutral)		0V
					ON (unlock)		Battery voltage
67	B	Ground	Input	ON	—		0V
68	O	Power window power supply (RAP)	Output	—	Ignition switch ON		Battery voltage
					Within 45 seconds after ignition switch OFF		Battery voltage
					More than 45 seconds after ignition switch OFF		0V
					When front door LH or RH is open or power window timer operates		0V
69	L	Power window power supply	Output	—	—		Battery voltage
70	W	Battery power supply	Input	OFF	—		Battery voltage

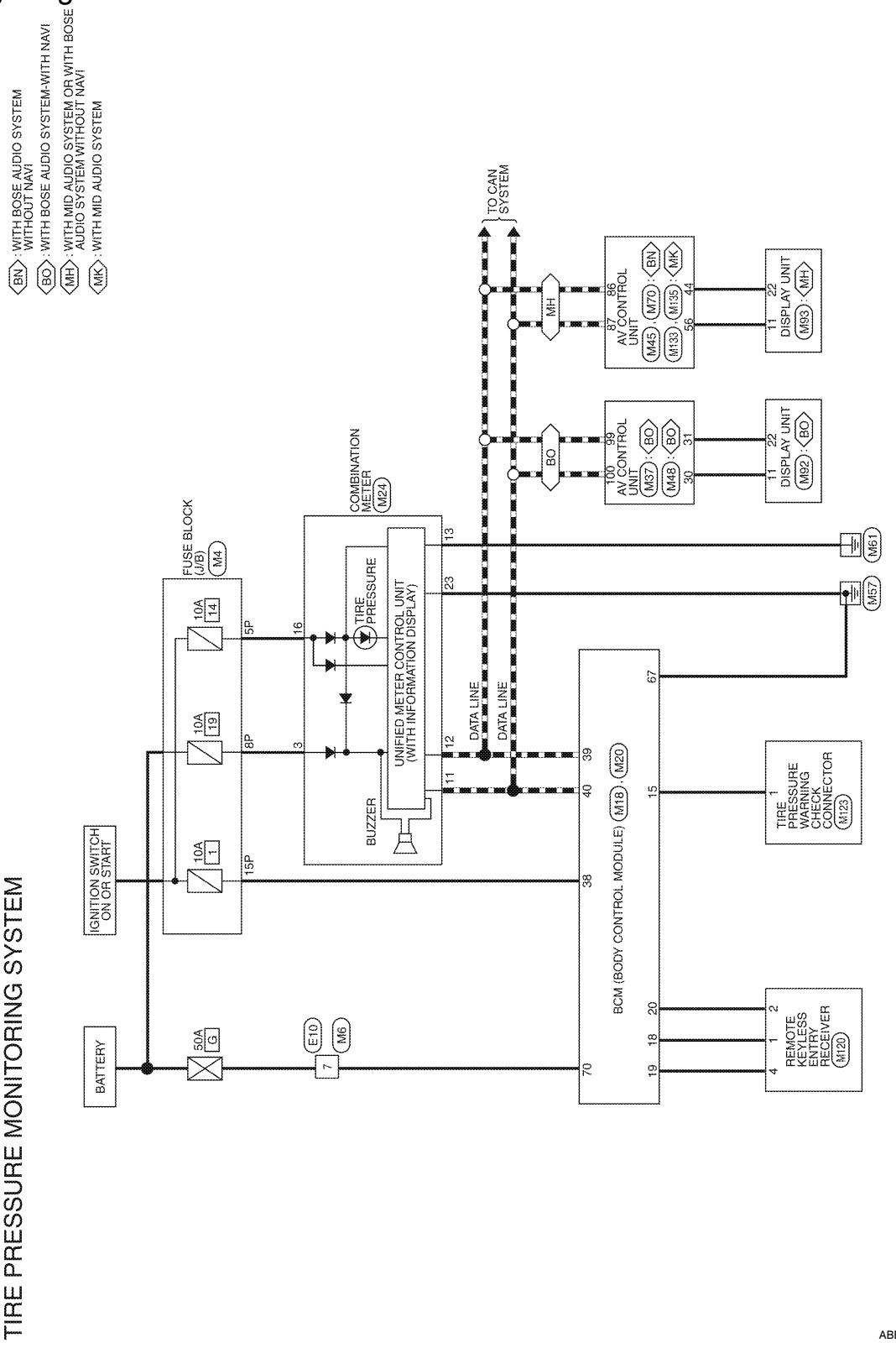
1: With remote keyless entry system

2: With Intelligent Key system

Wiring Diagram - TIRE PRESSURE MONITORING SYSTEM -

INFOID:0000000005255817

TIRE PRESSURE MONITORING SYSTEM



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TIRE PRESSURE MONITORING SYSTEM CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

7P	6P	5P	4P	3P	2P	1P
16P	15P	14P	13P	12P	11P	10P	9P	8P

Terminal No.	Color of Wire	Signal Name
5P	W/G	–
8P	R/Y	–
15P	W/R	–

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name
7	W	–

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
15	W	TPMS MODE TRIGGER SW
18	BR	KEYLESS AND AUTO LIGHT SENSOR GND
19	V	KEYLESS TUNER POWER SUPPLY OUTPUT
20	G	SIGNAL
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
11	P	CAN-L
12	L	CAN-H
13	GR	GROUND
16	W/G	RUN START
23	B	POWER GND

Connector No.	M37
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM WITH NAVI)
Connector Color	WHITE

H.S.

22	24	26	28	30	32
21	23	25	27	29	31

Terminal No.	Color of Wire	Signal Name
30	V	IT DISP
31	LG	DISP IT

ABEIA0076GB

Connector No.	M70
