HOW TO PROCEED WITH TROUBLESHOOTING

1. DIAGNOSIS OF TIRE VIBRATION

1.	TIGHTEN WHEEL NUTS

NEXT

▼

2.	INSPECT TIRES INFO

NG ▶ Go to step 3

OK ▶ Go to step 4

3.	REPAIR OR REPLACE TIRE(S)

NEXT

▼

4.	INSPECT AND/OR ADJUST WHEEL BALANCE INFO

NEXT

▼

5.	INSPECT FRONT AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT INFO

NG ▶ Go to step 6

OK ▶ Go to step 7

6.	REPAIR FRONT AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT INFO

NEXT

▼

7.	INSPECT REAR AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT INFO

NG ▶ Go to step 8

OK ▶ Go to step 9

8.	REPAIR REAR AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT INFO

NEXT

▼

9.	PERFORM ROAD TEST

NEXT

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▼

10.	RETURN VEHICLE TO CUSTOMER

2. DIAGNOSIS OF IRREGULAR TIRE WEAR

1.	INSPECT TIRES INFO

NEXT

▼

2.	REPAIR OR REPLACE TIRE(S)

NEXT

▼

3.	INSPECT AND/OR ADJUST FRONT WHEEL ALIGNMENT INFO

NEXT

▼

4.	INSPECT REAR WHEEL ALIGNMENT INFO

NEXT

▼

5.	PERFORM ROAD TEST

NEXT

▼

6.	RETURN VEHICLE TO CUSTOMER

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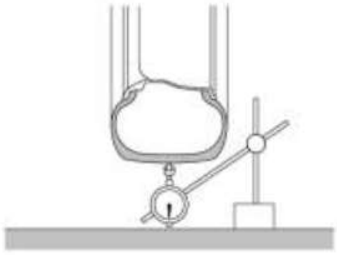
INSPECTION

1. INSPECT TIRES

(a) Check the tires for wear and proper inflation pressure.

Cold Tire Inflation Pressure:

Tire Size	Front kPa (kgf/cm^2, psi)	Rear kPa (kgf/cm^2, psi)
P195/65R15 89S	240 (2.4, 35)	230 (2.3, 33)
P215/45R17 87V	230 (2.3, 33)	220 (2.2, 32)
195/65R15 91H	220 (2.2, 32)	220 (2.2, 32)



C

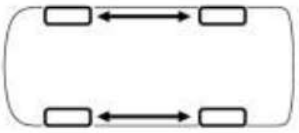
(b) Using a dial indicator, check the runout of the tires.

Maximum tire runout:

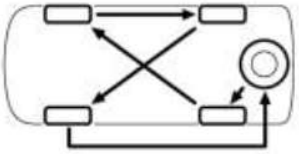
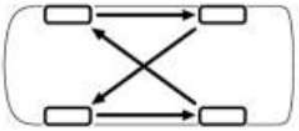
1.4 mm (0.0551 in.)

2. ROTATE TIRES

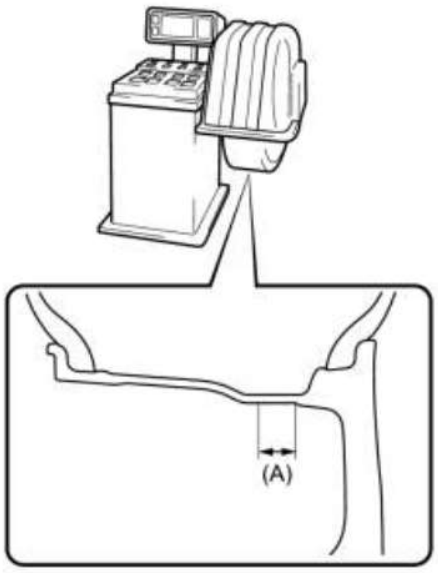
(a) Rotate the tires as shown in the illustration.

Area	Rotate Tire Vehicle Front Facing Left
North America	 C
Mexico	

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Area	Rotate Tire Vehicle Front Facing Left
	 C
Korea	 C

3. INSPECT WHEEL BALANCE



P

(a) Check and adjust the off-the-car balance.

Maximum imbalance after adjustment:

8.0 g (0.0176 lb)

- Use a cleaning detergent to remove dirt, oil and water from the surface where the balance weight is to be adhered.
- Do not touch the adhesive surface of the tape.
- Adhere a sticking type balance weight to the flat surface (A) shown in the illustration.

  Width (A):

  25 mm (0.984 in.)

- Push the balance weight securely with your finger to adhere it to the position.
- Do not reuse the balance weight.

HINT:

The inner side balance weight should be installed by clipping it to the rim.

4. INSPECT FRONT AXLE HUB BEARING LOOSENESS

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(a) Inspect the front axle hub bearing looseness INFO.

5. INSPECT REAR AXLE HUB BEARING LOOSENESS

(a) Inspect the rear axle hub bearing looseness INFO.

6. INSPECT FRONT AXLE HUB RUNOUT

(a) Inspect the front axle hub runout INFO.

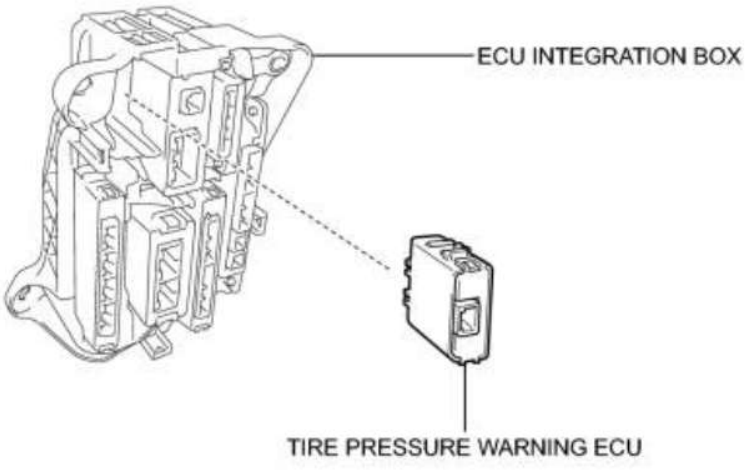
7. INSPECT REAR AXLE HUB RUNOUT

(a) Inspect the rear axle hub runout INFO.

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COMPONENTS

ILLUSTRATION



c

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REMOVAL

NOTICE:

When replacing the tire pressure warning ECU, read the transmitter IDs registered in the tire pressure warning ECU and make a note of them before removing the tire pressure warning ECU.

1. REMOVE ECU INTEGRATION BOX

HINT:

Refer to the procedures up to Remove ECU Integration Box INFO.

2. REMOVE TIRE PRESSURE WARNING ECU



C

(a) Disengage the 2 claws to remove the tire pressure warning ECU.

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INSTALLATION

1. INSTALL TIRE PRESSURE WARNING ECU



C

(a) Engage the 2 claws to install the tire pressure warning ECU.

2. INSTALL ECU INTEGRATION BOX

HINT:

Refer to the procedures from Install ECU Integration Box INFO.

3. REGISTER OF TRANSMITTER ID

(a) Register all transmitter IDs INFO.

4. PERFORM INITIALIZATION

(a) Perform initialization INFO.

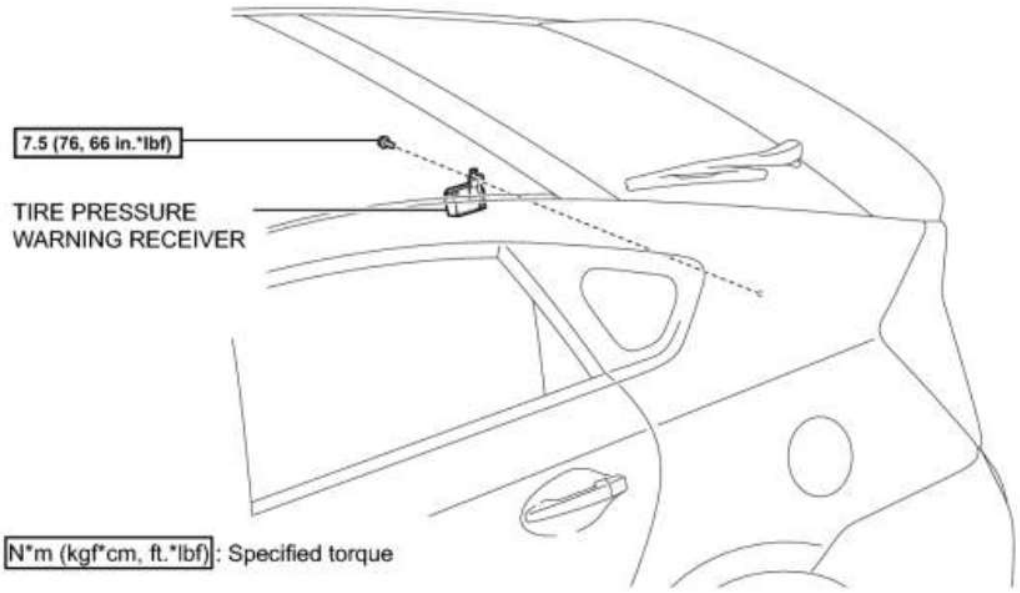
5. INSPECT TIRE PRESSURE WARNING SYSTEM

(a) Inspect the tire pressure warning system INFO.

