SECTION WT
ROAD WHEELS & TIRES

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000007519449

DETAILED FLOW

1.COLLECT THE INFORMATION FROM THE CUSTOMER

It is also important to clarify customer concerns before starting the inspection. Reproduce the symptom, and understand it fully. Interview the customer about the concerns carefully. In some cases, it is necessary to check the symptoms by driving the vehicle with the customer.

CAUTION:

Customers are not professionals. Never assume“maybe the customer means...” or “maybe the customer mentioned this symptom.

>> GO TO 2.

2.BASIC INSPECTION

1. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
2. Check the tire pressure for all wheels and adjust to the specified value. Refer to WT-66, "Tire Air Pressure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Inspect or repair the tires or wheels.

3.CHECK LOW TIRE PRESSURE WARNING LAMP

Check low tire pressure warning lamp display.

Does not low tire pressure warning lamp turn OFF?

YES >> GO TO 4.
NO >> INSPECTION END

4.CRUISE TEST

Start the engine and drive the vehicle.

>> GO TO 5.

5.PERFORM SELF-DIAGNOSIS

With CONSULT

Perform self-diagnosis.

Is any DTC detected?

YES >> Record or print DTC and freeze frame data (FFD). GO TO 7.
NO >> GO TO 6.

6.CHECK SYMPTOM

Perform trouble diagnosis for the applicable symptom. Refer to WT-47, "Symptom Table".

Is the cause of the malfunction detected?

YES >> GO TO 8.
NO >> GO TO 10.

7.CIRCUIT DIAGNOSIS

Inspect the malfunctioning system indicated by the DTC code that is detected during self-diagnosis. Refer to WT-45, "DTC Index".

>> GO TO 8.

8.REPAIR WORK

Repair or replace the malfunctioning part.

>> GO TO 9.

9.PERFORM SELF-DIAGNOSIS

1. Select “SELF-DIAG RESULTS” in “AIR PRESSURE MONITOR”.
2. Touch “ERASE” on CONSULT screen to erase memory of the low tire pressure warning control unit.
3. Drive the vehicle.
4. Perform “AIR PRESSURE MONITOR” of self-diagnosis.

Is any DTC detected?

YES >> GO TO 7.
NO >> GO TO 10.

10.FINAL CHECK

1. Perform a cruise test.
2. Check that the low tire pressure warning lamp turn OFF.

Dose the tire pressure warning lamp turn OFF?

YES >> INSPECTION END
NO >> GO TO 2.

TIRE PRESSURE SENSOR WAKE UP OPERATION

Description

INFOID:0000000007519450

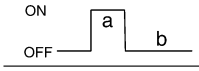
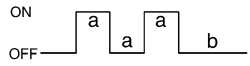
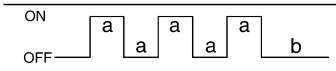
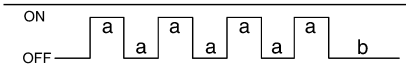
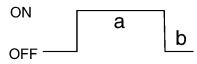
This procedure must be done after replacement of a tire pressure sensor.

Work Procedure

INFOID:0000000007519451

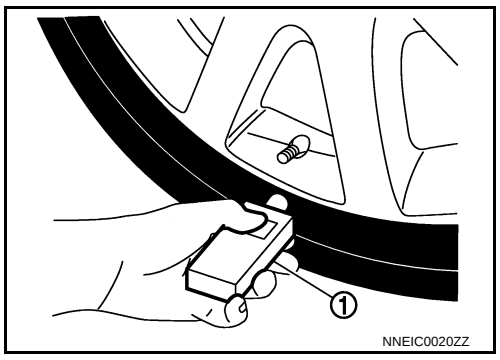
1. TIRE PRESSURE SENSOR WAKE-UP PROCEDURE

1. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
   NOTE:
   The position of an inactive tire pressure sensor can be identified by checking the blinking timing of the low tire pressure warning lamp.

Low tire pressure warning lamp blinking timing	Activation tire position
 a : 0.3 sec. b : 1.0 sec.	Front LH
 a : 0.3 sec. b : 1.0 sec.	Front RH
 a : 0.3 sec. b : 1.0 sec.	Rear RH
 a : 0.3 sec. b : 1.0 sec.	Rear LH
 a : 2 sec. b : 0.2 sec.	All tires

JPEIC0089GB

2. Contact the tire pressure sensor activation tool (J-45295) (1) to the side of the tire at the location to the tire pressure sensor.
3. Press and hold the tire pressure sensor activation tool button while pushing the tool to the tire surface. (approximately for 5 seconds)
   CAUTION:
   Perform the wake-up procedure starting from the vehicle front left wheel, then repeat the procedure in the order of the front right wheel, rear right wheel, and rear left wheel.
4. Check that the turn signal lamps blink twice when the tire pressure sensor wake-up procedure for all wheels is completed.
5. Check that the low tire pressure warning lamp turns OFF, after the tire pressure sensor wake-up procedure is completed for all wheels and turns OFF.



Is the tire pressure sensor wake-up procedure completed?

YES >> Perform the tire pressure sensor ID registration procedure. Refer to WT-6, "Work Procedure".
NO >> Perform trouble diagnosis for the tire pressure sensor. Refer to WT-15, "Diagnosis Procedure".

TIRE PRESSURE SENSOR ID REGISTRATION

Description

INFOID:0000000007519452

This procedure must be done after replacement of a tire pressure sensor, low tire pressure warning control unit, or rotation of wheels.

Work Procedure

INFOID:0000000007519453

1. TIRE PRESSURE SENSOR ID REGISTRATION PROCEDURE

CAUTION:

To perform ID registration, observe the following points:

- **Never register ID in a place where radio waves are interfered (e.g. radio tower).**
- **Never register ID in a place close to vehicles including TPMS.**

With CONSULT

1. Display the “WORK SUPPORT” screen and select “ID REGIST”.

Is the tire pressure sensor activation tool (J-45295) used for the tire pressure sensor ID registration procedure?

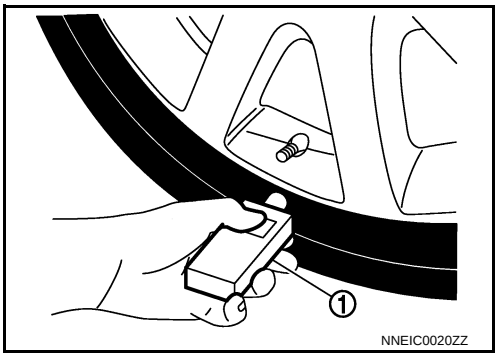
YES >> GO TO 2.
NO >> GO TO 3.

2. TIRE PRESSURE SENSOR ID REGISTRATION PROCEDURE (WITH THE TIRE PRESSURE SENSOR ACTIVATION TOOL)

1. Turn the ignition switch ON.
2. Select the start button on the “ID REGIST” screen.
3. Contact the tire pressure sensor activation tool (J-45295) (1) to the side of the tire at the location to the tire pressure sensor.
4. Press and hold the tire pressure sensor activation tool button while pushing the tool to the tire surface. (approximately for 5 seconds)

   CAUTION:

   Perform the ID registration procedure starting from the vehicle front left wheel, then repeat the procedure in the order of the front right wheel, rear right wheel, and rear left wheel.



5. When ID registration is completed, check the following pattern at each wheel.

Sequence	ID registration position	Hazard warning lamp	CONSULT
1	Front left wheel	2 blinks	“Red” ↓ “Green”
2	Front right wheel		
3	Rear right wheel		
4	Rear left wheel		

6. After the ID registration procedure for all wheels is completed, press “End” to end ID registration, and check that ID registration for all wheels is completed.

Is the check result normal?

YES >> ID registration END.
NO >> Refer to WT-54, "Diagnosis Procedure".

3. TIRE PRESSURE SENSOR ID REGISTRATION PROCEDURE (WITHOUT THE TIRE PRESSURE SENSOR ACTIVATION TOOL)

1. Adjust the tire pressure for all wheels to match the list below.

Tire position	Tire pressure kPa (kg/cm^2, psi)
Front LH	240 (2.4, 34)
Front RH	220 (2.2, 31)
Rear RH	200 (2.0, 29)
Rear LH	180 (1.8, 26)

2. Drive the vehicle at a speed at more than 40 km/h (25 MPH) for 3 minutes or more, then perform the tire pressure sensor ID registration procedure.
3. After ID registration for all wheels is completed, press “End” to end ID registration.

ID registration position	CONSULT
Front LH	“Red” ↓ “Green”
Front RH	
Rear RH	
Rear LH	

4. Adjust the tire pressures for all wheels to the specified value. Refer to WT-66, "Tire Air Pressure".

Is ID registrations for all wheels completed?

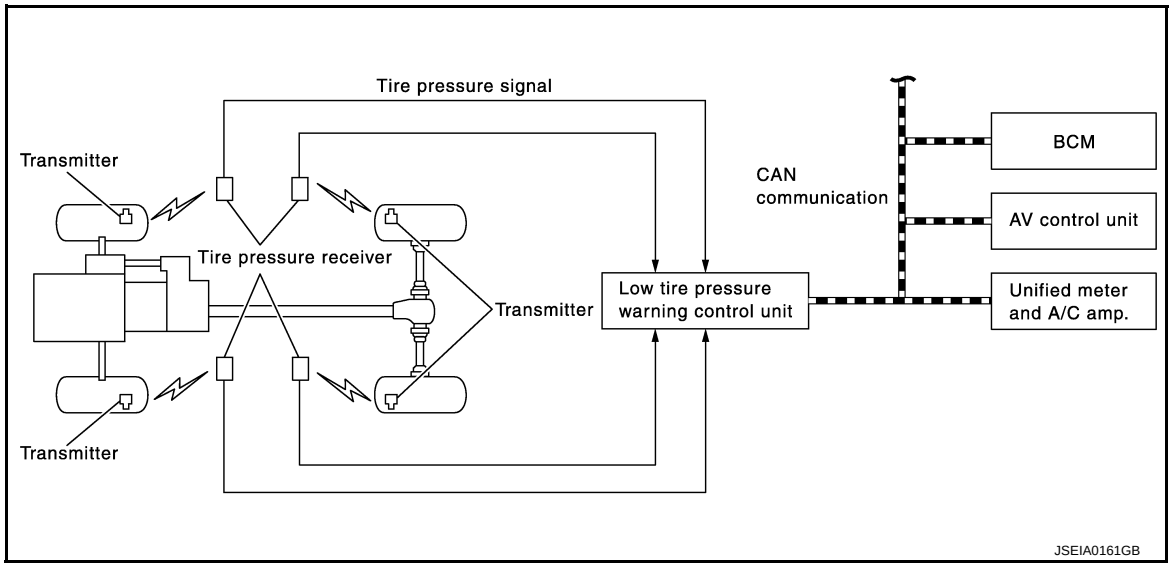
YES >> ID registration END.
NO >> Performs trouble diagnosis of the Tire Pressure Monitoring System (TPMS). Refer to WT-54, "Diagnosis Procedure".

SYSTEM DESCRIPTION

SYSTEM

System Diagram

INFOID:0000000007519454



System Description

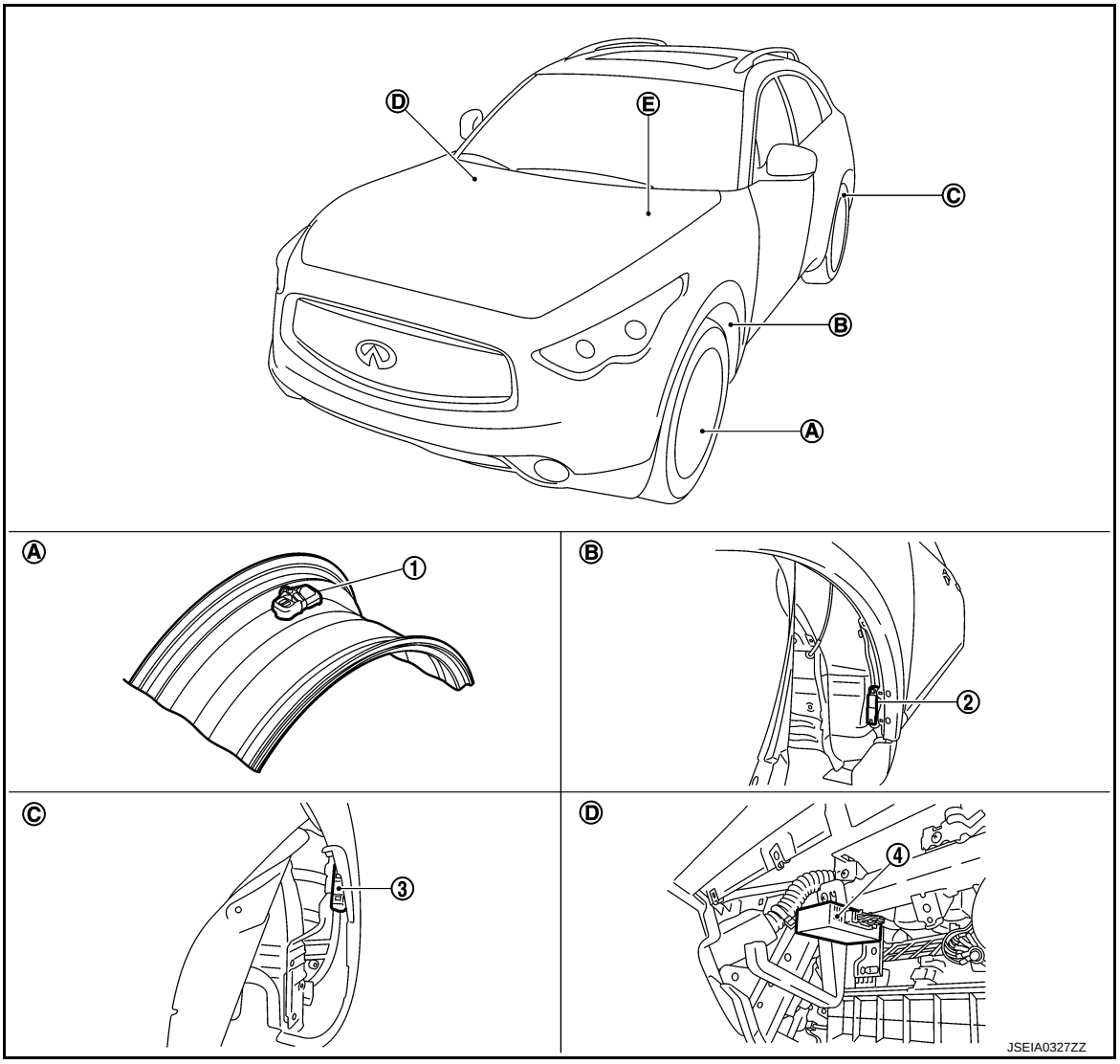
INFOID:0000000007519455

- If the tire pressure is less than the specified value, the low tire pressure warning lamp illuminates that the tire pressure is less than the specified value.
- The signal from each control unit is communicated via CAN communication.