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM WITHOUT NAVI)
Connector Color	WHITE

H.S.

91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76
107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92

Terminal No.	Color of Wire	Signal Name
86	L	CAN-H
87	P	CAN-L

Connector No.	M48
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM-WITH NAVI)
Connector Color	WHITE

H.S.

69	71	73	75	77	79	81	83	85	87	89	91	93	95	97	99	101	103	105	107
68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106

Terminal No.	Color of Wire	Signal Name
99	L	CAN-H
100	P	CAN-L

Connector No.	M45
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM WITHOUT NAVI)
Connector Color	WHITE

H.S.

47	46	45	44	43	42	41	40	39	38	37	36
59	58	57	56	55	54	53	52	51	50	49	48

Terminal No.	Color of Wire	Signal Name
44	LG	DISP IT
56	V	IT DISP

Connector No.	M120
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Color	WHITE

H.S.

1	2	3	4

Terminal No.	Color of Wire	Signal Name
1	BR	GND
2	G	SIGNAL
3	–	–
4	V	PWR

Connector No.	M93
Connector Name	DISPLAY UNIT (WITHOUT NAVI)
Connector Color	WHITE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
11	V	IT DISP
22	LG	DISP IT

Connector No.	M92
Connector Name	DISPLAY UNIT (WITH NAVI)
Connector Color	WHITE

H.S.

12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
11	V	IT DISP
22	LG	DISP IT

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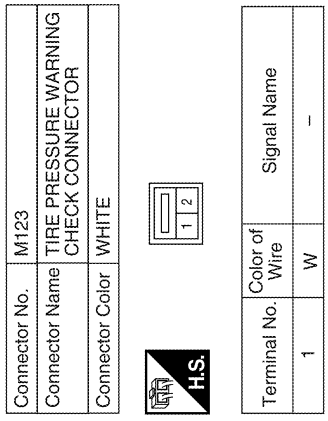
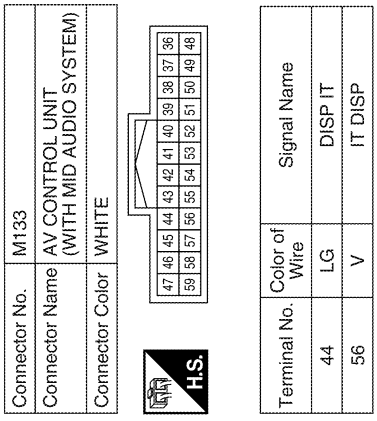


Connector No.	M123
Connector Name	TIRE PRESSURE WARNING CHECK CONNECTOR
Connector Color	WHITE

H.S.