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COMPONENTS

ILLUSTRATION



c

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REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

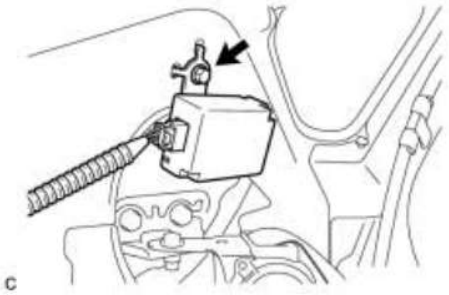
When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

2. REMOVE ROOF SIDE INNER GARNISH ASSEMBLY LH

HINT:

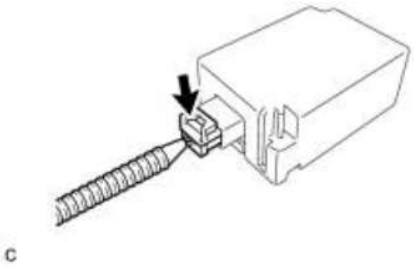
- Refer to the procedures up to Remove Roof Side Inner Garnish Assembly INFO.
- Removal should be performed only for the left side.

3. REMOVE TIRE PRESSURE WARNING RECEIVER



C

(a) Remove the bolt.



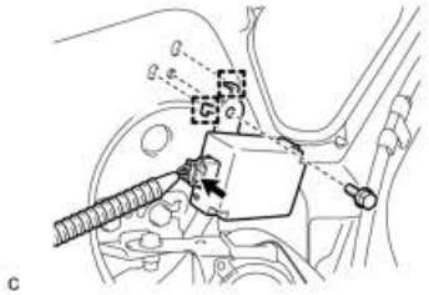
C

(b) Disconnect the connector to remove the tire pressure warning receiver.

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INSTALLATION

1. INSTALL TIRE PRESSURE WARNING RECEIVER



(a) Connect the connector.

(b) Engage the 2 tabs into the holes as shown in the illustration to install the tire pressure warning receiver.

(c) Install the bolt.

Torque: **7.5 N·m (76 kgf·cm, 66in·lbf)**

2. INSTALL ROOF SIDE INNER GARNISH ASSEMBLY LH

HINT:

- Refer to the procedures from Install Roof Side Inner Garnish Assembly INFO.
- Installation should be performed only for the left side.

3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

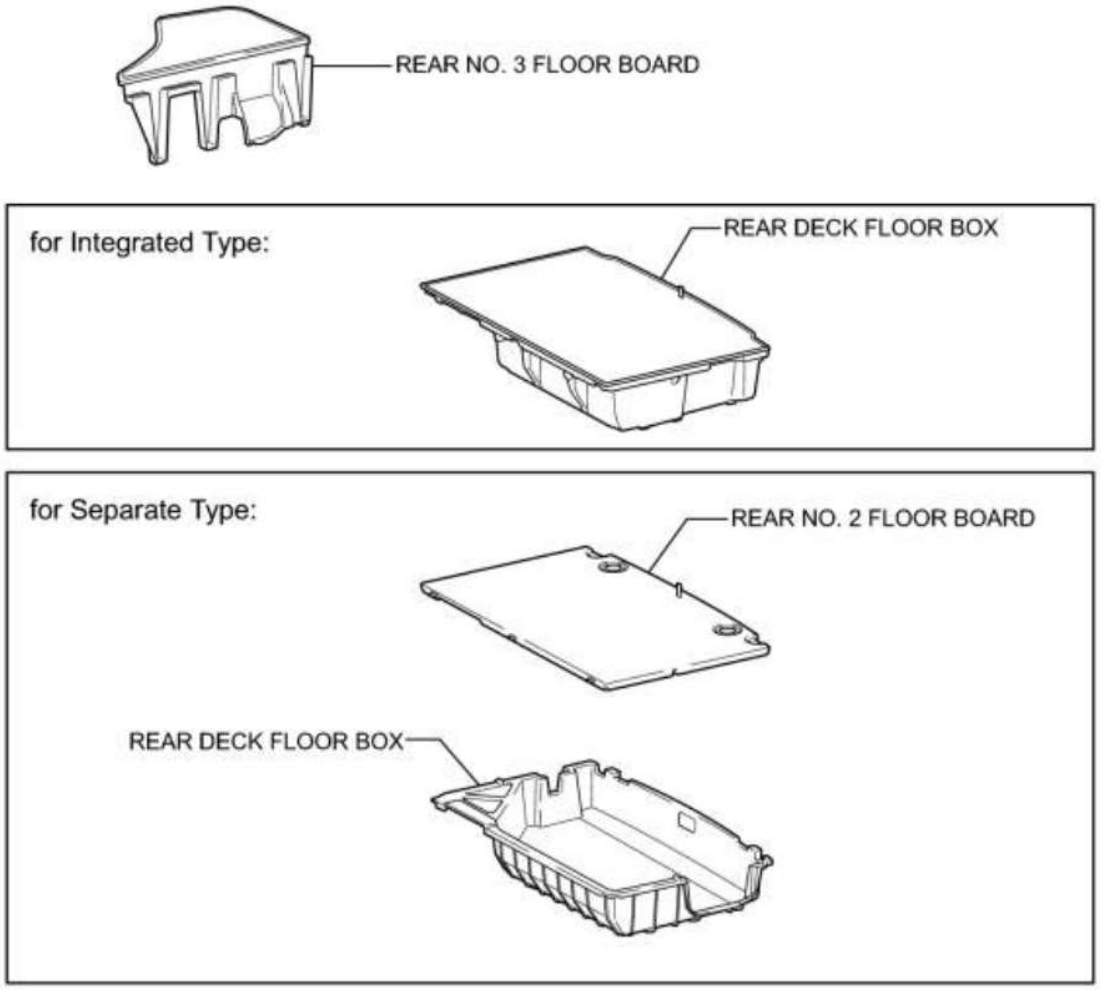
4. INSPECT TIRE PRESSURE WARNING SYSTEM

(a) Inspect the tire pressure warning system INFO.