Control unit	Signal status
Low tire pressure warning control unit	The low tire pressure warning lamp signal is transmitted to the BCM via CAN communication.
BCM	The low tire pressure warning lamp signal is transmitted to the unified meter and A/C amp. via CAN communication.
AV control unit	The tire pressure signal is received from the low tire pressure warning control unit via CAN communication.
ABS actuator and electric unit (control unit)	The vehicle speed signal (ABS) is received from the low tire pressure warning control unit via CAN communication.

Component Parts Location

INFOID:0000000007519456



1. Tire pressure sensor
2. Front tire pressure receiver
3. Rear tire pressure receiver
4. Low tire pressure warning control unit
A. Wheel
B. Fender protector (rear side)
C. Inside rear wheel house protector
D. Glove box assembly removed
E. Low tire pressure warning lamp, information display (In combination meter)

Component Description

INFOID:0000000007519457

Component parts	Function
Tire pressure sensor	WT-15, "Description".
Tire pressure receiver	WT-29, "Description".
Low tire pressure warning control unit	WT-31, "Description".
Unified meter and A/C amp.	Transmits the vehicle speed signal via CAN communication to BCM.
	Receives the following signals via CAN communication for BCM. • Low tire pressure warning lamp signal • TPMS malfunction warning lamp signal

Component parts	Function
Low tire pressure warning lamp	WT-40, "Description".
Information display	WT-10, "Information Display".

Information Display

INFOID:0000000007519458

The vehicle information display is shown when a low tire pressure warning lamp signal is transmitted from BCM to Unified meter and A/C amp. via CAN communication.

Condition	Vehicle information display
Ignition switch OFF	Non-indication
Low tire pressure	Indication

DIAGNOSIS SYSTEM (LOW TIRE PRESSURE WARNING CONTROL UNIT)

CONSULT Function

INFOID:0000000007519459

FUNCTION

The diagnosis functions (main functions) include the following: “WORK SUPPORT”, “SELF DIAGNOSTIC RESULT”, “DATA MONITOR”, “ACTIVE TEST”, and “ECU IDENTIFICATION”.

Mode	FUNCTION DESCRIPTION
Work Support	In this mode, it is possible to make quick and accurate adjustments by following the instructions on the CONSULT display.
Self Diagnostic Result	Receives self-diagnosis results from the low tire pressure warning control unit, and indicates DTCs and the number of malfunctions.
Data Monitor	Receives input/output signals from the low tire pressure warning control unit and indicates and stores them to facilitate locating the causes of malfunctions.
Active Test	Sends command to the low tire pressure warning control unit to change output signals and check operation of output system.
ECU identification	Displays the part number of the low tire pressure warning control unit.

WORK SUPPORT

Refer to WT-6, "Work Procedure".

SELF-DIAGNOSTIC RESULT

Operation procedure

Before starting self-diagnosis, start the engine and drive the vehicle at faster than 40 km/h (25 MPH) for longer than 3 minutes.

Display Item List

Refer to WT-45, "DTC Index".

DATA MONITOR

Display Item List

Monitor item (Unit)	Remarks
VHCL SPEED SE (km/h) or (MPH)	Vehicle speed
AIR PRESS FL (kPa), (kg/cm^2) or (Psi)	Air pressure of tires
AIR PRESS FR (kPa), (kg/cm^2) or (Psi)	
AIR PRESS RR (kPa), (kg/cm^2) or (Psi)	
AIR PRESS RL (kPa), (kg/cm^2) or (Psi)	
ID REGST FL1	ID is registered: Done ID is not registered: Yet
ID REGST FR1	
ID REGST RR1	
ID REGST RL1	
WARNING LAMP	Low tire pressure warning lamp ON: On Low tire pressure warning lamp OFF: Off
BUZZER	Combination meter buzzer ON: On Combination meter buzzer OFF: Off

ACTIVE TEST

After completing the work below, perform an active test.

- Before performing self-diagnosis, register the tire pressure sensor IDs.
- Erase the self-diagnosis result history.

Test item list

Test item	Condition	Details
BUZZER	Vehicle stopped	Check that the buzzer operates correctly.
WARN LAMP	The system is normal	Perform a test to check that the low tire pressure warning lamp illuminates correctly.

ECU IDENTIFICATION

Low tire pressure warning control unit part number can be read.

DTC/CIRCUIT DIAGNOSIS

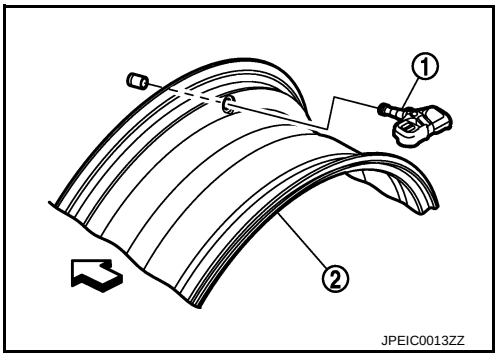
C1704, C1705, C1706, C1707 LOW TIRE PRESSURE

Description

INFOID:0000000007519460

The tire pressure sensor (1) is installed at the position of the air valve on the road wheel (2). It measures the tire pressure and transmits the tire pressure information by radio waves.

⇦ :Outside



DTC Logic

INFOID:0000000007519461

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1704	LOW PRESSURE FL	Front LH wheel pressure is or Less 182 kPa (1.86 kg/cm^2, 26.4 psi) or less	Low tire pressure
C1705	LOW PRESSURE FR	Front RH wheel pressure is or less 182 kPa (1.86 kg/cm^2, 26.4 psi) or less	
C1706	LOW PRESSURE RR	Rear RH wheel pressure is or less 182 kPa (1.86 kg/cm^2, 26.4 psi) or less	
C1707	LOW PRESSURE RL	Rear LH wheel pressure is or less 182 kPa (1.86 kg/cm^2, 26.4 psi) or less	

DTC REPRODUCTION PROCEDURE

1. DTC REPRODUCTION PROCEDURE

With CONSULT

1. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
2. Check the tire pressure for all wheels and adjust to the specified value. Refer to WT-66, "Tire Air Pressure".
3. Perform “AIR PRESSURE MONITOR” of self-diagnosis.

Is DTC “C1704”, “C1705”, “C1706”, or “C1707” detected?

YES >> Perform trouble diagnosis. Refer to WT-13, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519462

1. CHECK TIRE PRESSURE

Check the air pressure of all wheels. Refer to WT-66, "Tire Air Pressure".

Is the inspection result normal?

YES >> Replace any malfunctioning tire pressure sensors.
NO >> After adjusting the air pressure, GO TO 2.

2. CHECK TIRE PRESSURE SIGNAL

With CONSULT

1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Within 5 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR” and display the tire pressure for all wheels.
3. Check that the tire pressures match the standard value.

Monitor item	Condition	Displayed value
AIR PRESS FL	Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.	Air pressure of tires
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace error-detected parts.

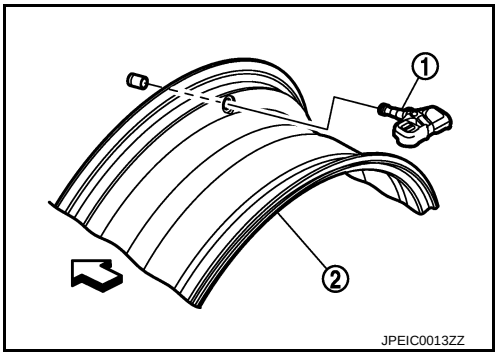
C1708, C1709, C1710, C1711 TIRE PRESSURE SENSOR

Description

INFOID:0000000007519463

The tire pressure sensor (1) is installed at the position of the air valve on the road wheel (2). It measures the tire pressure and transmits the tire pressure information by radio waves.

⇦ :Outside



DTC Logic

INFOID:0000000007519464

DTC logic

DTC	Display Item	Malfunction detected condition	Possible causes
C1708	[NO DATA] FL	Tire pressure data signal from the front LH wheel tire pressure sensor cannot be detected.	• Harness or connector connection malfunction (Tire pressure receiver, low tire pressure warning control unit) • Tire pressure sensor ID registration incomplete • Tire pressure sensor error • Low tire pressure sensor battery voltage
C1709	[NO DATA] FR	Tire pressure data signal from the front RH wheel tire pressure sensor cannot be detected.	
C1710	[NO DATA] RR	Tire pressure data signal from the rear RH wheel tire pressure sensor cannot be detected.	
C1711	[NO DATA] RL	Tire pressure data signal from the rear LH wheel tire pressure sensor cannot be detected.	

DTC REPRODUCTION PROCEDURE

1. DTC REPRODUCTION PROCEDURE

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1708”, “C1709”, “C1710” or “C1711” detected?

YES >> Perform trouble diagnosis. Refer to WT-15, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519465

1. CHECK TIRE PRESSURE SIGNAL

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Within 5 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR”.
3. Read the values that are displayed for “AIR PRESS FL”, “AIR PRESS FR”, “AIR PRESS RR”, and “AIR PRESS RL”.

Monitor item	condition	Displayed value
AIR PRESS FL	Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.	Air pressure of tires
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is a tire pressure of 0 kPa (psi) displayed for all wheels?

YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK RECEIVER CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the low tire pressure warning control unit harness connector and tire pressure receiver harness connector.
3. Check the continuity between the harness connector terminals of the low tire pressure warning control unit and tire pressure receiver.

CHECK RECEIVER POWER CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	10	E53 (Front LH)	1	Existed
	9	E19 (Front RH)		
	8	B43 (Rear LH)		
	7	B251 (Rear RH)		

CHECK RECEIVER SIGNAL CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	6	E53 (Front LH)	3	Existed
	5	E19 (Front RH)		
	4	B43 (Rear LH)		
	3	B251 (Rear RH)		

CHECK RECEIVER SIGNAL (SENSITIVITY) CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	22	E53 (Front LH)	2	Existed
	21	E19 (Front RH)		
	20	B43 (Rear LH)		
	19	B251 (Rear RH)		

CHECK RECEIVER GROUND CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	26	E53 (Front LH)	4	Existed
	25	E19 (Front RH)		
	24	B43 (Rear LH)		
	23	B251 (Rear RH)		

4. Check the continuity between the low tire pressure warning control unit harness connector and the ground.

CHECK RECEIVER POWER CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	10	Ground	Not existed
	9		
	8		
	7		

CHECK RECEIVER SIGNAL CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	6	Ground	Not existed
	5		
	4		
	3		

CHECK RECEIVER SIGNAL (SENSITIVITY) CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	22	Ground	Not existed
	21		
	20		
	19		

CHECK RECEIVER GROUND CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	26	Ground	Not existed
	25		
	24		
	23		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace error-detected parts.

3.CHECK TIRE PRESSURE RECEIVER POWER SUPPLY CIRCUIT

1. Connect the low tire pressure warning control unit harness connector.
2. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
3. Check the voltage between the tire pressure receiver harness connector and ground.

Tire pressure receiver		—	Voltage
Connector	Terminal		
E53 (Front LH)	1	Ground	9 - 16 V
E19 (Front RH)			
B43 (Rear LH)			
B251 (Rear RH)			

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the tire pressure receiver.

4.REGISTER THE TIRE PRESSURE SENSOR ID

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

Is tire pressure sensor ID registration completed?

YES >> GO TO 5.
NO >> Replace the tire pressure sensor. Refer to WT-63, "Removal and Installation".

5.CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT

With CONSULT

1. Drive for several minutes at a speed of 40 km/h (25 MPH) or more, then stop the vehicle.

2. Within 15 minutes, select “AIR PRESSURE MONITOR” of “DATA MONITOR” and display the tire pressure for all wheels.
3. Check that the tire pressure is the specified value.

Monitor item	Condition	Displayed value
AIR PRESS FL	Drive for several minutes at a speed of 40 km/h (25 MPH) or more, then stop the vehicle.	Air pressure of tire pressure
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the low tire pressure warning control unit. Refer to WT-62, "Removal and Installation".

Special Repair Requirement

INFOID:0000000007519466

1.CHECK TIRE PRESSURE

Check the tire pressure of all wheels. Refer to WT-66, "Tire Air Pressure".

Does the tire pressure match the specified value?

YES >> GO TO 2.
NO >> Check the road wheels and tires. Adjust the tire pressures to the specified values.