1	2

Terminal No.	Color of Wire	Signal Name
1	W	–

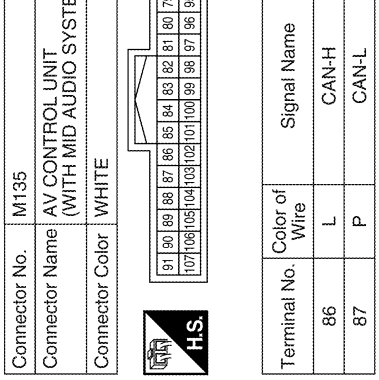


Connector No.	M133
Connector Name	AV CONTROL UNIT (WITH MID AUDIO SYSTEM)
Connector Color	WHITE

H.S.

47	46	45	44	43	42	41	40	39	38	37	36
59	58	57	56	55	54	53	52	51	50	49	48

Terminal No.	Color of Wire	Signal Name
44	LG	DISP IT
56	V	IT DISP

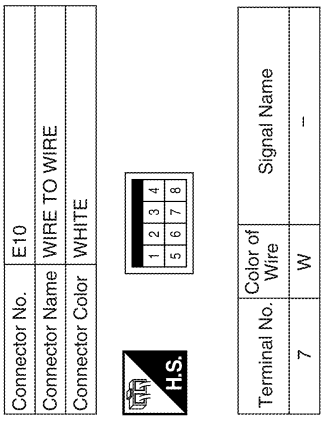


Connector No.	M135
Connector Name	AV CONTROL UNIT (WITH MID AUDIO SYSTEM)
Connector Color	WHITE

H.S.

91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76
107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92

Terminal No.	Color of Wire	Signal Name
86	L	CAN-H
87	P	CAN-L



Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4
5	6	7	8

Terminal No.	Color of Wire	Signal Name
7	W	–

ABEIA0078GB

Self-Diagnosis (With CONSULT-III)

INFOID:0000000005255818

FUNCTION

Self-Diagnostic Results Mode

Diagnostic item	Diagnostic item is detected when ···	Reference page
LOW - PRESSURE - FL [C1704] LOW - PRESSURE - FR [C1705] LOW - PRESSURE - RR [C1706] LOW - PRESSURE - RL [C1707]	Tire pressures dropped below specified value. Refer to WT-8, "System Description".	—
[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-14
[CHECKSUM- ERR] - FL [C1712] [CHECKSUM- ERR] - FR [C1713] [CHECKSUM- ERR] - RR [C1714] [CHECKSUM- ERR] - RL [C1715]	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-16
[PRESSDATA- ERR] - FL [C1716] [PRESSDATA- ERR] - FR [C1717] [PRESSDATA- ERR] - RR [C1718] [PRESSDATA- ERR] - RL [C1719]	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-18
[CODE- ERR] - FL [C1720] [CODE- ERR] - FR [C1721] [CODE- ERR] - RR [C1722] [CODE- ERR] - RL [C1723]	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-16
[BATT - VOLT - LOW] - FL [C1724] [BATT - VOLT - LOW] - FR [C1725] [BATT - VOLT - LOW] - RR [C1726] [BATT - VOLT - LOW] - RL [C1727]	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-16
VHCL_SPEED_SIG_ERR [C1729]	Vehicle speed signal is in error.	WT-19
IGN_CIRCUIT_OPEN [C1735]	Vehicle ignition signal is in error.	WT-20

NOTE:

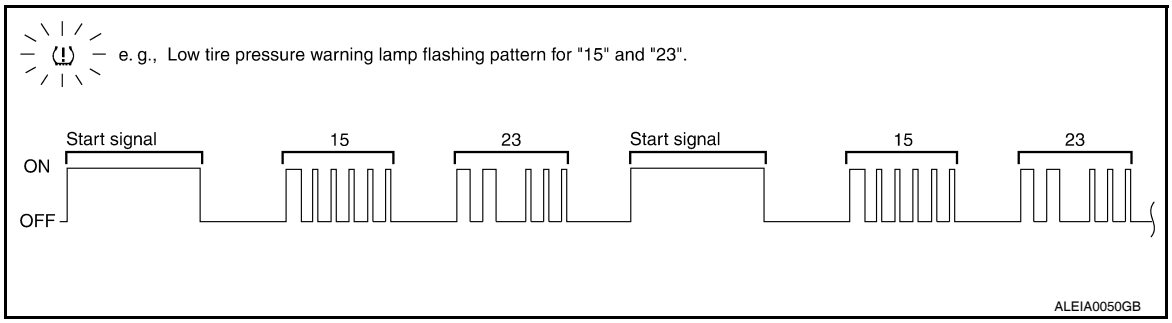
Before performing the self-diagnosis, be sure to register the ID or else the actual malfunction location may be different from that displayed on CONSULT-III.

Self-Diagnosis (Without CONSULT-III)

INFOID:0000000005255819

SELF-DIAGNOSTIC PROCEDURE (WITHOUT CONSULT-III)

1. Turn ignition switch ON.
2. Ground the tire pressure warning check connector to initiate self diagnosis.
3. Compare the flashing pattern with the flash code chart below.



NOTE:

The system is normal when the low tire pressure warning lamp flashes 5 times and continues repeating. Self-diagnosis results are erased automatically by turning the ignition switch “OFF”.

Flash Code	Malfunction part	Reference page
15 16 17 18	Tire pressure dropped below specified value. Refer to WT-8, "System Description".	—
21 22 23 24	Transmitter no data (FL) Transmitter no data (FR) Transmitter no data (RR) Transmitter no data (RL)	WT-14
31 32 33 34	Transmitter checksum error (FL) Transmitter checksum error (FR) Transmitter checksum error (RR) Transmitter checksum error (RL)	WT-16
35 36 37 38	Transmitter pressure data error (FL) Transmitter pressure data error (FR) Transmitter pressure data error (RR) Transmitter pressure data error (RL)	WT-18
41 42 43 44	Transmitter function code error (FL) Transmitter function code error (FR) Transmitter function code error (RR) Transmitter function code error (RL)	WT-16
45 46 47 48	Transmitter battery voltage low (FL) Transmitter battery voltage low (FR) Transmitter battery voltage low (RR) Transmitter battery voltage low (RL)	WT-16
52	Vehicle speed signal	WT-19
54	Vehicle ignition signal	WT-20

SYMPTOM DIAGNOSIS

TPMS

Symptom Table

INFOID:0000000005255820

Symptom	Reference
Low tire pressure warning lamp does not come on when ignition switch is turned ON.	WT-37
Low tire pressure warning lamp stays on when ignition switch is turned ON.	WT-38
Low tire pressure warning lamp flashes when ignition switch is turned ON.	WT-39
Hazard warning lamps flash when ignition switch is turned ON.	WT-40
Tire pressure information in display unit does not exist.	WT-40
ID registration cannot be completed.	WT-42

LOW TIRE PRESSURE WARNING LAMP DOES NOT TURN ON

Low Tire Pressure Warning Lamp Does Not Come On When Ignition Switch Is Turned On

INFOID:0000000005255821

DIAGNOSTIC PROCEDURE

1.SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-III, check display contents of BCM in SELF-DIAGNOSIS.

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

YES >> Malfunction in CAN communication system.
NO >> GO TO 2

2.CHECK COMBINATION METER

Check combination meter operation. Refer to MWI-24, "CONSULT-III Function (METER/M&A)".

Is the inspection result normal?

YES >> GO TO 3
NO >> Replace combination meter. Refer to MWI-96, "Removal and Installation".