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COMPONENTS

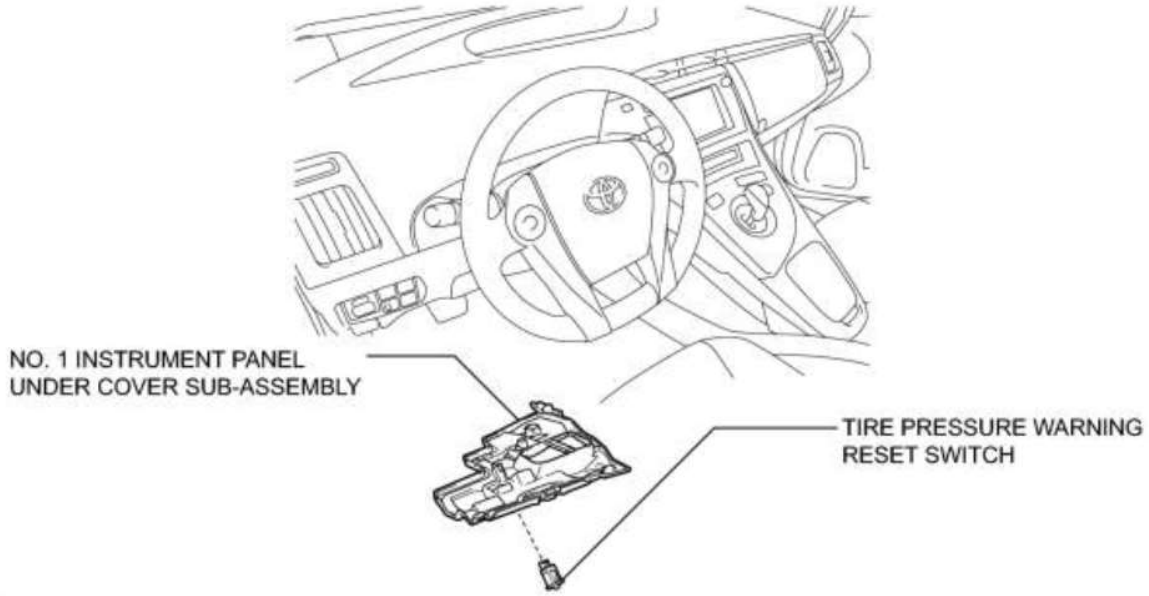
ILLUSTRATION



P

ILLUSTRATION

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c

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REMOVAL

1. REMOVE REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

2. REMOVE REAR DECK FLOOR BOX INFO

3. REMOVE REAR NO. 3 FLOOR BOARD INFO

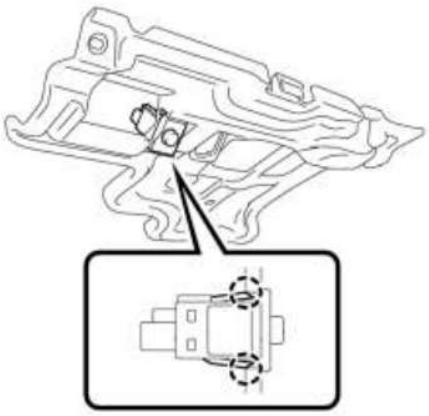
4. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

5. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY INFO

6. REMOVE TIRE PRESSURE WARNING RESET SWITCH



C

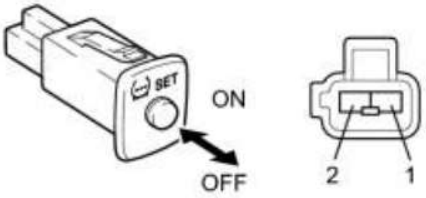
(a) Disengage the 2 claws to remove the tire pressure warning reset switch from the No. 1 instrument panel under cover sub-assembly.

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INSPECTION

1. INSPECT TIRE PRESSURE WARNING RESET SWITCH

Component without harness connected:
(Tire Pressure Warning Reset Switch)



(a) Remove the tire pressure warning reset switch.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

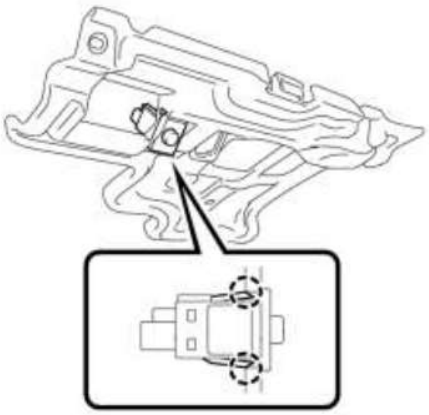
Tester Connection	Switch Condition	Specified Condition
1 - 2	ON	Below 1 Ω
	OFF	10 kΩ or higher

If the result is not as specified, replace the tire pressure warning reset switch.

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INSTALLATION

1. INSTALL TIRE PRESSURE WARNING RESET SWITCH



C

(a) Engage the 2 claws to install the tire pressure warning reset switch to the No. 1 instrument panel under cover sub-assembly.

2. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY INFO

3. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected INFO.

4. INSPECT TIRE PRESSURE WARNING SYSTEM

(a) Inspect the tire pressure warning system INFO.

5. INSTALL REAR NO. 3 FLOOR BOARD INFO

6. INSTALL REAR DECK FLOOR BOX INFO

7. INSTALL REAR NO. 2 FLOOR BOARD (for Separate Type) INFO

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PRECAUTION

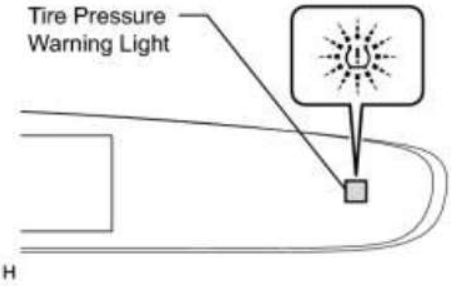
1. PRECAUTION FOR DISCONNECTING THE BATTERY CABLE

NOTICE:

When disconnecting the battery negative (-) cable, initialize the following system after the cable is reconnected:

System	See Procedure
Advanced Parking Guidance System	INFO

2. TIRE PRESSURE WARNING SYSTEM PRECAUTION



(a) When the tire pressure warning light comes on, immediately check the tire pressure of the tire and adjust it to the specified value (The tire pressure warning light will come on after blinking for 1 minute, the system may be malfunctioning. In this case, refer to following troubleshooting to repair the malfunction) INFO.

(b) When the tire pressure warning light comes on after blinking for 1 minute, there is a malfunction in the system. Check for DTCs.

(c) It is necessary to register the transmitter ID in the tire pressure warning ECU after replacing the tire pressure warning valve and transmitter and/or tire pressure warning ECU INFO.

(d) When replacing the tire pressure warning ECU:

(1) Using the Data List, read the transmitter IDs registered in the ECU and make a note of them before removing the tire pressure warning ECU.

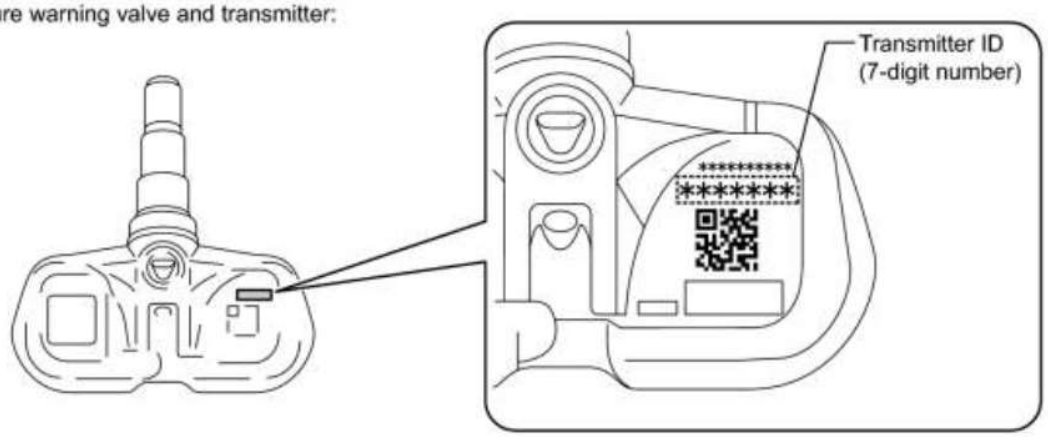
(2) Register the transmitter IDs after installing a new tire pressure warning ECU.

(e) When replacing the tire pressure warning valve and transmitter:

(1) Take a note of the 7-digit number (transmitter ID) written on the new tire pressure warning valve and transmitter when replacing the old one. Register the transmitter IDs in the tire pressure warning ECU after replacing the tire pressure warning valve and transmitter and installing the tires and wheels on the vehicle.

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Tire pressure warning valve and transmitter:



H

NOTICE:

The transmitter ID is written on the tire pressure warning valve and transmitter. It will be unable to be read after installing the tire pressure warning valve and transmitter on the tire and wheel. Therefore, take a note of the transmitter ID before installing the tire pressure warning valve and transmitter.

(f) Tire and wheel replacement or tire rotation:

- After the tires or wheels are replaced with a new tire pressure warning valve and transmitter, it is necessary to register the transmitter IDs.
- It is not necessary to register the transmitter IDs after tire rotation is performed.
- After dropping the tire pressure warning valve and transmitter into the tire, disengage the bead from the wheel.

  NOTICE:

  Be careful not to damage the tire pressure warning valve and transmitter because of interference between the sensor and tire bead.

- The initialization is necessary to reset the warning threshold in accordance with the variant tire pressure settings due to the tire types.

(g) When replacing the tire pressure warning ECU and the tire pressure warning valve and transmitters, it is necessary to perform the initialization INFO after the registration INFO.