2.REGISTER TIRE PRESSURE SENSOR ID

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

>> END

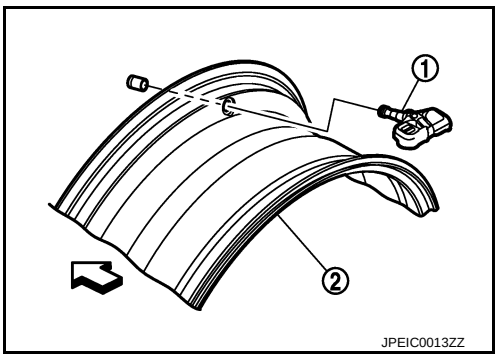
C1716, C1717, C1718, C1719 TIRE PRESSURE SENSOR

Description

INFOID:0000000007519467

The tire pressure sensor (1) is installed at the position of the air valve on the road wheel (2). It measures the tire pressure and transmits the tire pressure information by radio waves.

⇦ :Outside



DTC Logic

INFOID:0000000007519468

DTC logic

DTC	Display Item	Malfunction detected condition	Possible causes
C1716	[PRESSDATA ERR] FL	The tire pressure data from the front LH wheel is malfunction.	• Tire Pressure Sensor ID registration incomplete • Tire Pressure Sensor malfunction
C1717	[PRESSDATA ERR] FR	The tire pressure data from the front RH wheel is malfunction.	
C1718	[PRESSDATA ERR] RR	The tire pressure data from the rear RH wheel is malfunction.	
C1719	[PRESSDATA ERR] RL	The tire pressure data from the rear LH wheel is malfunction.	

DTC REPRODUCTION PROCEDURE

1. DTC REPRODUCTION PROCEDURE

With CONSULT
1. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
2. Check the tire pressure for all wheels and adjust to the specified value. Refer to WT-66, "Tire Air Pressure".
3. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1716”, “C1717”, “C1718”, or “C1719” detected?

YES >> Perform trouble diagnosis. Refer to WT-19, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519469

1. CHECK TIRE PRESSURE SIGNAL

With CONSULT
1. Check and adjust the tire pressure for all wheels. Refer to WT-66, "Tire Air Pressure".
2. Perform tire pressure sensor ID registration for all wheels. Refer to WT-6, "Work Procedure".
3. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
4. Stop the vehicle and within 15 minutes select “DATA MONITOR” of “AIR PRESSURE MONITOR” and read the tire pressure for all wheels.
5. Check that “DATA MONITOR” displays a tire pressure of 438.60 kPa (4.47 kg/cm^2, 63.60 psi).

Is the inspection result normal?

YES >> Replace the malfunctioning tire pressure sensor.

NO >> GO TO 2.

2.CHECK TPMS

Check the tire pressure sensors. Refer to WT-20, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Perform trouble diagnosis of the low tire pressure warning control unit. Refer to WT-31, "Diagnosis Procedure".

Component Inspection

INFOID:0000000007519470

1.CHECK TIRE PRESSURE SENSORS

With CONSULT

1. Adjust the tire pressures to the specified value for all wheels. Refer to WT-66, "Tire Air Pressure".
2. Perform tire pressure sensor ID registration for all wheels. Refer to WT-6, "Work Procedure".
3. Drive for several minutes at a speed of 40 km/h (25 MPH) or more, then stop the vehicle.
4. Within 15 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR” to display the tire pressure for all wheels.
5. Check that “DATA MONITOR” displays a tire pressure of 438.60 kPa (4.47 kg/cm^2, 63.60 psi).

Monitor item	condition	Displayed value
AIR PRESS FL	Drive for several minutes at a sped of 40 km/h (25 MPH) or more, then stop the vehicle.	Air pressure of tire pressure
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the inspection result normal?

YES >> Replace the malfunctioning tire pressure sensor.
NO >> INSPECTION END

Special Repair Requirement

INFOID:0000000007519471

1.CHECK TIRE PRESSURE

Check the tire pressure of all wheels. Refer to WT-66, "Tire Air Pressure".

Does the tire pressure match the specified value?

YES >> GO TO 2.
NO >> Check the road wheels and tires. Adjust the tire pressures to the specified values.

2.REGISTER TIRE PRESSURE SENSOR ID

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

>> END

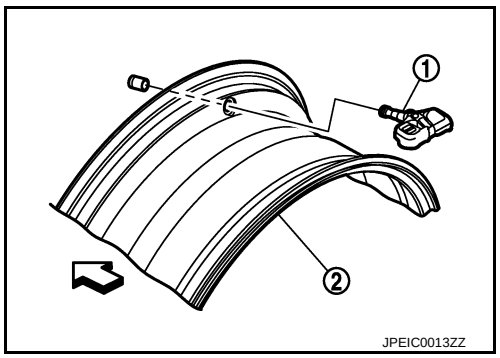
C1720, C1721, C1722, C1723 TIRE PRESSURE SENSOR

Description

INFOID:0000000007519472

The tire pressure sensor (1) is installed at the position of the air valve on the road wheel (2). It measures the tire pressure and transmits the tire pressure information by radio waves.

⇦ :Outside



DTC Logic

INFOID:0000000007519473

DTC logic

DTC	Display Item	Malfunction detected condition	Possible causes
C1720	[CODE ERR] FL	Checksum data from front LH tire pressure sensor is malfunctioning.	• Tire pressure receiver malfunction • Tire pressure sensor error • Low tire pressure warning control unit malfunction
C1721	[CODE ERR] FR	Checksum data from front RH tire pressure sensor is malfunctioning.	
C1722	[CODE ERR] RR	Checksum data from rear RH tire pressure sensor is malfunctioning.	
C1723	[CODE ERR] RL	Checksum data from rear LH tire pressure sensor is malfunctioning.	

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1720”, “C1721”, “C1722” or “C1723” detected?

YES >> Perform trouble diagnosis. Refer to WT-21, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519474

1.CHECK TIRE PRESSURE SIGNAL

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Within 5 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR”.
3. Read the values that are displayed for “AIR PRESS FL”, “AIR PRESS FR”, “AIR PRESS RR”, and “AIR PRESS RL”.

Display Item	Condition	Displayed value
AIR PRESS FL	Drive for 3 minutes at a speed of 40 km/h (25MPH) or more, then drive normally for 10 minutes.	Air pressure of tire pressure
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the tire pressure of 0 kPa displayed for all wheels?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK HARNESS BETWEEN LOW TIRE PRESSURE WARNING CONTROL UNIT AND TIRE PRESSURE RECEIVER

1. Turn the ignition switch OFF.
2. Disconnect low tire pressure warning control unit harness connector and tire pressure receiver harness connector.
3. Check the continuity between low tire pressure warning control unit harness connector and tire pressure receiver harness connector.

CHECK RECEIVER POWER CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	10	E53 (Front LH)	1	Existed
	9	E19 (Front RH)		
	8	B43 (Rear LH)		
	7	B251 (Rear RH)		

CHECK RECEIVER SIGNAL CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	6	E53 (Front LH)	3	Existed
	5	E19 (Front RH)		
	4	B43 (Rear LH)		
	3	B251 (Rear RH)		

CHECK RECEIVER SIGNAL (SENSITIVITY) CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	22	E53 (Front LH)	2	Existed
	21	E19 (Front RH)		
	20	B43 (Rear LH)		
	19	B251 (Rear RH)		

CHECK RECEIVER GROUND CIRCUIT

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	26	E53 (Front LH)	4	Existed
	25	E19 (Front RH)		
	24	B43 (Rear LH)		
	23	B251 (Rear RH)		

4. Check the continuity between low tire pressure warning control unit harness connector and ground.

CHECK RECEIVER POWER CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	10	Ground	Not existed
	9		
	8		
	7		

CHECK RECEIVER SIGNAL CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	6	Ground	Not existed
	5		
	4		
	3		

CHECK RECEIVER SIGNAL (SENSITIVITY) CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	22	Ground	Not existed
	21		
	20		
	19		

CHECK RECEIVER GROUND CIRCUIT

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	26	Ground	Not existed
	25		
	24		
	23		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace error-detected parts.

3.CHECK TIRE PRESSURE RECEIVER

Check the tire pressure receivers. Refer to WT-25, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace the tire pressure receiver.

4.CHECK TIRE PRESSURE MONITORING CONTROL SYSTEM

Check the Tire Pressure Monitoring System (TPMS). Refer to WT-31, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace the low tire pressure warning control unit.

5.CHECK TIRE PRESSURE SENSORS

1. Drive for several minutes at a speed of 40 km/h (25 MPH) or more, then stop the vehicle.
2. Within 15 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR” and display the tire pressure for all wheels.
3. Check that the tire pressures is the specified value.

Display Item	Condition	Displayed value
AIR PRESS FL	Drive for several minutes at a speed of 40 km/h (25 MPH) or more, then stop the vehicle.	Air pressure of tire pressure
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the tire pressure sensor. Refer to WT-63, "Removal and Installation".

Special Repair Requirement

INFOID:0000000007519475

1.CHECK TIRE PRESSURE

Check the tire pressure of all wheels. Refer to WT-66, "Tire Air Pressure".

Does the tire pressure match the specified value?

YES >> GO TO 2.
NO >> Check the road wheels and tires. Adjust the tire pressures to the specified values.

2.REGISTER TIRE PRESSURE SENSOR ID

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

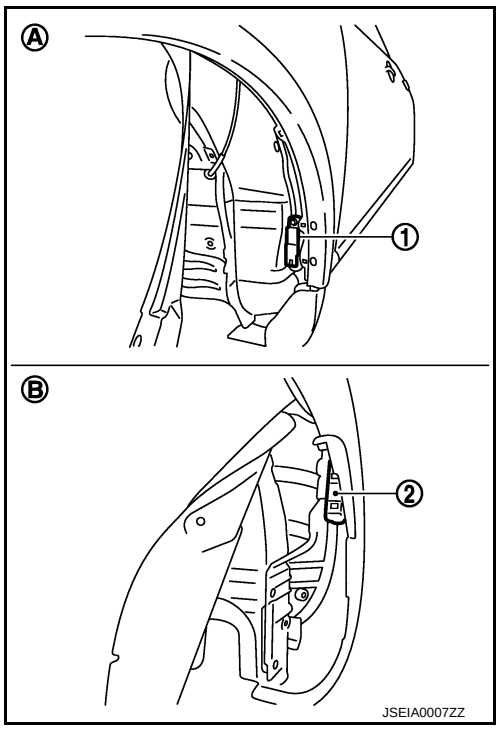
>> END

C1728 RECEIVER ID

Description

INFOID:0000000007519476

The front (A) tire pressure receiver (1) and rear (B) tire pressure receiver (2) receive the tire pressure signal by radio waves from the tire pressure sensor at each wheel, and transmit the tire pressure signal to the low tire pressure warning control unit.



DTC Logic

INFOID:0000000007519477

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1728	RECEIVER ID NO REG	Receiver ID registration cannot be performed.	• Tire pressure receiver malfunction • Low tire pressure warning control unit malfunction

DTC REPRODUCTION PROCEDURE

1. DTC REPRODUCTION PROCEDURE

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1728” detected?

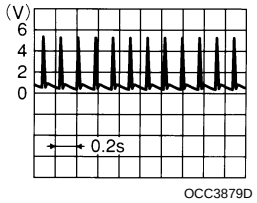
YES >> Perform trouble diagnosis. Refer to WT-25, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

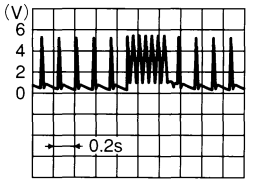
INFOID:0000000007519478

1. CHECK RECEIVER INPUT SIGNAL

1. Turn the ignition switch ON.
   CAUTION:
   Never start engine.
2. Use an oscilloscope and check the input signal waveform between the low tire pressure warning control unit harness connector terminals and the ground. Refer to WT-42, "Reference Value".

Connector	Terminal	—	Standard	
M96	3	Ground	Stand by status (Approx. 4.5 V)	
	4			
	5			
	6			

OCC3879D

Connector	Terminal	—	Standard	
M96	3	Ground	When signal is received (Approx. 4.5 V)	
	4			
	5			
	6			

OCC3880D

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK TIRE PRESSURE RECEIVER POWER SUPPLY CIRCUIT

1. Disconnect the tire pressure receiver harness connector.
2. Check the voltage between the tire pressure receiver harness connector and ground.

Tire pressure receiver		—	Voltage
Connector	Terminal		
E53 (Front LH)	1	Ground	7 - 16 V
E19 (Front RH)			
B43 (Rear LH)			
B251 (Rear RH)			

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning harness or connector.

3.CHECK TIRE PRESSURE RECEIVER GROUND CIRCUIT

1. Disconnect the low tire pressure warning control unit harness connector.
2. Check the continuity between the low tire pressure warning control unit harness connector and tire pressure receiver harness connector.

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	26	E53 (Front LH)	4	Existed
	25	E19 (Front RH)		
	24	B43 (Rear LH)		
	23	B251 (Rear RH)		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning harness or connector.

4.CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT CIRCUIT

Check the low tire pressure warning control unit circuit. Refer to WT-31, "Diagnosis Procedure".

Is the low tire pressure warning control unit circuit normal?

YES >> Replace the tire pressure receiver.
NO >> Repair or replace error-detected parts.

C1729 VEHICLE SPEED SIG ERR

Description

INFOID:0000000007519479

Uses CAN communications from the ABS actuator and electric unit (control unit) to receive the vehicle speed signal, and activates the Tire Pressure Monitoring System (TPMS) when the vehicle speed is 40 km/h (25MPH) or more.