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-59, "Removal and Installation".
NO >> Check combination meter operation.

LOW TIRE PRESSURE WARNING LAMP STAYS ON

Low Tire Pressure Warning Lamp Stays On When Ignition Switch Is Turned On

INFOID:0000000005255822

DIAGNOSTIC PROCEDURE

1.BCM CONNECTORS

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

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace damaged parts.

2.BCM POWER SUPPLY AND GROUND CIRCUITS

Check BCM power supply and ground circuits. Refer to BCS-34, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-59, "Removal and Installation".
NO >> Repair BCM circuits.

LOW TIRE PRESSURE WARNING LAMP BLINKS

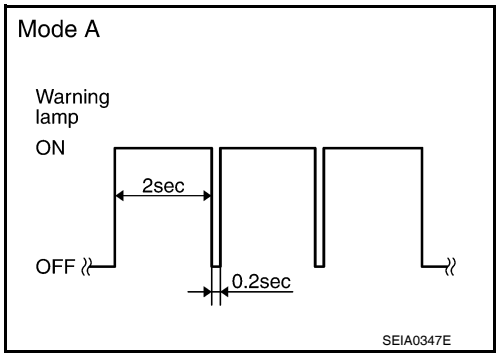
Low Tire Pressure Warning Lamp Flashes When Ignition Switch Is Turned On

INFOID:0000000005255823

Regarding Wiring Diagram information, refer to WT-30, "Wiring Diagram - TIRE PRESSURE MONITORING SYSTEM -".

NOTE:
If low tire pressure 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-5, "Transmitter Wake Up Operation".



DIAGNOSTIC PROCEDURE

1.CHECK BCM CONNECTORS

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

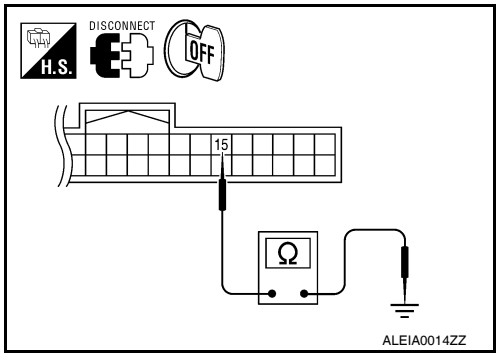
Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace damaged parts.

2.CHECK TIRE PRESSURE WARNING CHECK CONNECTOR CIRCUIT

Check continuity between BCM harness connector M18 terminal 15 and ground.

Continuity should not exist.



Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-59, "Removal and Installation".
NO >> Repair circuit for short to ground.

HAZARD WARNING LAMPS FLASH

Hazard Warning Lamps Flash When Ignition Switch Is Turned On

INFOID:0000000005255824

DIAGNOSTIC PROCEDURE

1.CHECK BCM GROUND CIRCUIT

Check BCM ground circuit. Refer to BCS-34, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-59, "Removal and Installation".
NO >> Repair BCM ground circuit.

"TIRE PRESSURE" INFORMATION IN DISPLAY UNIT DOES NOT EXIST

"TIRE PRESSURE" Information in Display Unit Does Not Exist

INFOID:0000000005255825

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.
NO >> GO TO 2.

2.CHECK DISPLAY UNIT

Perform AV unit self-diagnosis. Refer to AV-341, "AV CONTROL UNIT : CONSULT-III Function".

Is the inspection result normal?

OK >> Replace BCM. Refer to BCS-59, "Removal and Installation".
NG >> Repair or replace malfunctioning parts.

ID REGISTRATION CANNOT BE COMPLETED

ID Registration Cannot Be Completed

INFOID:0000000005255826

DIAGNOSTIC PROCEDURE

1.PERFORM ID REGISTRATION OF ALL TRANSMITTERS

Carry out ID registration of all transmitters. Refer to WT-6, "ID Registration Procedure".

Can ID registration of all transmitters be completed?