(h) Precautions about the tire pressure:

- Tire pressure decreases naturally.
- In winter, tire pressure may decrease due to low ambient temperatures (tire pressure decreases by approximately 10 kPa (0.1 kgf/cm^2, 1.5 psi) for every 10°C (50°F) drop in the ambient temperature).

  Therefore, the tire pressure warning system is more likely to indicate a warning if the tire pressures are not adjusted appropriately. If the daily temperature variation is large, pressurize the tires high so that the tire pressures are suitable under cold conditions. As a result, incorrect tire pressure warning operation should decrease.

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3. IN CASE OF TIRE AND WHEEL REPLACEMENT

(a) When tires and wheels are replaced, always ensure that each transmitter ID is correctly registered.

(b) Before removing the tires from the disc wheels or reinstalling the tires to the disc wheels, be sure to follow the correct procedures for removal and installation of the tire pressure warning valve and transmitter. Failure to do so may cause the tire pressure warning valve and transmitters to break INFO.

4. INITIALIZATION PRECAUTION

(a) Initialize the tire pressure warning system after any of the following is performed:

- Replacing the tire pressure warning ECU and/or the tire pressure warning valve and transmitter
- When rotating tires on vehicles with differing front and rear tire inflation pressures

HINT:

The tire pressure warning system will not operate properly if it is not initialized INFO.

5. FAIL-SAFE FUNCTION

(a) When a system malfunction occurs in the tire pressure warning system, the tire pressure warning light and master warning light comes on after blinking for 1 minute to informs the driver of the system failure.

(b) The result of this diagnosis is stored in the tire pressure warning ECU.

6. CHECK TIRE PRESSURE AFTER REPAIRS

(a) After repairs confirm that the actual tire pressures are displayed in the Data List INFO.

7. REMOVAL AND INSTALLATION OF TIRE PRESSURE WARNING VALVE AND TRANSMITTER

(a) When installing a tire, make sure that the tire pressure warning valve and transmitter does not interfere with the tire bead in order to prevent damage to the tire pressure warning valve and transmitter.

(b) After completing the operation, remove the valve core to rapidly release the air in the tire and check that the warning light comes on. If the warning light does not come on, the system may be defective.

(c) If there is air leakage, tighten the nut to a torque of 4.0 N*m (41 kgf*cm, 35 in.*lbf) and push the valve core 2 or 3 times to remove any dirt attached to the valve core. If air continues to leak, replace the grommet, washer, and nut.

(d) When installing the tire pressure warning valve and transmitter, make sure that the rim, grommet, washer, and nut are clean. Use a manufacturer-specified valve cap.

(e) When putting air into the tire, first install the tire pressure valve straight onto the stem of the tire pressure warning valve and transmitter.

8. TIRE AND WHEEL REPLACEMENT

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(a) To prevent damage to the tire pressure warning valve and transmitter, drop the tire pressure warning valve and transmitter into the tire whenever removing the tire from the wheel.

NOTICE:

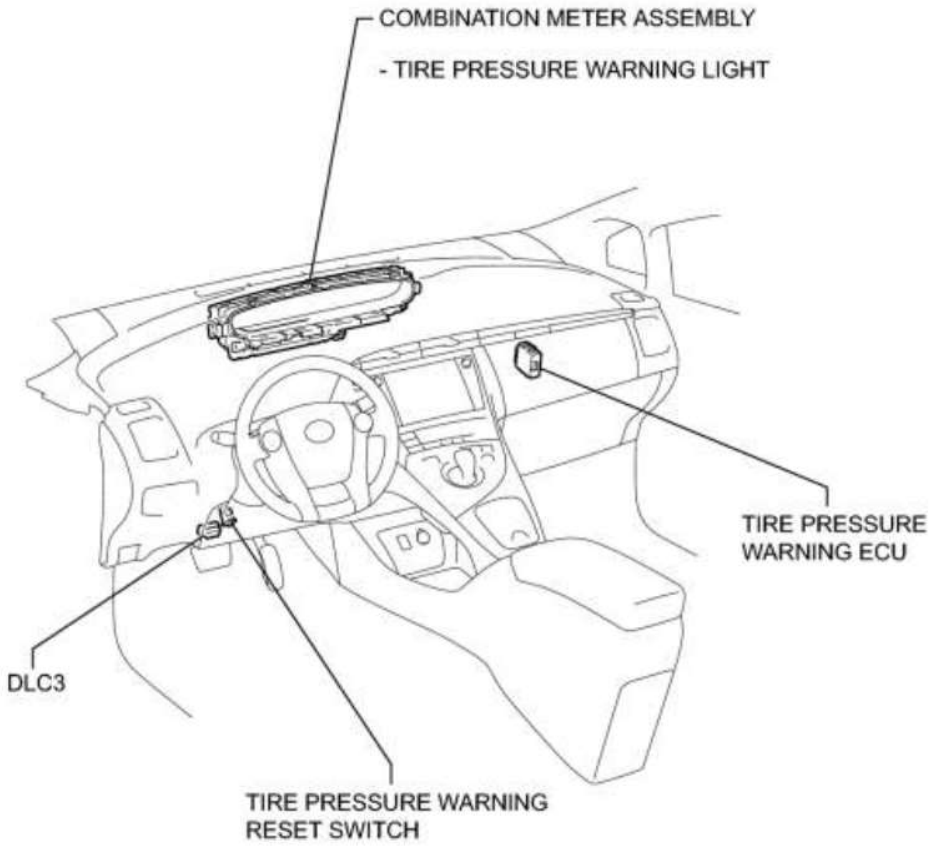
Always use a new grommet, washer and nut when installing the tire pressure warning valve and transmitter.

(b) If tires and wheels are replaced, register the transmitter IDs INFO.