DTC Logic

INFOID:0000000007519480

DTC logic

DTC	Display Item	Malfunction detected condition	Possible causes
C1729	VHCL SPEED SIG ERR	Speed signal is not detected.	• CAN communication malfunction • Low tire pressure warning control unit malfunction • ABS actuator and electric unit (control unit) malfunction

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT
1. Drive for several minutes at a speed of 40 km/h (25MPH) or more, then stop the vehicle.
2. Perform “AIR PRESSURE MONITOR self-diagnosis”.

Is DTC “C1729” detected?

YES >> Perform trouble diagnosis. Refer to WT-28, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519481

1.PERFORM ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS

With CONSULT
Perform “ABS” self-diagnosis.

Is DTC detected?

YES >> Check malfunctioning circuit.
NO >> GO TO 2.

2.PERFORM THE SELF-DIAGNOSIS

With CONSULT
Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1729” detected?

YES >> Replace the low tire pressure warning control unit.
NO >> GO TO 3.

3.CHECK INFORMATION

With CONSULT
Select “DATA MONITOR” of “AIR PRESSURE MONITOR” and check the input/output values. Refer to WT-42, "Reference Value".

Is the inspection result normal?

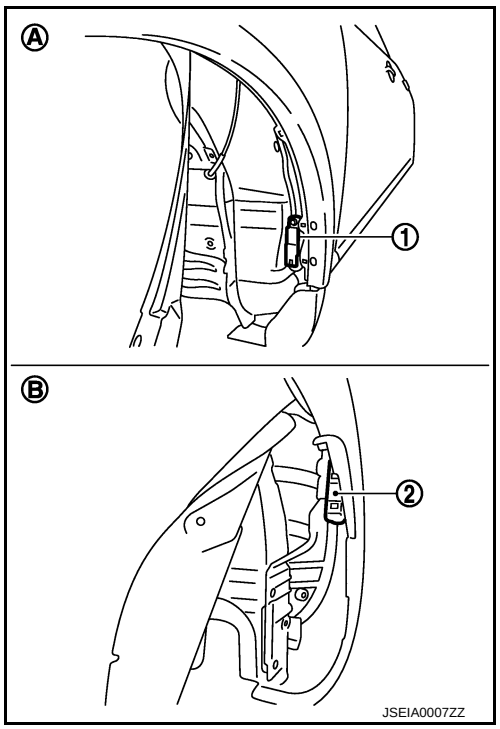
YES >> Check pin terminal and connection of each harness connector for malfunctioning conditions.
NO >> Replace the low tire pressure warning control unit.

C1750, C1751, C1752, C1753 RECEIVER

Description

INFOID:0000000007519482

The front (A) tire pressure receiver (1) and rear (B) tire pressure receiver (2) receive the tire pressure signal by radio waves from the tire pressure sensor at each wheel, and transmit the tire pressure signal to the low tire pressure warning control unit.



DTC Logic

INFOID:0000000007519483

DTC DETECTION LOGIC

DTC	Display Item	Malfunction detected condition	Possible causes
C1750	[RECEIVER ERR] FL	The front LH tire pressure receiver dose not receive a signal.	Tire pressure receiver malfunction
C1751	[RECEIVER ERR] FR	The front RH tire pressure receiver dose not receive a signal.	
C1752	[RECEIVER ERR] RR	The rear RH tire pressure receiver dose not receive a signal.	
C1753	[RECEIVER ERR] RL	The rear LH tire pressure receiver dose not receive a signal.	

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1750”, “C1751”, “C1752”, or “C1753” detected?

YES >> Perform trouble diagnosis. Refer to WT-29, "Diagnosis Procedure".
NO >> INSPECTION END

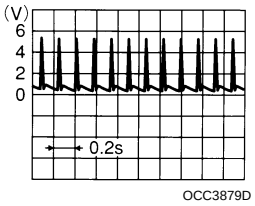
Diagnosis Procedure

INFOID:0000000007519484

1.CHECK TIRE PRESSURE RECEIVER INPUT SIGNAL

1. Turn the ignition switch ON.
   CAUTION:
   Never start engine.

2. Use an oscilloscope and check the input signal waveform between the low tire pressure warning control unit harness connector terminals and ground. Refer to WT-42, "Reference Value".

Connector	Terminal	—	Standard	
M96	3	Ground	Stand by status (Approx. 4.5 V)	
	4			
	5			
	6			

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK TIRE PRESSURE RECEIVER POWER SUPPLY CIRCUIT

1. Disconnect the tire pressure receiver harness connector.
2. Check the voltage between the tire pressure receiver harness connector and ground.

Connector	Terminal	—	Voltage
E53 (Front LH)	1	Ground	7 - 16 V
E19 (Front RH)			
B43 (Rear LH)			
B251 (Rear RH)			

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace error-detected part.

3.CHECK TIRE PRESSURE RECEIVER GROUND CIRCUIT

1. Disconnect the low tire pressure warning control unit harness connector and tire pressure receiver harness connector.
2. Check the continuity between the low tire pressure warning control unit harness connector and tire pressure receiver harness connector.

Low tire pressure warning control unit		Tire pressure receiver		Continuity
M96	26	E53 (Front LH)	4	Existed
	25	E19 (Front RH)		
	24	B43 (Rear LH)		
	23	B251 (Rear RH)		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace error-detected part.

4.CHECK FOR CHANGE TO THE TIRE PRESSURE RECEIVER INSTALLATION POSITION. (EXAMPLE: FRONT LH RECEIVER OK/NG JUDGMENT)

With CONSULT

1. Exchange the front LH tire pressure receiver with the front RH tire pressure receivers.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1751” detected?

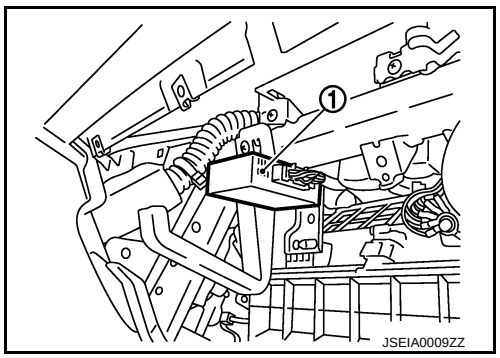
YES >> Replace the front RH tire pressure receiver.
NO >> Perform trouble diagnosis of the low tire pressure warning control unit. Refer to WT-31, "Diagnosis Procedure".

C1754 LOW TIRE PRESSURE WARNING CONTROL UNIT

Description

INFOID:0000000007519485

- After the low tire pressure warning control unit (1) receives the tire pressure signal from the tire pressure receiver, it controls the operation of the low tire pressure warning lamp and buzzer.
- Performs self-diagnosis of the Tire Pressure Monitoring System (TPMS).



DTC Logic

INFOID:0000000007519486

DTC logic

DTC	Display Item	Malfunction detected condition	Possible causes
C1754	CONT UNIT (EEPROM)	Tire Pressure Monitoring System (TPMS) malfunction in the low tire pressure warning control unit	Low tire pressure warning control unit malfunction

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT
1. Drive for several minutes at a speed of 40 km/h (25 MPH) or more, then stop the vehicle.
2. Stop the vehicle and perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1754” detected?

YES >> Perform trouble diagnosis. Refer to WT-31, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519487

1.CHECK POWER VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the low tire pressure warning control unit harness connector.
3. Check the voltage between the harness connectors of the low tire pressure warning control unit and the ground.

Low tire pressure warning control unit		—	Voltage
Connector	Terminal		
M96	15	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO >> If the results of any of the following check items are not normal, repair or replace the malfunctioning part.
- 10A fuse [No. 3 in fuse block (J/B)]
- Harness open circuit or short circuit between the ignition switch and harness connector terminal 15 of the low tire pressure warning control unit.
- Check battery voltage.

2.CHECK GROUND CIRCUIT

Check the continuity between the low tire pressure warning control unit harness connector and ground.

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	32	Ground	Existed

Are the check results normal?

YES >> GO TO 3.
NO >> If an open circuit or other damage is detected, malfunctioning part.

3. CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT AND TIRE PRESSURE RECEIVER CIRCUIT

1. Check the continuity between the low tire pressure warning control unit harness connector and tire pressure receiver harness connector.

Low tire pressure warning control unit		Tire pressure receiver		Continuity
Connector	Terminal	Connector	Terminal	
M96	6	E53 (Front LH)	3	Existed
	22		2	
	10		1	
	26		4	
	5	E19 (Front RH)	3	
	21		2	
	9		1	
	25		4	
	4	B43 (Rear LH)	3	
	20		2	
	8		1	
	24		4	
	3	B251 (Rear RH)	3	
	19		2	
	7		1	
	23		4	

2. Check the continuity between the low tire pressure warning control unit harness connector and ground.

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	6	Ground	Not existed
	22		
	10		
	26		
	5		
	21		
	9		
	25		
	4		
	20		
	8		
	24		
	3		
	19		
	7		
	23		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace error-detected parts.

4. PERFORM THE SELF-DIAGNOSIS

With CONSULT
1. Perform tire pressure sensor ID registration for all wheels. Refer to WT-6, "Work Procedure".
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1754” detected?

YES >> Replace the low tire pressure warning control unit.
NO >> Check for looseness or damage at the harness connector pins of the low tire pressure warning control unit. Repair or replace if necessary.

Special Repair Requirement

INFOID:0000000007519488

1. CHECK TIRE PRESSURE

Check the tire pressure of all wheels. Refer to WT-66, "Tire Air Pressure".

Does the tire pressure match the specified value?

YES >> GO TO 2.
NO >> Check the road wheels and tires. Adjust the tire pressures to the specified values.

2. REGISTER TIRE PRESSURE SENSOR ID

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

>> END

C1755, C1756, C1757, C1758 POOR RECEIVING CONDITIONS

Description

INFOID:0000000007519489

A DTC is detected if the radio signal output from the tire pressure sensor is interrupted by external electromagnetic interference for 10 minutes or more.

DTC Logic

INFOID:0000000007519490

DTC logic

DTC	Display Item	Malfunction detected condition	Possible causes
C1755	PR RECEIV COND FL	The data signal from the front LH wheel tire pressure sensor cannot be detected due to external electromagnetic interference. (DTC C1708 is displayed at the same time.)	External electromagnetic interference
C1756	PR RECEIV COND FR	The data signal from the front RH wheel tire pressure sensor cannot be detected due to external electromagnetic interference. (DTC C1709 is displayed at the same time.)	
C1757	PR RECEIV COND RR	The data signal from the rear RH wheel tire pressure sensor cannot be detected due to external electromagnetic interference. (DTC C1710 is displayed at the same time.)	
C1758	PR RECEIV COND RL	The data signal from the rear LH wheel tire pressure sensor cannot be detected due to external electromagnetic interference. (DTC C1711 is displayed at the same time.)	

CAUTION:

If DTC C1755, C1756, C1757, or C1758 (low communication performance) is detected along with, C1708, C1709, C1710, or C1711 (no tire pressure sensor data) first diagnose C1755, C1756, C1757, or C1758 (low communications performance).

DTC REPRODUCTION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT

1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “C1755”, “C1756”, “C1757”, or “C1758 ” detected?

YES >> Perform trouble diagnosis. Refer to WT-34, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519491

1.REGISTER THE TIRE PRESSURE SENSOR ID

Perform tire pressure sensor ID registration for all wheels. Refer to WT-6, "Work Procedure".

Is ID registration for all wheels completed?

YES >> GO TO 2.
NO >> Change the work location and perform ID registration again, then perform trouble diagnosis. Refer to WT-54, "Diagnosis Procedure".

2.CHECK TIRE PRESSURE SIGNAL

With CONSULT

1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Within 5 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR”.
3. Display the following: “AIR PRESS FL”, “AIR PRESS FR”, “AIR PRESS RR”, and “AIR PRESS RL”.
4. Check that the displayed tire pressures is the specified value.

Monitor item	Condition	Displayed value
AIR PRESS FL	Drive for 3 minutes at a speed of 40 km/h (25MPH) or more, then drive normally for 10 minutes.	Air pressure of tire pressure
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Change the work location, then GO TO 1.

3.CHECK THE DIAGNOSIS RESULTS

With CONSULT
1. Erase the self-diagnosis memory of the low tire pressure warning control unit.
2. Turn ignition switch OFF, and wait for 10 seconds or more.
3. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Are DTC “C1755”, “C1756”, “C1757”, or “C1758” and “C1708”, “C1709”, “C1710”, or “C1711” detected?

YES >> Change the work location, then GO TO 1.
NO >> GO TO 4.

4.CHECK TIRE PRESSURE SIGNAL

With CONSULT
1. Drive for 3 minutes at a speed of 40 km/h (25 MPH) or more, then drive normally for 10 minutes.
2. Within 5 minutes, select “DATA MONITOR” of “AIR PRESSURE MONITOR”.
3. Display the following: “AIR PRESS FL”, “AIR PRESS FR”, “AIR PRESS RR”, and “AIR PRESS RL”.
4. Check that the tire pressures is the specified value.

Monitor item	Condition	Displayed value
AIR PRESS FL	Drive for 3 minutes at a speed of 40 km/h (25MPH) or more, then drive normally for 10 minutes.	Air pressure of tire pressure
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Change the work location, then GO TO 1.

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000007519492

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

DTC Logic

INFOID:0000000007519493

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
U1000	CAN COMM CIRCUIT	Low tire pressure warning control unit is not communicating CAN communication signal for 2 seconds or more.	• CAN communication malfunction • Malfunction of low tire pressure warning control unit

DTC CONFIRMATION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT
1. Turn the ignition switch OFF to ON.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “U1000” detected?

YES >> Proceed to trouble diagnosis procedure. Refer to WT-36, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519494

1.PERFORM SELF-DIAGNOSIS

With CONSULT
Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “U1000” detected?