YES >> Inspection End.
NO >> GO TO WT-14, "Diagnosis Procedure".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000005519021

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

WARNING:

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000005255828

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

Precaution for work

INFOID:0000000005255829

- After removing and installing the opening/closing parts, be sure to carry out fitting adjustments to check their operation.
- Check the lubrication level, damage, and wear of each part. If necessary, grease or replace it.

PREPARATION

PREPARATION

Special Service Tool

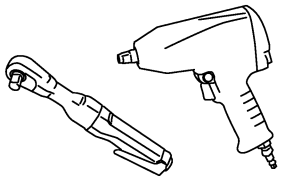
INFOID:0000000005255830

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	• Transmitter wake up operation • ID registration procedure

Commercial Service Tool

INFOID:0000000005519022

Tool name	Description
Power tool  PBIC0190E	Removing wheel nuts

SYMPTOM DIAGNOSIS

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000005255831

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

Reference page			WT-47	WT-48	WT-53	WT-49	—	—	WT-53	DLN-346, "NVH Troubleshooting Chart" (R180A), DLN-381, "NVH Troubleshooting Chart" (M205)	DLN-414, "NVH Troubleshooting Chart" (R200), DLN-452, "NVH Troubleshooting Chart" (R230)	FAX-5, "NVH Troubleshooting Chart" (FAX) FSU-5, "NVH Troubleshooting Chart" (FSU)	RAX-5, "NVH Troubleshooting Chart" (RAX) RSU-5, "NVH Troubleshooting Chart" (RSU)	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	BR-6, "NVH Troubleshooting Chart"	ST-12, "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	FRONT FINAL DRIVE	REAR FINAL DRIVE	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

ON-VEHICLE MAINTENANCE

WHEEL

Inspection

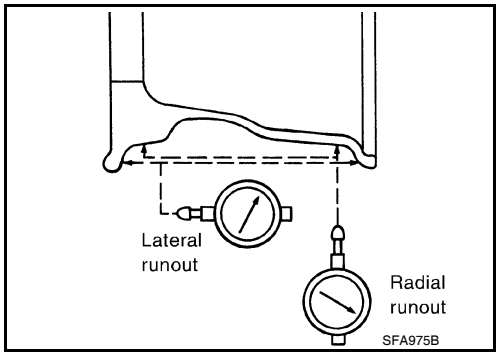
INFOID:0000000005255832

1. Remove wheel and tire using power tool.
2. Check tires for wear and improper inflation.
3. 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. Refer to WT-53, "Road Wheel".

4. Check front wheel bearings for looseness.
5. Check front suspension for looseness.
6. Install wheel and tire. Refer to WT-49, "Rotation".



ON-VEHICLE REPAIR

WHEEL AND TIRE ASSEMBLY

Balancing Wheels

INFOID:0000000005255833

WHEEL BALANCE REMOVAL

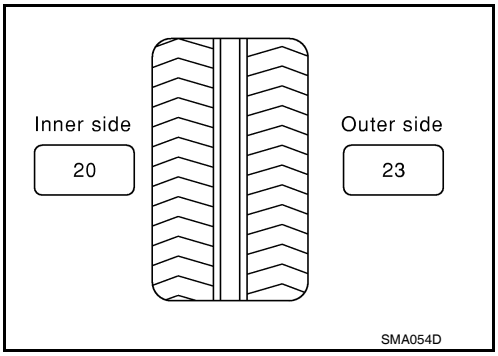
1. Remove wheel and tire using power tool.
2. Using releasing agent, remove double-faced adhesive tape from the wheel.
   CAUTION:
   - **Be careful not to scratch the wheel during removal.**
   - **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the wheel.**

WHEEL BALANCE INSTALLATION AND ADJUSTMENT

- 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 imbalance values are shown on the wheel balancer indicator, multiply outer imbalance 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 imbalance 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)