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PARTS LOCATION

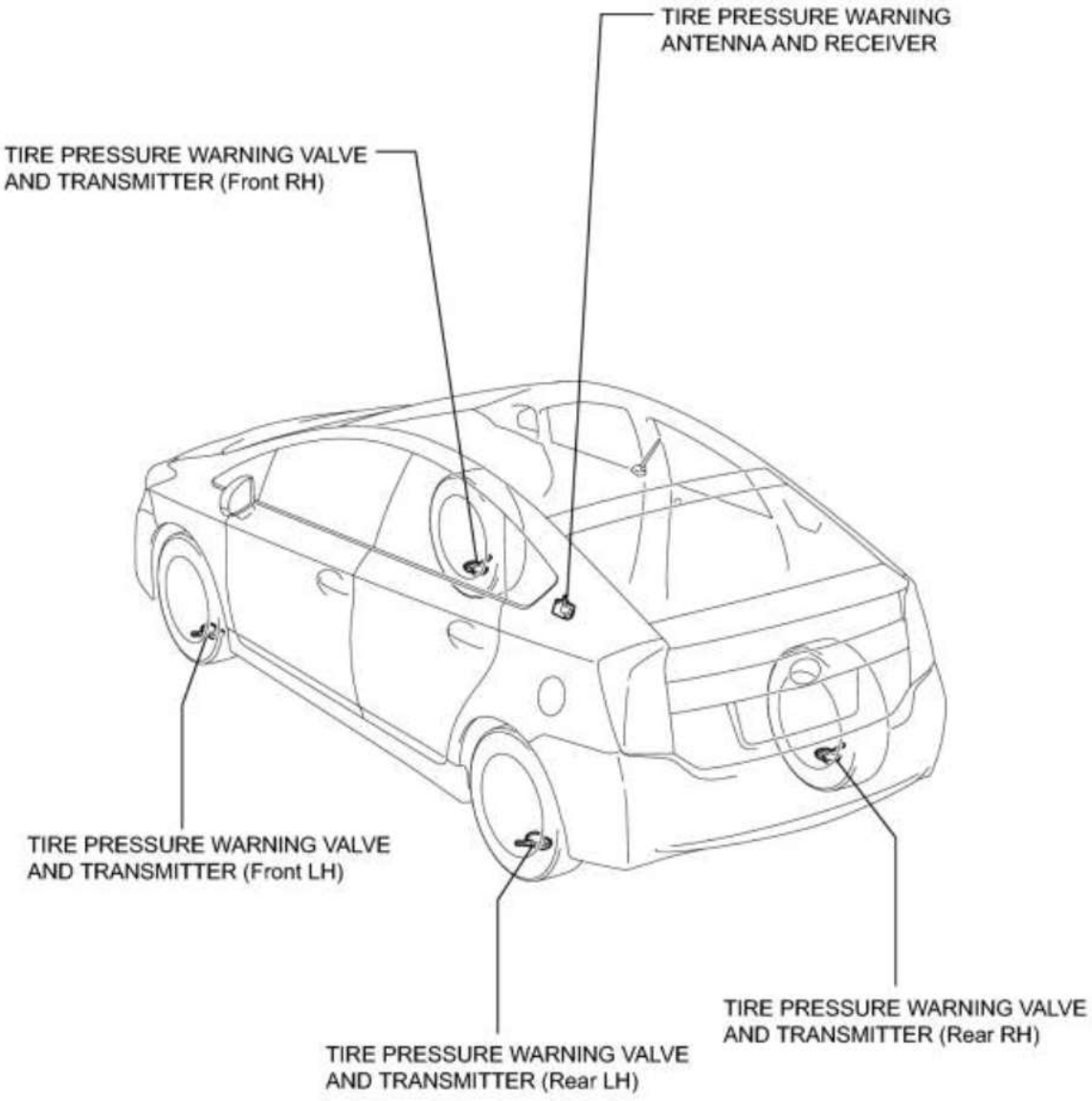
ILLUSTRATION



P

ILLUSTRATION

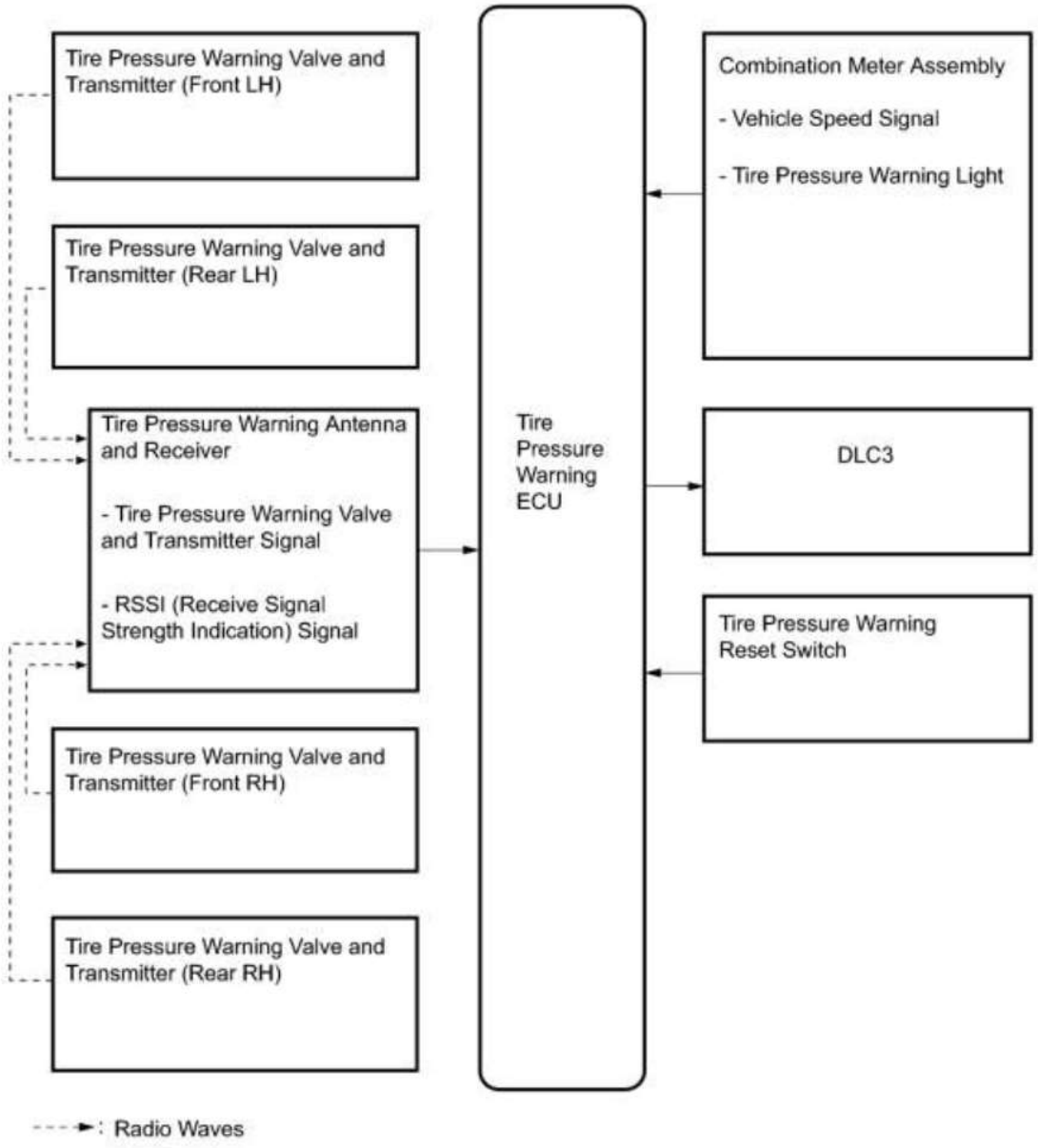
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SYSTEM DIAGRAM



HINT:

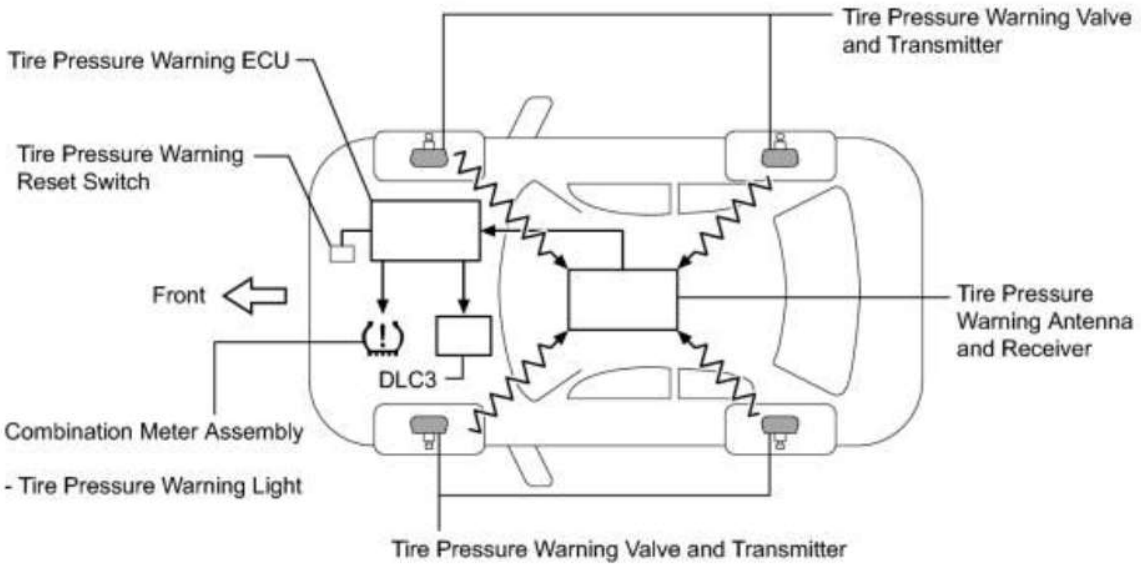
Each tire pressure warning valve and transmitter sends information on the temperature inside the tire, the transmitter ID, and the tire pressure.

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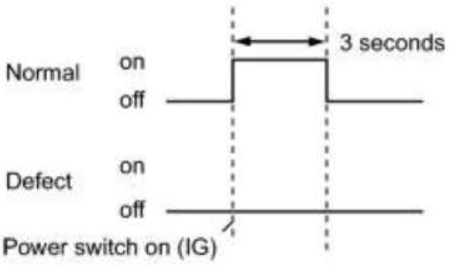
SYSTEM DESCRIPTION

1. DESCRIPTION OF SYSTEM

(a) A tire pressure warning valve and transmitter is equipped with a tire pressure sensor and a transmitter and is installed in each tire and wheel assembly. The sensor measures the tire pressure. The measured value and transmitter ID are transmitted to the tire pressure warning antenna and receiver on the body as radio waves and then sent to the tire pressure warning ECU from the tire pressure warning antenna and receiver. If the transmitter ID has already been registered, the ECU compares the measured air pressure value with the standard value. When the value is less than the standard value registered in the tire pressure warning ECU, the warning light on the combination meter comes on. The tire pressure warning reset switch addresses the differences in the air pressure settings by the type of tires.