YES >> CAN specification chart. Refer to LAN-30, "CAN System Specification Chart".
NO >> INSPECTION END

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000007519495

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

DTC Logic

INFOID:0000000007519496

DTC DETECTION LOGIC

DTC	Display item	Malfunction detected condition	Possible cause
U1010	CONTROL UNIT (CAN)	Detecting error during the initial diagnosis of CAN controller of low tire pressure warning control unit.	Malfunction of low tire pressure warning control unit

DTC CONFIRMATION PROCEDURE

1.DTC REPRODUCTION PROCEDURE

With CONSULT
1. Turn the ignition switch OFF to ON.
2. Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “U1010” detected?

YES >> Proceed to trouble diagnosis procedure. Refer to WT-37, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000007519497

1.CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT

Check low tire pressure warning control unit harness connector for disconnection or deformation.

Is the inspection result normal?

YES >> Replace low tire pressure warning control unit. Refer to WT-62, "Exploded View".
NO >> Repair or replace error-detected parts.

POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:0000000007519498

Supply power to the low tire pressure warning control unit.

Diagnosis Procedure

INFOID:0000000007519499

1.CHECK FUSE/FUSIBLE LINK

Check for fusing of the fuse and fusible link at the low tire pressure warning control unit.
- Check the 10A fuse [No. 3 inside the fuse block (J/B)]

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace error-detected parts.

2.POWER SUPPLY SYSTEM CHECK

1. Turn the ignition switch OFF.
2. Disconnect the low tire pressure warning control unit harness connector.
3. Turn the ignition switch ON.
   CAUTION:
   Never start engine.
4. Check the continuity between the low tire pressure warning control unit harness connector and the ground.

Low tire pressure warning control unit		—	Voltage
Connector	Terminal		
M96	15	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace error-detected parts.

3.GROUND SYSTEM INSPECTION

1. Turn the ignition switch OFF.
2. Check the continuity between the low tire pressure warning control unit harness connector and the ground.

Low tire pressure warning control unit		—	Continuity
Connector	Terminal		
M96	32	Ground	Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace error-detected parts.

4.CHECK TIRE PRESSURE RECEIVER POWER SUPPLY CIRCUIT

1. Connect the low tire pressure warning control unit harness connector.
2. Disconnect the tire pressure receiver harness connector.
3. Check the voltage between the tire pressure receiver harness connector and ground.

Tire pressure receiver		—	Voltage
Connector	Terminal		
E53 (Front LH)	1	Ground	7 - 16 V
E19 (Front RH)			
B43 (Rear LH)			
B251 (Rear RH)			

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace error-detected parts.

5. CHECK RECEIVER GROUND CIRCUIT

1. Disconnect the low tire pressure warning control unit harness connector.
2. Check the continuity between the harness connector terminals of the receiver and the low tire pressure warning control unit.

Tire pressure receiver		Low tire pressure warning control unit		Continuity
Connector	Terminal	Connector	Terminal	
E53 (Front LH)	4	M96	26	Existed
E19 (Front RH)			25	
B43 (Rear LH)			24	
B251 (Rear RH)			23	

Is the inspection result normal?

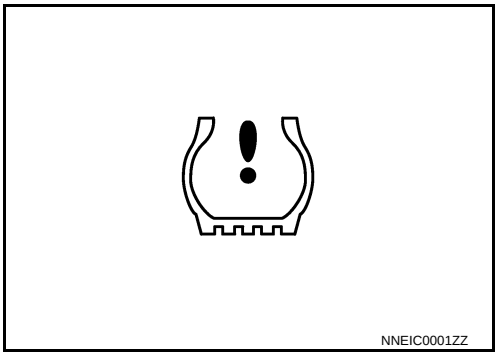
YES >> INSPECTION END
NO >> Repair or replace error-detected parts.

LOW TIRE PRESSURE WARNING LAMP

Description

INFOID:0000000007519500

Uses CAN communication from the low tire pressure warning control unit to illuminate the low tire pressure warning lamp on the combination meter.



Condition	Low tire pressure warning lamp
Ignition switch OFF.	OFF
Ignition switch ON.	Illuminates for 1 second, then turns OFF.
When tire pressure is low [Tire pressure is 182 kPa (1.86 kg/cm^2, 26.4 psi)* or less	ON
Tire Pressure Monitoring System (TPMS) error	Flashes for 1 minute, then stays illuminated.

*: Tire pressure at each condition differs.

Component Function Check

INFOID:0000000007519501

1.CHECK THE ILLUMINATION OF THE LOW TIRE PRESSURE WARNING LAMP

Check that the low pressure warning lamp is turned OFF after illuminating for approximately 1 second, when the ignition switch is turned ON.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Perform trouble diagnosis. Refer to WT-40, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000007519502

1.POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to WT-38, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace error-detected parts.

2.PERFORM THE SELF-DIAGNOSIS

With CONSULT
Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is DTC “U1000” detected?

YES >> Perform trouble diagnosis for CAN communication system. Refer to WT-36, "Diagnosis Procedure".
NO >> GO TO 3.

3.CHECK LOW TIRE PRESSURE WARNING LAMP SIGNAL

With CONSULT
1. Turn the ignition switch ON.
   CAUTION:
   Never start engine.
2. Select “DATA MONITOR” of “AIR PRESSURE MONITOR”.

3. Read out the value of “WARNING LAMP”.

Does the data monitor display change from ON to OFF?

YES >> Check the combination meter. Refer to MWI-6, "METER SYSTEM : System Description".
NO >> Replace the low tire pressure warning control unit. Refer to WT-62, "Exploded View".

ECU DIAGNOSIS INFORMATION

LOW TIRE PRESSURE WARNING CONTROL UNIT

Reference Value

INFOID:0000000007519503

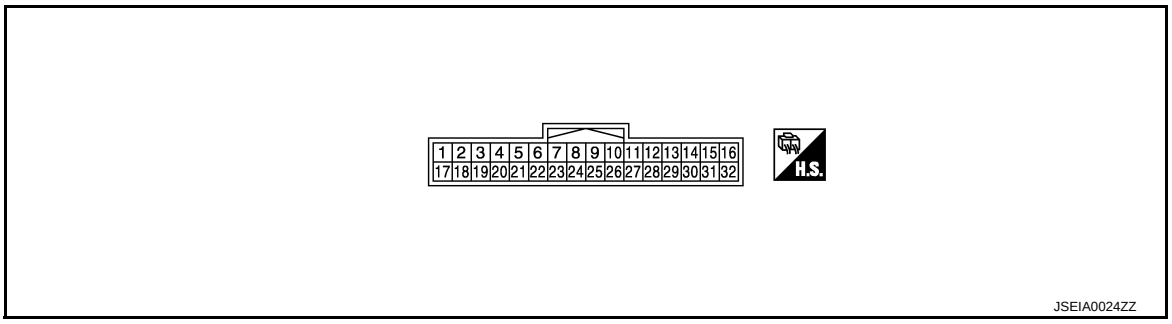
VALUES ON THE DIAGNOSIS TOOL

CAUTION:

The reference values in the table below come from the control unit calculation data. The normal values may in some cases be displayed even though the power circuit (harness) is open or shorted.

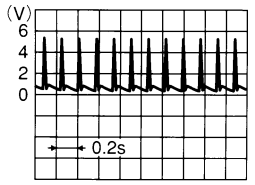
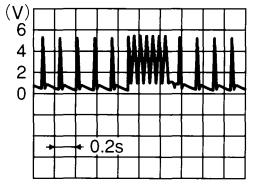
Monitor item	Data monitor	
	Condition	Reference values for normal operation
VHCL SPEED SE	Drive the vehicle.	Vehicle speed (km/h) or (MPH)
AIR PRESS FL	Start the engine and drive at a speed of 40 km/h (25 MPH) or more for 10 minutes.	Tire pressure (kg/cm^2), (kPa) or (Psi)
AIR PRESS FR		
AIR PRESS RR		
AIR PRESS RL		
ID REGST FL1	Ignition switch ON	ID registered: Done ID not registered: Yet
ID REGST FR1		
ID REGST RR1		
ID REGST RL1		
WARNING LAMP		Low tire pressure warning lamp ON: On Low tire pressure warning lamp OFF: Off
BUZZER		Combination meter buzzer ON: On Combination meter buzzer OFF: Off

TERMINAL LAYOUT



PHYSICAL VALUES

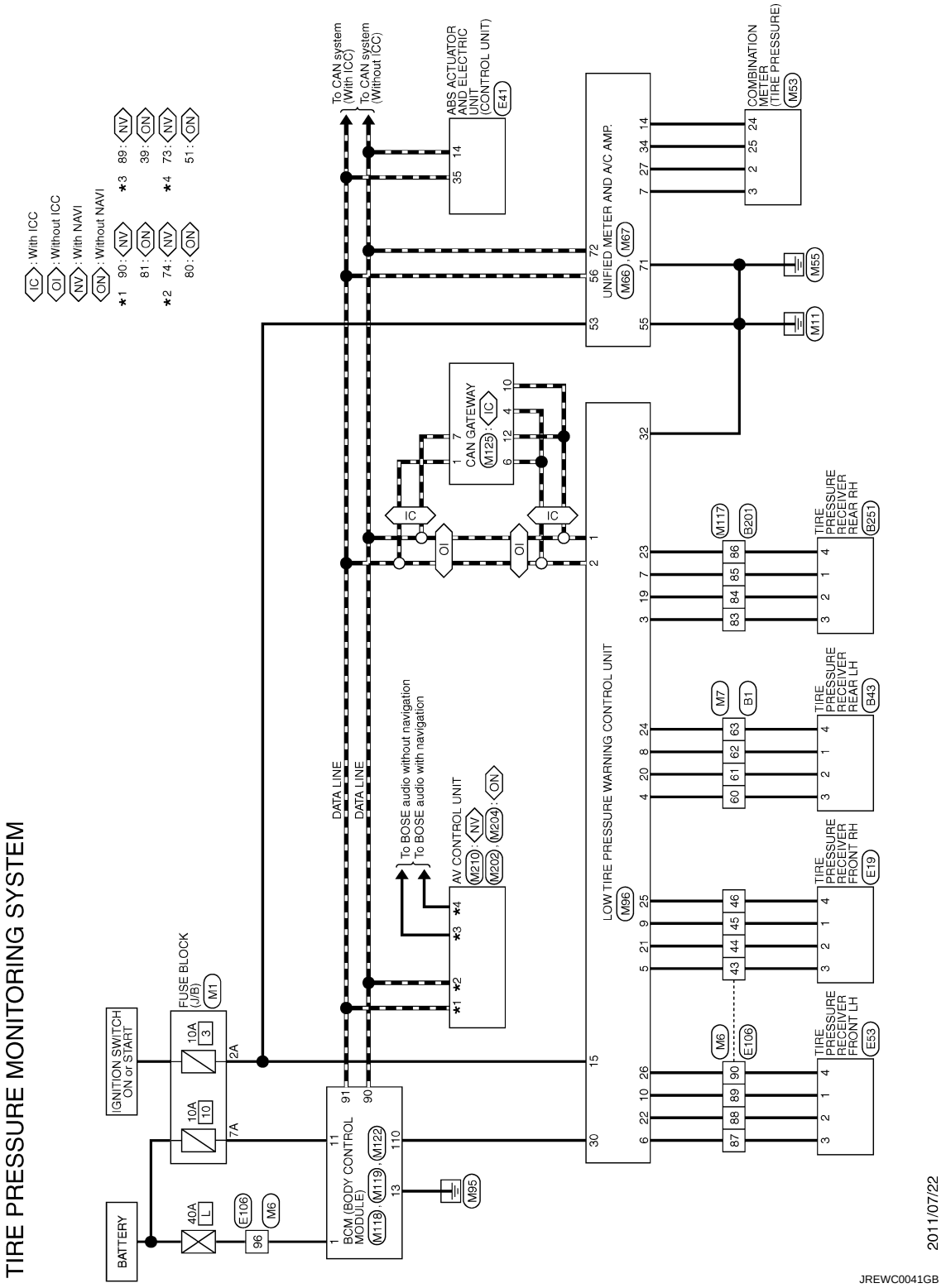
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
1 (P)	—	CAN-L	—	—	—
2 (L)		CAN-H	—	—	—

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
		Signal name	Input/ Output			
3 (BG) 4 (L) 5 (R) 6 (P)	Ground	Tire pressure receiver signal	Input	Ignition switch ON	Stand by status (Approx. 4.5 V)	 OCC3879D
					When signal is received (Approx. 4.5 V)	 OCC3880D
7 (SB) 8 (R) 9 (GR) 10 (G)	Ground	Tire pressure receiver power supply	Input	Ignition switch ON	Approx. 7 - 16 V (Power is supplied to the receiver from the low tire pressure warning control unit.)	
15 (Y)	Ground	Ignition switch	Input	Ignition switch ON	Battery voltage	
19 (W) 20 (BR) 21 (LG) 22 (V)	Ground	Tire pressure receiver signal (sensitivity)	Input	Ignition switch ON	Approx. 0.7 V	
23 (B) 24 (Y) 25 (W) 26 (P)	Ground	Tire pressure receiver ground	—	—	0 V	
30 (LG)	Ground	Hazard lamp	Output	Hazard lamp switch ON	0 V	
				Hazard lamp switch OFF	Battery voltage	
32 (B)	Ground	Ground	—	—	0 V	

Wiring Diagram - TIRE PRESSURE MONITORING SYSTEM -

INFOID:0000000007519505

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-13, "Connector Information".



DTC Inspection Priority Chart

INFOID:0000000007519506

When multiple DTCs are detected simultaneously, check one by one as per on the following priority list.