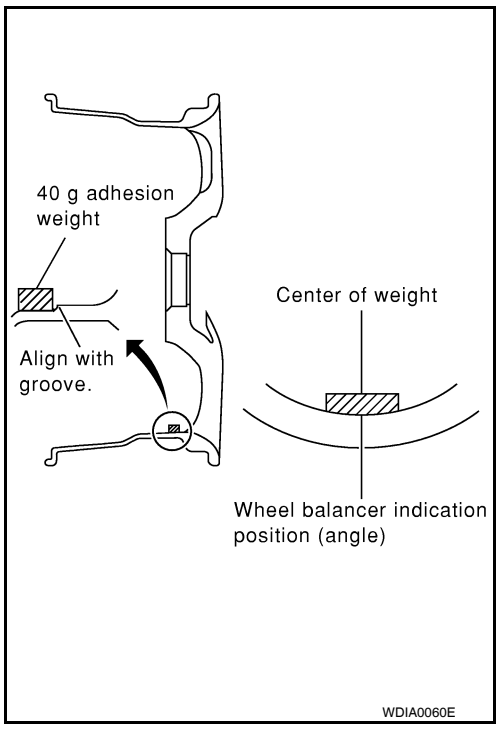


a. Install balance weight in the position shown.

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 weights.**



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.

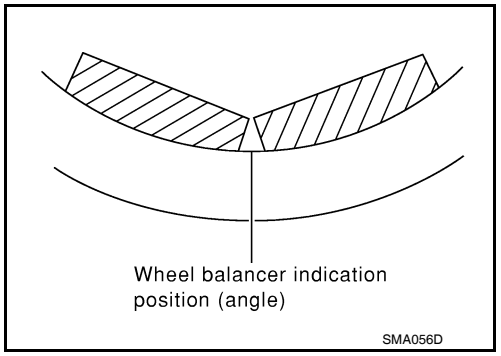
3. Start wheel balancer again.

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 imbalance values are 5 g (0.18 oz) each or below.
   - If either residual imbalance value exceeds 5 g (0.18 oz), repeat installation procedures.



Wheel Balance (Maximum Allowable Imbalance)

Maximum allowable imbalance	Dynamic (at rim flange)	5 g (0.18 oz) (one side)
	Static	10 g (0.35 oz)

Rotation

INFOID:0000000005255834

NOTE:

Follow the maintenance schedule for tire rotation service intervals. Refer to WT-49, "Rotation".

1. Remove wheels and tires.

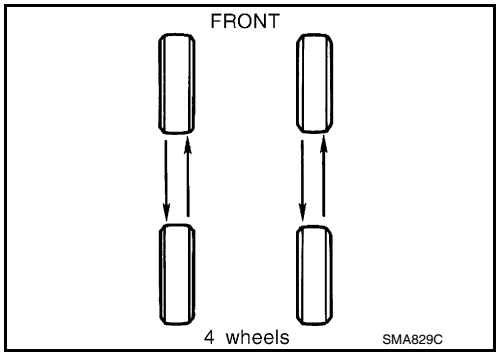
2. Rotate wheels and tires on each side from front to back as shown. Do not include the spare wheel and tire when rotating the wheels and tires.

Wheel nut : 133 N·m (14 kg-m, 98 ft-lb)

CAUTION:

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

3. Adjust the tire pressure to specification. Refer to WT-53, "Tire".



4. After the wheel and tire rotation, retighten the wheel nuts after the vehicle has been driven for 1,000 km (600 miles), and also after any wheel and tire has been installed, such as after repairing a flat tire.

REMOVAL AND INSTALLATION

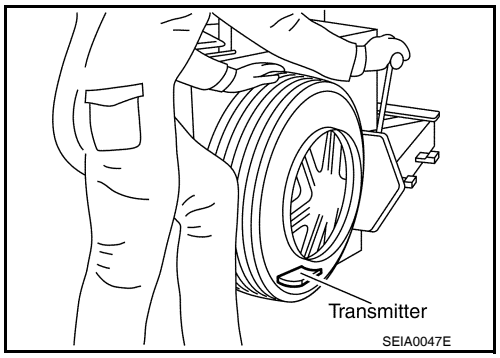
REMOVAL AND INSTALLATION

Transmitter (Pressure Sensor)