2. INITIAL CHECK



(a) After the power switch is turned to on (IG), the tire pressure warning light comes on for 3 seconds and then go off.

HINT:

If the warning light does not come on for 3 seconds, troubleshoot the tire pressure warning light circuit INFO.

3. WHEN TIRE PRESSURE WARNING LIGHT IS LIT

(a) When the tire pressure warning light does not go off, or when it comes on during driving, check the tire pressure. If the tire pressure warning light comes on within several hours of adjusting the tire pressure, the tire may have a slow air leak.

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(b) Under the following conditions, the system may not function properly:

(1) The system will be disabled in the following conditions:

(When the condition becomes normal, the system will work properly.)

- If tires not equipped with the tire pressure warning valve and transmitters are used.
- If the ID code on the tire pressure warning valve and transmitters is not registered in the tire pressure warning ECU.
- If the tire inflation pressure is absolute pressure: 600 kPa (6.0 kgf/cm^2, 87 psi) or more; relative pressure: 500 kPa (5.0 kgf/cm^2, 73 psi) or more.
- If the tire pressure warning valve and transmitter battery voltage drops. (battery life: 10 years)

(2) The system may be disabled in the following conditions:

(When the condition becomes normal, the system will work properly.)

- If electronic devices or facilities using similar radio wave frequencies are nearby.
- If a radio set at similar frequencies is in used in the vehicle.
- If a window tint that affects the radio wave signal is installed.
- If there is a lot of snow or ice on the vehicle, in particular around the wheels or wheel housings.
- If non-genuine wheels are used.
- If tire chains are used.

(c) After removing and installing the ECU or a sensor, check for a diagnostic trouble code and verify that it is a normal system code.

4. FUNCTION OF COMPONENTS

Components	Function
Tire pressure warning valve and transmitter	Combined as a single unit with a disc wheel air valve, it measures tire pressure and temperature and transmits an ID number for measurement value and identification. Built-in the battery.
Tire pressure warning antenna and receiver	Receives and transmits a necessary signal from the transmitters to the tire pressure warning ECU.
Tire pressure warning ECU	Receives a signal from the receiver and identifies it as vehicle's own signal. If the measured value is equal to or lower than the specified value, it transmits a signal to illuminate the tire pressure warning light on the combination meter.
Tire pressure warning light	Located in the combination meter, it informs the driver of lowered tire pressure and system failure.
Tire pressure warning reset switch	Allows entering initialization mode for when the standard pressure is changed

5. TIRE PRESSURE WARNING RESET SWITCH

- By operating the tire pressure warning reset switch, the tire pressure warning ECU can be set to issue a warning at an inflation pressure that corresponds to the standard pressure of tires.

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Therefore, the warning threshold must be set to the proper value in order to comply with the local regulations.

- Operate the tire pressure warning reset switch only after the inflation pressures of all tires have been adjusted on the vehicle.
- To initialize the system, press and hold the tire pressure warning reset switch for 3 seconds or longer with the power switch on (IG). When the system receives the initialization signal, the warning light blinks 3 times (1 second on, 1 second off).
- During initialization, the tire pressure warning valve and transmitter measures the inflation pressure of the tire, and registers the signals that are transmitted into the tire pressure warning ECU at a frequency of once per minute. The initialization process is completed when signals from all the tires have been received. It takes a few minutes.

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HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedures to troubleshoot the tire pressure warning system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP

NEXT

2.	CUSTOMER PROBLEM ANALYSIS

(a) Interview the customer to confirm the trouble.

HINT:

It is important to collect as much specific information as possible from the customer to allow for a quick repair.

NEXT

3.	ADJUST TIRE PRESSURE*

(a) Turn the power switch off.

(b) Set the all tire pressure to the specified value INFO.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Read the "ID Tire Inflation Pressure" values.

(g) Check the Data List INFO.

HINT:

- It takes about 2 or 3 minutes to display the updated tire pressure data.
- If the problem is that the tire pressure decreases, wait until all of the tire pressure data is received by the ECU. If the data is received, the tire pressure warning light will go off.

Result:

Condition	Proceed to
Tire pressure warning light goes off	A
Tire pressure warning light remains on	B

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A ▶ GO TO STEP 9

B ▼

4.	CHECK FOR DTC*

(a) Check for DTCs INFO.

Result:

Result	Proceed to
DTC is output	A
DTC is not output	B

B ▶ GO TO STEP 6

A ▼

5.	DTC CHART

(a) Refer to Diagnostic Trouble Code Chart INFO.

NEXT ▶ **GO TO STEP 7**

6.	PROBLEM SYMPTOMS TABLE

(a) Refer to Problem Symptoms Table INFO.

NEXT ▼

7.	CIRCUIT INSPECTION*

(a) Refer to Electronic Circuit Inspection Procedure INFO.

NEXT ▼

8.	REPAIR OR REPLACE

(a) Repair or replace parts based on the diagnosis result.

NEXT ▼

9.	CONFIRMATION TEST*

(a) Check the Data List to confirm that the tire inflation pressure has been received INFO.

(b) Perform initialization INFO.

(c) Confirm that the initialization has been completed.

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NEXT END

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REGISTRATION

1. DESCRIPTION OF CODE REGISTRATION

It is necessary to register the transmitter ID in the tire pressure warning ECU when replacing the tire pressure warning valve and transmitter and/or tire pressure warning ECU.

Prepare all transmitter ID data before starting registration.

(a) Before registration

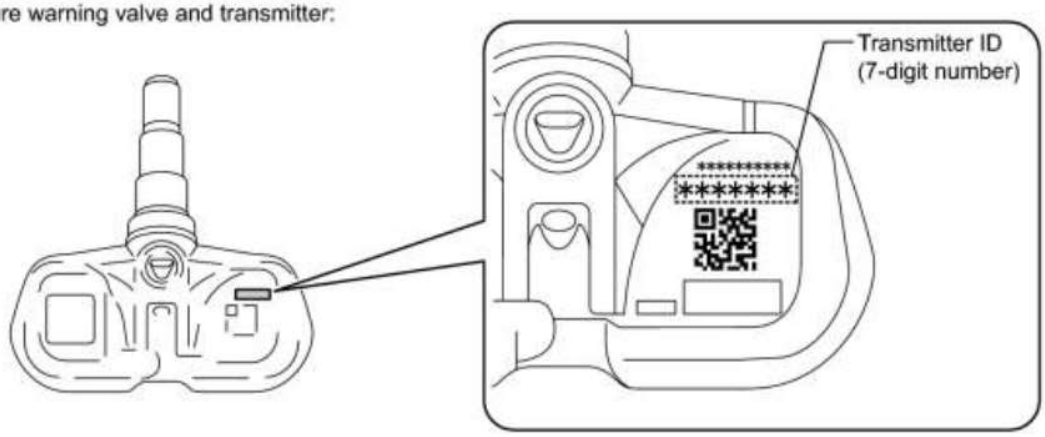
(1) When replacing the tire pressure warning ECU:

- Read the registered transmitter IDs that are stored in the old ECU using the Techstream and note them down.
- If reading stored transmitter IDs is impossible due to malfunctions of components such as the tire pressure warning antenna and receiver, remove the tires from the wheels and check the IDs located on the tire pressure warning valve and transmitters INFO.

(2) When replacing a tire pressure warning valve and transmitter:

- Take note of the 7-digit number (transmitter ID) written on the tire pressure warning valve and transmitter.

Tire pressure warning valve and transmitter:



H

NOTICE:

- The transmitter ID is written on the tire pressure warning valve and transmitter. It will be unable to be read after installing the tire pressure warning valve and transmitter on the tire and wheel. Therefore, take a note of the transmitter ID before installing the tire pressure warning valve and transmitter.
- The ID registration must be performed for all tire pressure warning valve and transmitters. Check the Data List, replace the exchanged ID with a new ID, and make a new DATA LIST of all 4 tires for the vehicle.

2. REGISTER TRANSMITTER ID (Using Techstream)

(a) Set the all tire pressure to the specified value INFO.

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(b) Turn the power switch off.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Utility / ID Registration.

(g) Perform the following procedures displayed on the screen.

(h) Confirmation of transmitter ID registration.