Priority	Detection items
1	• U1000 CAN COMM CIRCUIT • U1010 CONTROL UNIT (CAN)
2	• C1704 LOW PRESSURE FL • C1705 LOW PRESSURE FR • C1706 LOW PRESSURE RR • C1707 LOW PRESSURE RL
3	• C1755 PR RECEIV COND FL • C1756 PR RECEIV COND FR • C1757 PR RECEIV COND RR • C1758 PR RECEIV COND RL
4	• C1708 [NO DATA] FL • C1709 [NO DATA] FR • C1710 [NO DATA] RR • C1711 [NO DATA] RL
5	• C1716 [PRESSDATA ERR] FL • C1717 [PRESSDATA ERR] FR • C1718 [PRESSDATA ERR] RR • C1719 [PRESSDATA ERR] RL
6	• C1720 [CODE ERR] FL • C1721 [CODE ERR] FR • C1722 [CODE ERR] RR • C1723 [CODE ERR] RL
7	C1728 RECEIVER ID NO REG
8	C1729 VHCL SPEED SIG ERR
9	• C1750 [RECEIVER ERR] FL • C1751 [RECEIVER ERR] FR • C1752 [RECEIVER ERR] RR • C1753 [RECEIVER ERR] RL
10	C1754 CONT UNIT (EEPROM)

DTC Index

INFOID:0000000007519507

DTC	Display Item	Reference
C1704	LOW PRESSURE FL	WT-13
C1705	LOW PRESSURE FR	
C1706	LOW PRESSURE RR	
C1707	LOW PRESSURE RL	
C1708	[NO DATA] FL	WT-15
C1709	[NO DATA] FR	
C1710	[NO DATA] RR	
C1711	[NO DATA] RL	
C1716	[PRESSDATA ERR] FL	WT-19
C1717	[PRESSDATA ERR] FR	
C1718	[PRESSDATA ERR] RR	
C1719	[PRESSDATA ERR] RL	
C1720	[CODE ERR] FL	WT-21
C1721	[CODE ERR] FR	
C1722	[CODE ERR] RR	
C1723	[CODE ERR] RL	
C1728	RECEIVER ID NO REG	WT-25

DTC	Display Item	Reference
C1729	VHCL SPEED SIG ERR	WT-28
C1750	[RECEIVER ERR] FL	WT-29
C1751	[RECEIVER ERR] FR	
C1752	[RECEIVER ERR] RR	
C1753	[RECEIVER ERR] RL	
C1754	CONT UNIT (EEPROM)	WT-31
C1755	PR RECEIV COND FL	WT-34
C1756	PR RECEIV COND FR	
C1757	PR RECEIV COND RR	
C1758	PR RECEIV COND RL	
U1000	CAN COMM CIRCUIT	WT-36
U1010	CONTROL UNIT (CAN)	WT-37

SYMPTOM DIAGNOSIS

TPMS

Symptom Table

INFOID:0000000007519508

LOW TIRE PRESSURE WARNING LAMP SYMPTOM CHART

Diagnosis items	Symptom (Ignition switch ON)	Low tire pressure warning lamp	Cause	Action
Low tire pressure warning lamp	The low tire pressure warning lamp illuminates for 1 second, then turns OFF.	 ON 1 sec > stays OFF SEIA0592E	Wake-up operation for all tire pressure sensors at wheels is completed.	No system malfunctions
	The low tire pressure warning lamp repeats blinking ON for 2 seconds and OFF for 0.2 seconds.	 Blinks: ON 2 sec > OFF 0.2 sec SEIA0593E	Wake-up operation for all tire pressure sensors at wheels is not completed.	Perform the wake-up operation for all tire pressure sensors at wheels. Refer to WT-5, "Work Procedure".
	The low tire pressure warning lamp blinks once.	 Blinks 1 time ON 0.3 sec > OFF 1.0 sec JPEIC0090GB	The front left tire pressure sensor is not activated.	Perform the wake-up operation for the tire pressure sensor at front left wheel. Refer to WT-5, "Work Procedure".
	The low tire pressure warning lamp repeats blinking twice.	 Blinks 2 times ON 0.3 sec > OFF 0.3 sec SEIA0595E	The front right tire pressure sensor is not activated.	Perform the wake-up operation for the tire pressure sensor at front right wheel. Refer to WT-5, "Work Procedure".
	The low tire pressure warning lamp repeats blinking for 3 times.	 Blinks 3 times ON 0.3 sec > OFF 0.3 sec SEIA0596E	The rear right tire pressure sensor is not activated.	Perform the wake-up operation for the tire pressure sensor at rear right wheel. Refer to WT-5, "Work Procedure".
	The low tire pressure warning lamp repeats blinking for 4 times.	 Blinks 4 times ON 0.3 sec > OFF 0.3 sec SEIA0597E	The rear left tire pressure sensor is not activated.	Perform the wake-up operation for the tire pressure sensor at rear left wheel. Refer to WT-5, "Work Procedure".
	The low tire pressure warning lamp turns ON and stays illuminated.	 Comes ON and stays ON SEIA0598E	Low tire pressure	Check the tire pressure for all wheels and adjust to the specified value. Refer to WT-66, "Tire Air Pressure".

Diagnosis items	Symptom (Ignition switch ON)	Low tire pressure warning lamp	Cause	Action
Low tire pressure warning lamp	The low tire pressure warning lamp repeats blinking at 0.5-second intervals for 1 minute, and then stays illuminated.	 Blinks 1 min ON 0.5 sec > OFF 0.5 sec and stays ON SEIA0788E	The combination meter fuse is open or removed (or pulled out).	Check and install the combination meter fuse. If necessary, replace the fuse.
			The low tire pressure warning control unit harness connector is removed.	Check the connection conditions of the low tire pressure warning control unit harness connector, and repair if necessary.
			Tire Pressure Monitoring System (TPMS) malfunction.	• Perform CONSULT self-diagnosis. Refer to WT-11, "CONSULT Function". • If necessary, perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".
Turn signal lamp	The turn signal lamps do not blink twice when the tire pressure sensor is activated. Or the buzzer does not sound.	—	1. The tire pressure sensor activation tool (J-45295) does not activate. 2. The ignition switch is OFF when the tire pressure sensor wake-up operation is performed. 3. The tire pressure sensor activation tool (J-45295) is not used in the correct position. 4. The tire pressure sensor is already waked up.	1. Replace the battery in the tire pressure sensor activation tool (J-45295). 2. Turn the ignition switch ON when performing the tire pressure sensor wake-up operation. 3. Operate the tire pressure sensor activation tool (J-45295) in the correct position when performing the wake-up operation. 4. No procedure.

NOTE:
If tire pressure sensor wake-up operation is not completed for two or more tire pressure sensors, the applicable low tire pressure warning lamp blinking patterns are displayed continuously.
(Example: Blinks once/OFF/blinks 3 times = Wake-up operation is not completed at the front left wheel and rear right wheel tire pressure sensors.)

LOW TIRE PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000007519509

The low tire pressure warning lamp does not illuminate when the ignition switch is turned ON.

NOTE:

The low tire pressure warning lamp illuminates for approximately 1 second and then turns OFF when the ignition switch is turned ON. This is to check that no abnormal condition is present in the tire pressure monitoring system.

The lamp bulb may be burnt out or the tire pressure monitoring system may be malfunctioning if the low tire pressure warning lamp does not illuminate when the ignition switch is turned ON.

Diagnosis Procedure

INFOID:0000000007519510

1.CHECK LOW TIRE PRESSURE WARNING LAMP

Perform trouble diagnosis of the low tire pressure warning lamp. Refer to WT-40, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Check pin terminals for damage or loose connection with harness connector. If any items are damaged, repair or replace error-detected parts.

NO >> Repair or replace error-detected parts.

LOW TIRE PRESSURE WARNING LAMP DOES NOT TURN OFF

Description

INFOID:0000000007519511

The low tire pressure warning lamp does not turn OFF after several seconds is passed after engine starts.

Diagnosis Procedure

INFOID:0000000007519512

1.CHECK TIRE PRESSURE

1. Turn the ignition switch ON.
   CAUTION:
   Never start the engine.
2. Check the tire pressure for all wheels and adjust to the specified value. Refer to WT-66, "Tire Air Pressure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Inspect or repair the tires or wheels.

2.CHECK LOW TIRE PRESSURE WARNING LAMP

Check low tire pressure warning lamp display.

Does not low tire pressure warning lamp turn OFF?

YES >> GO TO 3.
NO >> INSPECTION END

3.CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT

With CONSULT
Perform “AIR PRESSURE MONITOR” self-diagnosis.

Is any DTC detected?

YES >> Check the DTC. Refer to WT-45, "DTC Index".
NO >> GO TO 4.

4.CHECK POWER SUPPLY AND GROUND

Check the power supply and ground circuit. Refer to WT-38, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace low tire pressure warning control unit. Refer to WT-62, "Exploded View".
NO >> Repair or replace damaged parts.

LOW TIRE PRESSURE WARNING LAMP BLINKS

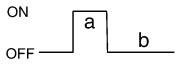
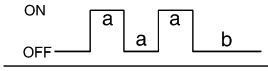
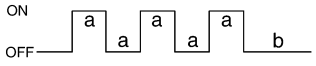
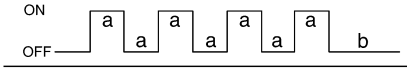
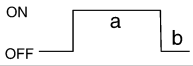
Description

INFOID:0000000007519513

The low tire pressure warning lamp blinks when the ignition switch is turned ON.

NOTE:

When the low tire pressure warning lamp blinks as shown in the figure after the ignition switch is turned ON, the tire pressure sensor is not waking up.

Low tire pressure warning lamp blinking timing	Activation tire position
 a : 0.3 sec. b : 1.0 sec.	Front LH
 a : 0.3 sec. b : 1.0 sec.	Front RH
 a : 0.3 sec. b : 1.0 sec.	Rear RH
 a : 0.3 sec. b : 1.0 sec.	Rear LH
 a : 2 sec. b : 0.2 sec.	All tires

JPEIC0089GB

Diagnosis Procedure

INFOID:0000000007519514

1. TIRE PRESSURE SENSOR WAKE-UP OPERATION

Perform the tire pressure sensor wake-up. Refer to WT-5, "Work Procedure".

Is the tire pressure sensor wake-up completed?

YES >> GO TO 2.
NO >> Perform trouble diagnosis for the tire pressure sensor. Refer to WT-15, "Diagnosis Procedure".

2. TIRE PRESSURE SENSOR ID REGISTRATION

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

Is tire pressure sensor ID registration completed?

YES >> INSPECTION END
NO >> Perform the self-diagnosis for “AIR PRESSURE MONITOR”. Refer to WT-45, "DTC Index".

TURN SIGNAL LAMP BLINKS

Description

INFOID:0000000007519515

DESCRIPTION

The turn signal lamp blinks when the ignition switch is turned ON.

Diagnosis Procedure

INFOID:0000000007519516

1.CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT

1. Check low tire pressure warning control unit input/output signal. Refer to WT-42, "Reference Value".

Is the inspection result normal?

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

2.CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT CIRCUIT

With CONSULT

Perform “AIR PRESSURE MONITOR” self-diagnosis. Refer to WT-31, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace error-detected parts.

3.CHECK TIRE PRESSURE WARNING CONTROL UNIT AND BCM CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect low tire pressure warning control unit harness connector and BCM harness connector.
3. Check the continuity between low tire pressure warning control unit harness connector and BCM harness connector.

Low tire pressure warning control unit		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M96	30	M122	110	Existed

Is the inspection result normal?

YES >> Check the BCM. Refer to BCS-4, "CONFIGURATION (BCM) : Work Procedure".
NO >> Repair or replace error-detected parts.

ID REGISTRATION CANNOT BE COMPLETED

Description

INFOID:0000000007519517

DESCRIPTION

The ID of the tire pressure sensor installed in each wheel cannot be registered in the tire pressure monitoring system.
Inspect the tire pressure sensor or the tire pressure monitoring system circuit.

Diagnosis Procedure

INFOID:0000000007519518

1.TIRE PRESSURE SENSOR WAKE-UP

Perform the tire pressure sensor wake-up. Refer to WT-5, "Work Procedure".

Is the tire pressure sensor wake-up completed?

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

2.CHECK TIRE PRESSURE SENSOR ACTIVATION TOOL

Check tire pressure sensor activation tool.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the battery of tire pressure sensor activation tool or repair/replace the tire pressure sensor activation tool.

3.TIRE PRESSURE SENSOR ID REGISTRATION

Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".

CAUTION:

To perform ID registration, observe the following points:

- **Never register ID in a place where radio waves are interfered (e.g. radio tower).**
- **Never register ID in a place close to vehicles including TPMS.**

Is tire pressure sensor ID registration completed?

YES >> INSPECTION END
NO >> GO TO 4.

4.CHECK TIRE PRESSURE SIGNAL

Change the work location and perform ID registration again.

NOTE:

Depending on the tire pressure sensor position*, a blind spot exists, and the tire pressure receiver gets a poor reception. If an ID registration is performed under this condition, the registration may not be completed. In such case, follow the instructions below to improve the radio wave receiving environment.

- Rotate tire by 90°, 180°, or 270°. (This Step is to change tire pressure sensor position.)
- Open the door close to the tire of which ID registration is ongoing.

*: Radio wave reception condition depends on vehicle architecture (e.g. body harness layout, tire wheel design) or environment.

When ID registration is performed, which wheels do not react?

All wheels react and ID registration is possible.>>INSPECTION END
Only certain wheel(s) do not react.>>Replace applicable tire pressure sensor. Refer to WT-63, "Removal and Installation".
All wheels do not react.>>Check the tire pressure receiver. Refer to WT-29, "Diagnosis Procedure".