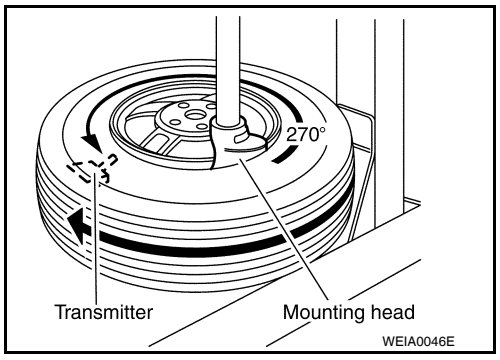
INFOID:0000000005255835

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.

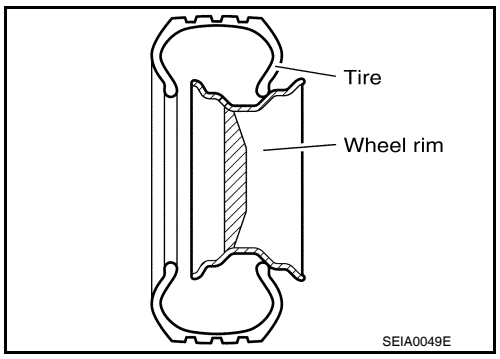


4. Turn tire so that valve hole is at bottom, and gently bounce the tire to ensure transmitter is near valve hole. Carefully lift tire onto turntable and position valve hole (and transmitter) 270 degrees from mounting/dismounting head.
5. Lubricate tire well, and remove top side of tire. Reach inside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



INSTALLATION

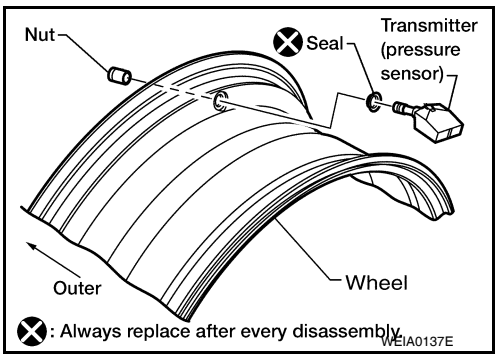
1. Place first side of tire onto rim.



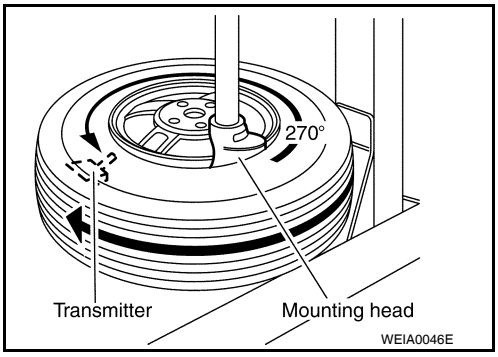
2. Apply suitable silicone lubricant to new transmitter seal then install seal on transmitter.
   NOTE:
   Always replace the seal after every disassembly.

3. Mount transmitter on rim and tighten nut at a maximum speed of 10 rpm.
NOTE:
Make sure no burrs exist in the valve stem hole of the wheel.

Transmitter nut tightening torque : 7.7 N·m (0.79 kg-m, 68 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-48, "Balancing Wheels".
7. Install wheel and tire assembly in appropriate wheel position on vehicle. Refer to WT-49, "Rotation".
NOTE:
If replacing the transmitter, then transmitter wake up operation must be performed. Refer to WT-5, "Transmitter Wake Up Operation".



8. Adjust neutral position of steering angle sensor. Refer to BRC-8, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Road Wheel

INFOID:0000000005255836

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:0000000005255837

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

Tire size	Air pressure	
	Conventional tire	Spare tire
P245/75R16	240 (2.4, 35)	240 (2.4, 35)
P265/65R17	240 (2.4, 35)	240 (2.4, 35)
P265/60R18	240 (2.4, 35)	240 (2.4, 35)