(1) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(2) Read the "ID Tire Inflation Pressure" values.

(3) Confirm that the data of tire pressure of all tires are displayed on the Techstream.

NOTICE:

- It takes about 2 or 3 minutes to display the updated tire pressure data. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121/21 to C2124/24 INFO.
- If the IDs have not been registered, DTC C2171/71 is set in the tire pressure warning ECU after 3 minutes or more.
- If normal pressure values are displayed, the IDs have been registration correctly.
- If the tire pressure values are not displayed after a few minutes, the IDs may be incorrect or the system may have a malfunction.
- After all IDs are registered, DTC C2126/26 (Transmitter ID not Received) is set in the tire pressure warning ECU and the tire pressure warning light blinks for 1 minute and then comes on. When the tire pressure warning ECU successfully receives radio waves from all the transmitters whose IDs are stored in the ECU, DTC C2126/26 is deleted and the tire pressure warning light goes off.

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INITIALIZATION

1. DESCRIPTION OF INITIALIZATION

(a) Perform initialization in the following cases:

- Before delivery of a new vehicle.
- After replacement of the tire pressure warning ECU*.
- After replacement of any of the tire pressure warning valve and transmitters*.

*: Perform initialization after the transmitter ID registration is completed INFO.

(b) Before initialization

(1) Set the all tire pressure to the specified value INFO.

NOTICE:

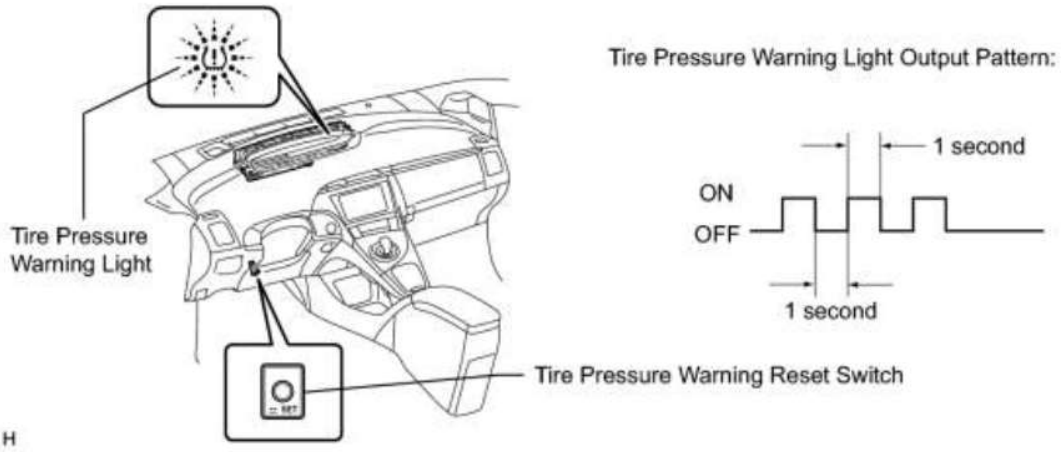
Make sure the tires are cooled down.

2. INITIALIZATION PROCEDURE

(a) Adjust all tire (except spare tire) to the standard tire inflation pressure, as indicated on the tire and loading information label on the vehicle.

(b) Turn the power switch on (IG).

(c) Push and hold the tire pressure warning reset switch for 3 seconds or more so that the tire pressure warning light blinks 3 times.



(d) Turn the power switch off.

(e) Connect the Techstream to the DLC3.

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(f) Turn the power switch on (IG).

(g) Turn the Techstream on.

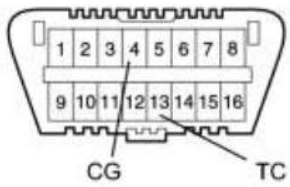
(h) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(i) Check that the initialization has been completed.

(j) Confirm that the tire pressure data of all wheels are displayed on the Techstream.

- The initialization is normally completed within 2 or 3 minutes.
- If the initialization has not been completed successfully, DTC C2177/77 is set after a vehicle speed 8 km/h (5 mph) or more continues for 20 minutes or more.
- The initialization can be terminated by connecting terminals TC and CG of the DLC3.

Front View of DLC3:



T

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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	pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

- The initialization is completed when the "ID Tire Information Pressure" display shows the correct pressures.
- *: It may take about 2 or 3 minutes until the values are displayed. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121/21 to C2124/24 INFO.

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TEST MODE PROCEDURE

1. ENTER TEST MODE

HINT:

- Operation of the tire pressure warning reset switch can be checked in TEST MODE.
- During TEST MODE, the system is not initialized by pushing the tire pressure warning reset switch. The circuit of the tire pressure warning reset switch can be inspected during this mode.

(a) Turn the power switch off.

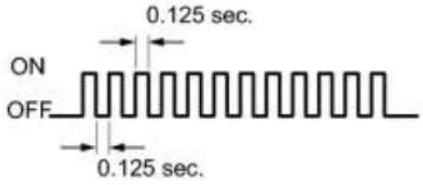
(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Check that the tire pressure warning light comes on for 3 seconds and then goes off.

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Utility / Signal Check.



(g) Confirm that the tire pressure warning light in the combination meter blinks at 0.125 second intervals.

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2. PERFORM SIGNAL CHECK

HINT:

- When entering signal check mode, the tire pressure warning ECU sets all the signal check DTCs first.

  After completing signal check for each inspection item, the DTCs for systems that are determined to be normal by the tire pressure warning ECU will be cleared.

  The DTCs for other inspection items may not be cleared when only a certain signal is inspected.

- When signal check returns to normal mode, all the signal check DTCs will be cleared.

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

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(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Utility / Signal Check.

HINT:

Every time the test mode DTC clear conditions are satisfied, the tire pressure warning light comes on for 1 second. Then, the tire pressure warning light blinks at 0.125 second intervals.

(f) Turn the power switch on (IG) and wait for 3 seconds or more to check the RSSI signal (C2196/96).

(g) Drive the vehicle at 20 km/h (12 mph) or more for 3 seconds or more to check the vehicle speed signal (C2191/91).

(h) Loosen the valve core and rapidly reduce the pressure (at least 40 kPa (0.4 kg/cm^2, 5.8 psi) within 30 seconds or more) to check the transmitter data (C2181/81 to C2184/84).

HINT:

The transmitter ID can be transmitted by rapidly reducing the tire pressure.

(i) Check that the tire pressure warning system test mode DTCs are cleared.

Test Mode DTC	Test Signal	Test Mode DTC Clear Condition
C2181/81 to C2184/84	Transmitter Data	Data is received from the transmitter which has a registered ID in the tire pressure warning ECU
C2191/91	Vehicle Speed Signal	Vehicle speed of 20 km/h (12 mph) or more is detected for 3 seconds or more
C2196/96	RSSI Signal	RSSI signal between 49 mV and 4.95 V is received for 3 seconds or more

(j) Check the tire pressure warning reset switch.

(1) Press the tire pressure warning reset switch.

(2) Check the tire pressure warning light.

Test Signal	Normal Condition
Tire Pressure Warning Reset Switch	• Switch ON: Tire pressure warning light comes on • Switch OFF: Tire pressure warning light blinks at 0.125 sec. intervals

(k) Result

HINT:

After the signal check is completed, check for a signal check DTC to confirm the system status.

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Condition	Procedure
Test mode DTC is output	Repair the faulty part and enter SIGNAL CHECK again
Test mode DTCs are cleared	No problem

(l) End of SIGNAL CHECK

(1) After completing the test mode (SIGNAL CHECK), turn the power switch off and disconnect the Techstream.

(m) DTC of SIGNAL CHECK (TEST DIAGNOSIS)

(1) If a trouble code is displayed during the test mode DTC check, check the circuit listed for that code. For details of each code, refer to the "See Procedure" below.