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000007519519

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

Reference page			2WD models: FSU-9, FSU-12 AWD models: FSU-27, FSU-30	WT-60, "Inspection"	WT-58, "Adjustment"	WT-66, "Tire Air Pressure"	WT-58, "Adjustment"	—	—	WT-66, "Tire Air Pressure"	NVH in DLN section.	NVH in DLN section.	NVH in FAX and FSU sections.	NVH in RAX and RSU sections.	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	NVH in FAX, RAX section.	NVH in BR section.	NVH in ST section.
Possible cause and SUSPECTED PARTS			Improper installation, looseness	Out-of-round	unbalance	Incorrect tire pressure	Uneven tire wear	Deformation or damage	Non-uniformity	Incorrect tire size	PROPELLER SHAFT	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEELS	DRIVE SHAFT	BRAKE	STEERING
Symptom	TIRES	Noise	×	×	×	×	×	×	×		×	×	×	×		×	×	×	×
		Shake	×	×	×	×	×	×		×	×		×	×		×	×	×	×
		Vibration				×				×	×		×	×			×		×
		Shimmy	×	×	×	×	×	×	×	×			×	×		×		×	×
		Judder	×	×	×	×	×	×		×			×	×		×		×	×
		Poor quality ride or handling	×	×	×	×	×	×		×			×		×	×			
	ROAD WHEEL	Noise	×	×	×			×			×	×	×	×	×		×	×	×
		Shake	×	×	×			×			×		×	×	×		×	×	×
		Shimmy, Judder	×	×	×			×					×	×	×			×	×
		Poor quality ride or handling	×	×	×			×					×	×	×				

×: Applicable

PRECAUTION

PRECAUTIONS

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

INFOID:0000000007519520

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Service Notice and Precautions

INFOID:0000000007519521

- Low tire pressure warning lamp blinks for 1min, then turns ON when occurring any malfunction except low tire pressure. Erase the memory with CONSULT, or register the ID to turn low tire pressure warning lamp OFF. Refer to WT-11, "CONSULT Function", WT-6, "Work Procedure".
- ID registration is required when replacing or rotating wheels, replacing tire pressure sensor or low tire pressure warning control unit. Refer to WT-62, "Exploded View".
- Replace grommet seal, valve core and cap of tire pressure sensor in TPMS, when replacing each tire by reaching the wear limit. Refer to WT-63, "Exploded View".

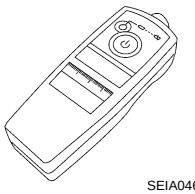
PREPARATION

PREPARATION

Special Service Tool

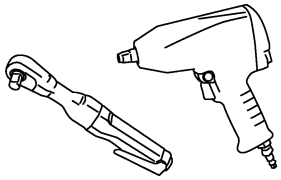
INFOID:0000000007519522

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
– (J-45295) Tire pressure sensor activation tool  SEIA0462E	ID registration

Commercial Service Tool

INFOID:0000000007519523

Tool name	Description
Power tool  PBIC0190E	Loosening wheel nuts

PERIODIC MAINTENANCE

ROAD WHEEL

Adjustment

INFOID:0000000007519524

BALANCING WHEELS (BONDING WEIGHT TYPE)

Preparation Before Adjustment

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.**

Wheel Balance Adjustment

- The details of the adjustment procedure are different for each model of wheel balancer. Therefore, refer to each instruction manual.
- 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.

1. Set road wheel on tire balance machine using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the tire balance machine indicator, multiply outer unbalance value by 5/3 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install to the designated outer position of, or at the designated angle in relation to the road wheel.

   CAUTION:

   - **Never install the inner balance weight before installing the outer balance weight.**
   - **Before installing the balance weight, always to clean the mating surface of the road wheel.**

a. Indicated unbalance value × 5/3 = balance weight to be installed

   Calculation example:

   23 g (0.81 oz) × 5/3 = 38.33 g (1.35 oz) ⇒ 37.5 g (1.32 oz) balance weight (closer to calculated balance weight value)

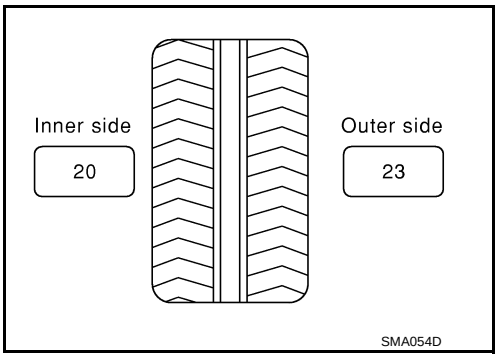
   NOTE:

   Note that balance weight value must be closer to the calculated balance weight value.

   Example:

   36.2 ⇒ 35 g (1.23 oz)

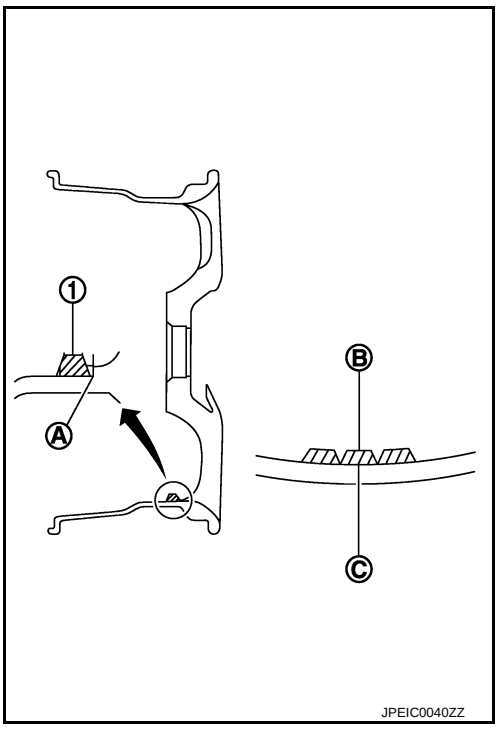
   36.3 ⇒ 37.5 g (1.32 oz)



b. Installed balance weight in the position.

- When installing balance weight (1) to road wheels, set it into the grooved area (A) on the inner wall of the road wheel as shown in the figure so that the balance weight center (B) is aligned with the tire balance machine indication position (angle) (C).

CAUTION:
- **Always use genuine NISSAN adhesion balance weights.**
- **Balance weights are non-reusable; always replace with new ones.**
- **Never install three or more sheets of balance weight.**



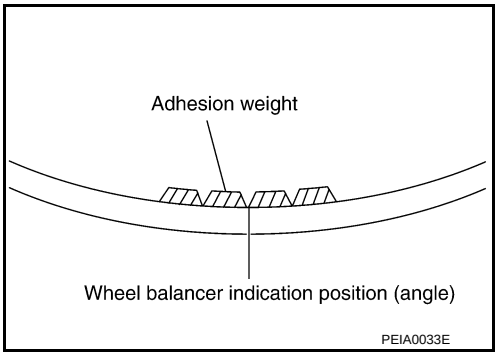
c. If calculated balance weight value exceeds 50 g (1.76 oz), install two balance weight sheets in line with each other as shown in the figure.

CAUTION:
Never install one balance weight sheet on top of another.

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

CAUTION:
Never install three or more balance weight.

5. Start the tire balance machine. Check that inner and outer residual unbalance values is within the allowable unbalance value.



CAUTION:
If either residual unbalance value exceeds limit, repeat installation procedures.

Allowable unbalance value

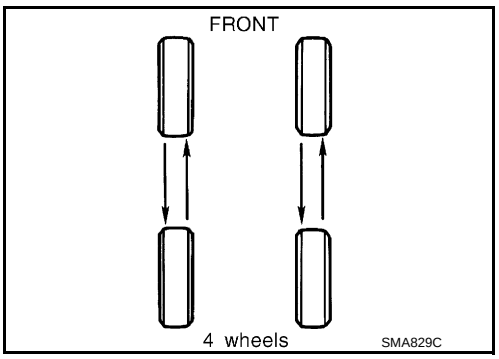
Dynamic (At flange): **Refer to WT-66, "Road Wheel".**

Static (At flange): **Refer to WT-66, "Road Wheel".**

TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to MA-5, "FOR NORTH AMERICA : Explanation of General Maintenance" (For North America), MA-7, "FOR MEXICO : General Maintenance" (For Mexico).
- When installing the wheel, tighten wheel nuts to the specified torque. Refer to WT-60, "Exploded View".

CAUTION:
- **Never include the T-type spare tire when rotating the tires.**
- **When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.**
- **Be careful not to tighten wheel nut at torque exceeding the criteria for preventing strain of disc rotor.**
- **Use NISSAN genuine wheel nuts for aluminum wheels.**



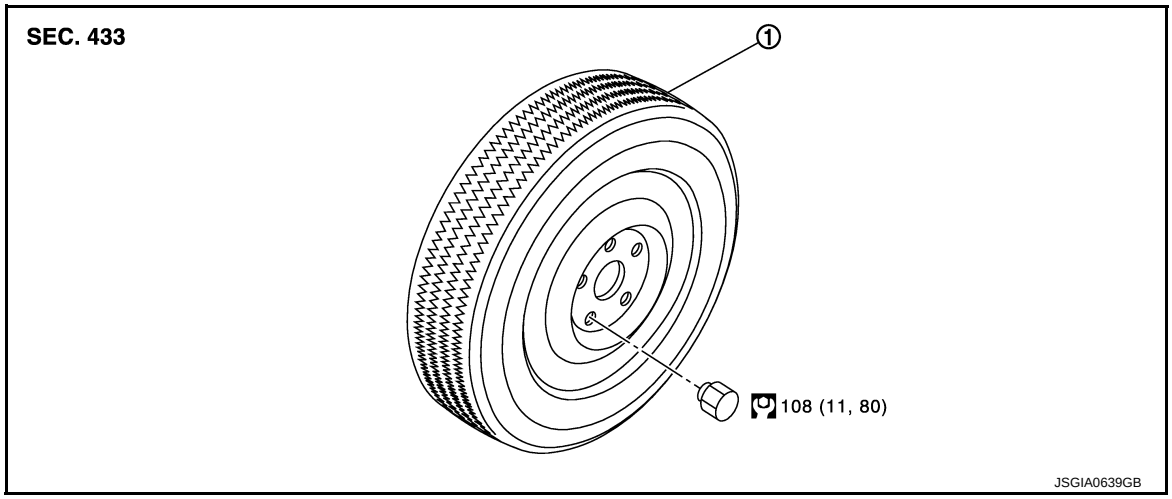
- Perform the ID registration, after tire rotation. Refer to WT-6, "Work Procedure".

REMOVAL AND INSTALLATION

ROAD WHEEL TIRE ASSEMBLY

Exploded View

INFOID:0000000007519525



1. Tire assembly

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000007519526

REMOVAL

1. Remove wheel nuts.
2. Remove tire assembly.

INSTALLATION

Install in the reverse order of removal.

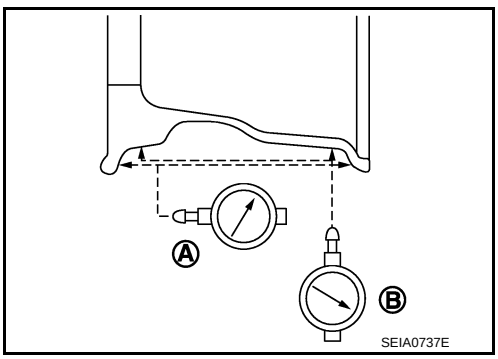
Inspection

INFOID:0000000007519527

ALUMINUM WHEEL

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 in the figure.
c. Check runout, If the axial runout (A) or radial runout (B) exceeds the limit, replace aluminum wheel.



Limit

Axial runout (A) **: Refer to WT-66, "Road Wheel".**

Radial runout (B) **: Refer to WT-66, "Road Wheel".**

STEEL WHEEL

1. Check tires for wear and improper inflation.

2. Check wheels for deformation, clacks and other damage. If deformed, remove wheel and check wheel runout.

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

b. Set two dial indicators as shown in the illustration.

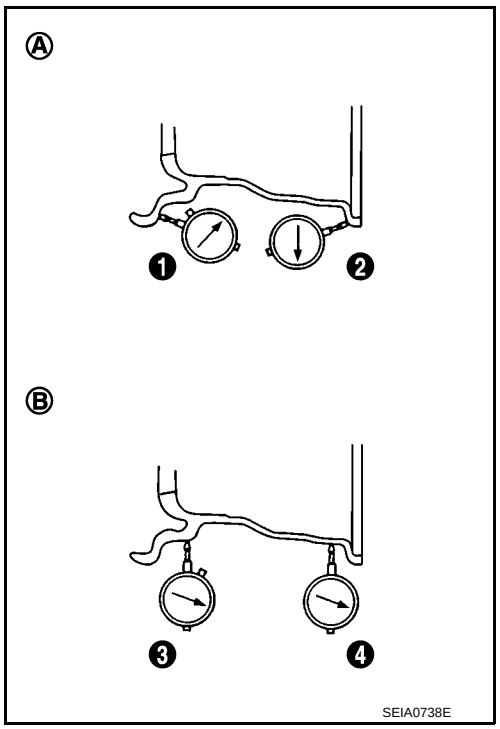
c. Set each dial indicator to “0”.

d. Rotate wheel and check dial indicators at several points around the circumference of the wheel.

e. Calculate runout at each point as shown below.

Axial runout (A) **: (❶+❷)/2**

Radial runout (B) **: (❸+❹)/2**



f. Select maximum positive runout value and the maximum negative value. Add the two values to determine total runout.

CAUTION:

In case a positive or negative value is not available, use the maximum value (negative or positive) for total runout.

Limit

A : Refer to WT-66, "Road Wheel".

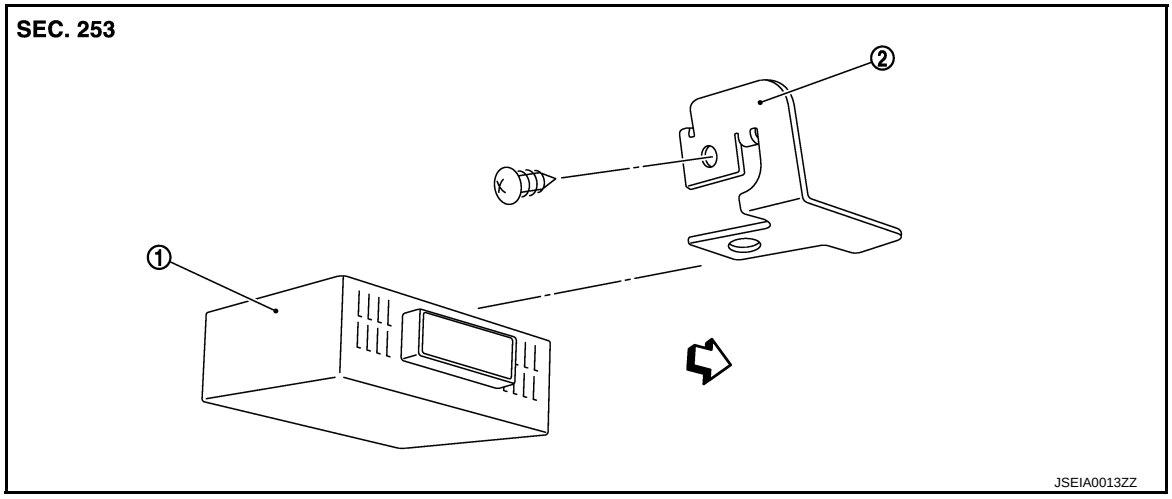
B : Refer to WT-66, "Road Wheel".

g. If the total runout value exceeds limit, replace steel wheel.

TPMS CONTROL UNIT

Exploded View

INFOID:0000000007519528



1. Low tire pressure warning control unit 2. Bracket

⇦:Vehicle front

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000007519529

REMOVAL

1. Remove the glove box assembly. Refer to IP-11, "Exploded View".
2. Remove the instrument lower panel RH. Refer to IP-11, "Exploded View".
3. Disconnect low tire pressure warning control unit connector.
4. Remove the low tire pressure warning control unit control unit.

INSTALLATION

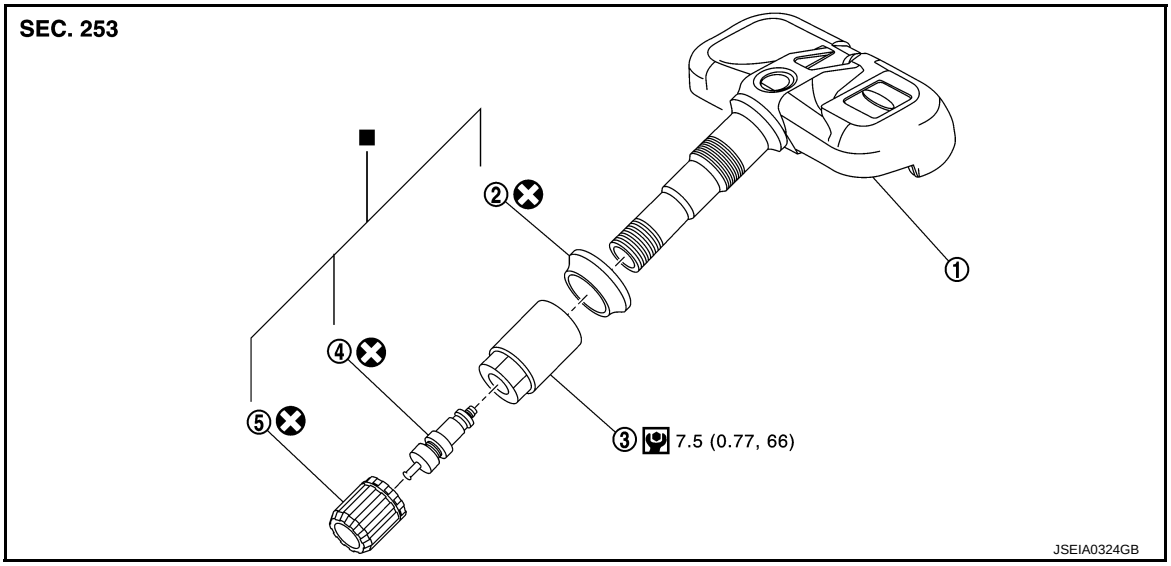
Install in the reverse order of removal.

- Perform ID registration after replacing low tire pressure warning control unit. Refer to WT-6, "Work Procedure".

TIRE PRESSURE SENSOR

Exploded View

INFOID:0000000007519530



1. Tire pressure sensor
2. Grommet seal
3. Valve nut
4. Valve core
5. Valve cap

■ : Parts that are replaced as a set when the tire is replaced.

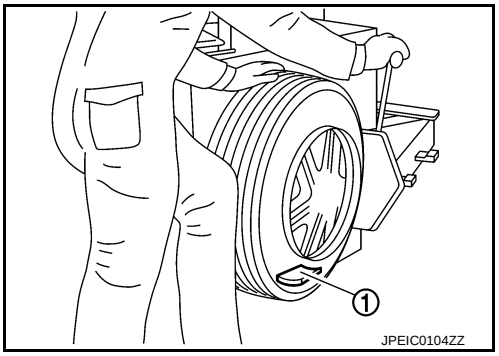
Refer to GI-4, "Components" for symbols not described above.

Removal and Installation

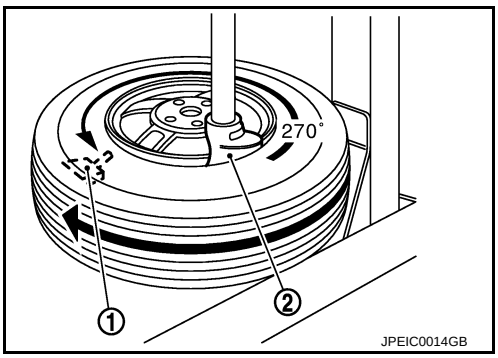
INFOID:0000000007519531

REMOVAL

1. Remove tire assembly. Refer to WT-60, "Removal and Installation".
2. Remove valve cap, valve core and then deflate tire.
   NOTE:
   If the tire is reused, apply a matching mark to the position of the tire road wheel valve hole for the purpose of wheel balance adjustment after installation.
3. Remove valve nut retaining tire pressure sensor and allow tire pressure sensor to fall into tire.
4. Use the tire changer and disengage the tire beads.
   CAUTION:
   - **Verify that the tire pressure sensor (1) is at the bottom of the tire while performing the above.**
   - **Be sure not to damage the road wheel or tire pressure sensor.**
5. Apply bead cream or an equivalent to the tire beads.
6. Set tire onto the tire changer turntable so that the tire pressure sensor inside the tire is located close to the road wheel valve hole.

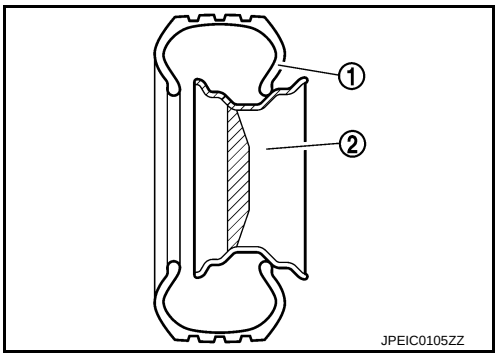


7. Turn tire so that valve hole is at bottom and bounce so that tire pressure sensor (1) is near valve hole. Carefully lift tire onto turntable and position valve hole (and tire pressure sensor) 270 degree from mounting/dismounting head (2).
   CAUTION:
   Be sure not to damage the road wheel and tire pressure sensor.
8. Remove tire pressure sensor from tire.
9. Remove the grommet seal.

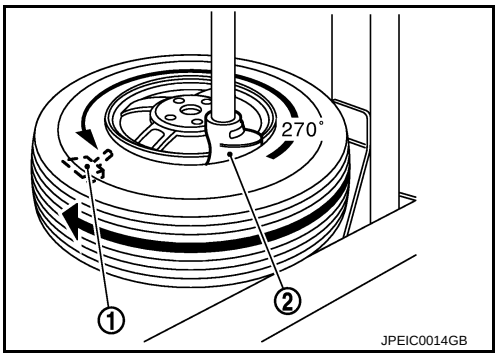


INSTALLATION

1. Apply bead cream or an equivalent to the tire beads.
2. Install the tire inside beads (1) onto the road wheel (2) in the position shown in the figure.
3. Install grommet seal to the tire pressure sensor.
   CAUTION:
   Never reuse grommet seal.
4. Install the tire pressure sensor onto the road wheel, and tighten the valve nut to the specified torque.
   CAUTION:
   - **Never reuse valve core and valve cap.**
   - **Never use a power tool to avoid impact.**



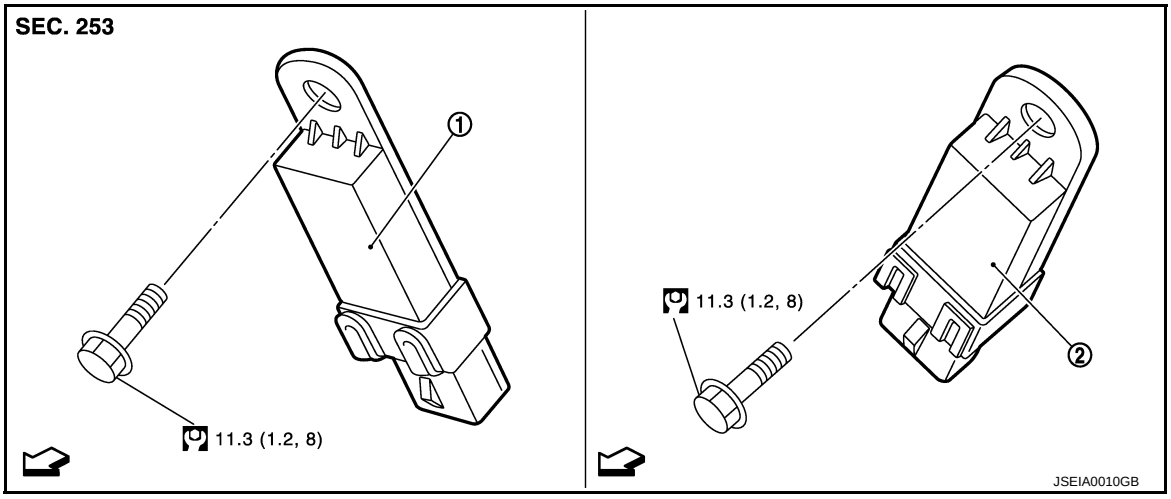
5. Set the tire onto the turntable so that the tire changer arm (2) is at a position approximately 270° from the tire pressure sensor (1).
   CAUTION:
   Be sure that the arm does not contact the tire pressure sensor.
6. Install the tire outer side beads onto the road wheel.
   CAUTION:
   When installing, check that the tire does not turn together with the road wheel.
7. Check the tire pressure for all wheels and adjust to the specified value. Refer to WT-66, "Tire Air Pressure".
   NOTE:
   Before adding air, align the tire with the position of the matching mark applied at the time of removal.
8. Install tire to the vehicle. Refer to WT-60, "Removal and Installation".
9. Perform tire pressure sensor ID registration. Refer to WT-6, "Work Procedure".



TIRE PRESSURE RECEIVER

Exploded View

INFOID:0000000007519532



1. Front tire pressure receiver
2. Rear tire pressure receiver

Refer to GI-4, "Components" for symbols in the figure.

⇦: Vehicle front

FRONT TIRE PRESSURE RECEIVER

FRONT TIRE PRESSURE RECEIVER : Removal and Installation

INFOID:0000000007519533

REMOVAL

1. Remove fender protector (rear). Refer to EXT-25, "FENDER PROTECTOR : Exploded View".
2. Remove mounting bolt for the front tire pressure receiver.
3. Disconnect front tire pressure receiver harness connector.
4. Remove front tire pressure receiver.

INSTALLATION

Installation is the reverse order of removal.

REAR TIRE PRESSURE RECEIVER

REAR TIRE PRESSURE RECEIVER : Removal and Installation

INFOID:0000000007519534

REMOVAL

1. Remove rear wheel house protector. Refer to EXT-27, "REAR WHEEL HOUSE PROTECTOR : Exploded View".
2. Remove mounting bolt for the rear tire pressure receiver.
3. Disconnect rear tire pressure receiver harness connector.
4. Remove rear tire pressure receiver.

INSTALLATION

Installation is the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Road Wheel

INFOID:0000000007519535

CONVENTIONAL

Item		Limit
Runout	Axial runout	Less than 0.3 mm (0.012 in)
	Radial runout	
Allowable unbalance	Dynamic (At flange)	Less than 5 g (0.17 oz) (one side)
	Static (At flange)	Less than 10 g (0.35 oz)

EMERGENCY (ALUMINUM WHEEL)

Item		Limit
Runout	Axial runout	Less than 1.5 mm (0.059 in)
	Radial runout	

EMERGENCY (STEEL WHEEL)

Item		Limit
Runout	Axial runout (Average)	Less than 1.5 mm (0.059 in)
	Radial runout (Average)	

Tire Air Pressure

INFOID:0000000007519536

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

Item	Standard	
	Front	Rear
P265/60R18 109V	230 (2.3, 33)	
P265/50R20 106V	230 (2.3, 33)	
P265/45R21 104V	230 (2.3, 33)	
T175/90D18 110M	420 (4.2, 60)	