DTC No.	Detection Item	Trouble Area	See Procedure
C2181/81	Transmitter ID1 not received	• Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU	INFO
C2182/82	Transmitter ID2 not received	• Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU	INFO
C2183/83	Transmitter ID3 not received	• Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU	INFO
C2184/84	Transmitter ID4 not received	• Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU	INFO
C2191/91	Vehicle speed signal error	• Vehicle speed sensor • Combination meter assembly • Wire harness or connector • Tire pressure warning ECU	INFO
C2196/96	RSSI signal error	• Tire pressure warning antenna and receiver • Harness or connector • Tire pressure warning ECU	INFO

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PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

Tire Pressure Warning System

Symptom	Suspected Area	See page
Tire pressure warning light does not illuminate, despite tire pressure decreasing	Initialization	INFO
	Check Data List (ID Tire Inflation Pressure)	INFO
	ID code check (Registration)	INFO
Tire pressure warning light remains illuminated (Goes off during initial check)	ECU power source circuit	INFO
	Tire pressure warning light circuit	INFO
Tire pressure warning light remains illuminated (Comes on during initial check)	Check Data List (ID Tire inflation pressure)	INFO
	Tire pressure warning light circuit	INFO
	ID code check (Registration)	INFO
	Initialization	INFO
Initialization cannot be done	Tire pressure warning reset switch	INFO
DTC check cannot be done	ECU power source circuit	INFO
	TC and CG terminal circuit	INFO

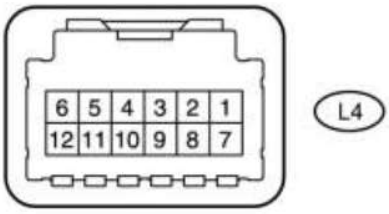
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TERMINALS OF ECU

1. CHECK TIRE PRESSURE WARNING ECU

HINT:

Inspect the connectors from the back side while the connectors are connected.



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(a) Disconnect the R2 tire pressure warning antenna and receiver connector.

(b) Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L4-12 (RDA) - Body ground	B - Body ground	Tire pressure warning antenna and receiver signal	Power switch on (IG)	11 to 14 V

(c) Connect the R2 tire pressure warning antenna and receiver connector.

(d) Measure the voltage and resistance according to the value(s) in the table below. If the result is not as specified, the ECU may have a malfunction.

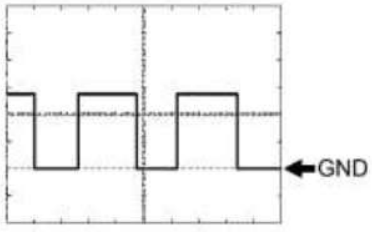
Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L4-1 (CLSW) - Body ground	Y -Body ground	Tire pressure warning reset switch	• Power switch on (IG) • Tire pressure warning reset switch ON	8.5 to 15 V
			• Power switch on (IG) • Tire pressure warning reset switch OFF	Below 1.5 V
L4-2 (SPD) - Body ground	V - Body ground	Vehicle speed signal	Vehicle running	Pulse generation (see waveform 1)
L4-3 (TC) - Body ground	L - Body ground	TC terminal	Terminal TC not connected	11 to 14 V

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Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L4-4 (TACH) - Body ground	L - Body ground	RSSI (receive signal strength indication) signal	Power switch on (IG)	Pulse generation (see waveform 2)
L4-5 (IND) - Body ground	G - Body ground	Tire pressure warning light output signal	• Power switch on (IG) • Tire pressure warning light OFF	Below 0.5 V
		Tire pressure warning reset switch	After turning power switch on (IG), tire pressure warning light illuminates for 3 seconds	0.9 to 3.2 V
L4-6 (RF5V) - Body ground	R - Body ground	Tire pressure warning antenna and receiver power source	Power switch on (IG)	11 to 14 V
L4-7 (IG) - Body ground	B - Body ground	IG power source	Power switch on (IG)	11 to 14 V
L4-9 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
L4-10 (SIL) - Body ground	P - Body ground	Diagnostic communication	Power switch on (IG)	8 to 14 V
L4-11 (GND2) - Body ground	G - Body ground	Tire pressure warning antenna and receiver ground	Always	Below 1 Ω

(e) Using an oscilloscope, check the waveform 1.

Waveform 1:



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Item	Contents
Terminal	L4-2 (SPD) - Body ground
Tool setting	5 V/DIV, 20 ms./DIV.
Vehicle condition	Driving at approximately 20 km/h (12 mph)

HINT:

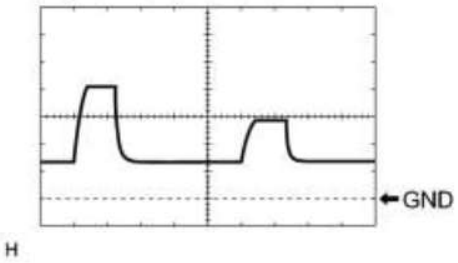
The wavelength becomes shorter as the vehicle speed increases.

(f) Using an oscilloscope, check the waveform 2.

Waveform 2:

Item	Contents
Terminal	L4-4 (TACH) - Body ground
Tool setting	0.5 V/DIV., 10 ms./DIV.

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Vehicle condition	Power switch on (IG)

HINT:

The shape of waves like figure appears approximately 2 times every 3 minutes.

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DIAGNOSIS SYSTEM

1. CHECK BATTERY VOLTAGE

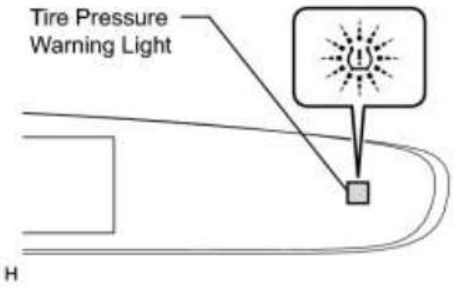
Standard voltage:

11 to 14 V

If the voltage is below 11 V, recharge the battery before proceeding to the next step.

2. CHECK DLC3 INFO

3. DIAGNOSIS SYSTEM



(a) Warning light

(1) When there is a problem with the tire pressure warning system, the tire pressure warning light blinks at 0.5 second intervals, and comes on after 1 minute.

NOTICE:

When the malfunction has been corrected, the tire pressure warning light does not come on.

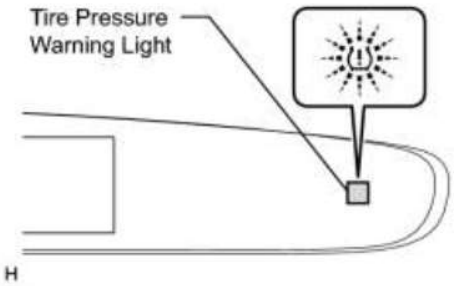
(b) DTCs (Normal mode)

(1) DTCs are memorized in the tire pressure warning ECU and read by the blinks of the tire pressure warning light or by using the Techstream INFO.

(c) Test mode

(1) By switching from normal mode into test mode (input signal check), you can inspect the tire pressure warning antenna and receiver, each tire pressure warning valve and transmitter, RSSI signal and vehicle speed sensor INFO.

4. CHECK TIRE PRESSURE WARNING LIGHT



(a) Turn the power switch on (IG).

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(b) Check that the tire pressure warning light comes on for 3 seconds.

If the warning check result is not normal, proceed to troubleshooting for the tire pressure warning light circuit INFO.

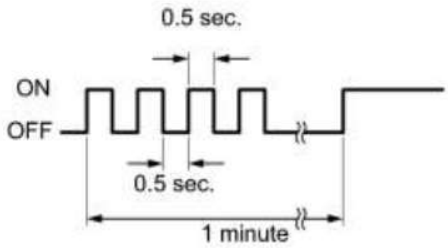
5. TIRE PRESSURE WARNING LIGHT CHART

HINT:

The table below indicates the state of the tire pressure warning light after the power switch is turned on (IG).

	Immediately after turning the power switch on(IG)	Always						
		Warning light output pattern						
	Comes on for 3 sec.	Goes off	Comes on	Blinks for 1 minute and then illuminates*1	Blinks*2	Blinks*3	Blinks*4	Outputs DTC
Normal	○	○	-	-	-	-	-	-
Low tire pressure	○	-	○	-	-	-	-	-
System fail	○	-	-	○	-	-	-	-
Test mode	○	-	-	-	○	-	-	-
Initialization	○	-	-	-	-	○	-	-
ECU connector poorly connected	-	-	-	○ *5	-	-	-	-
TC ground (DTC is output)	○	-	-	-	-	-	-	○
TC ground (DTC is not output)	○	-	-	-	-	-	○	-

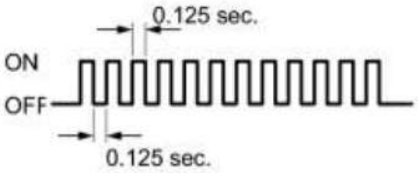
- *1: Comes on and goes off repeatedly at 0.5 second intervals, and stays on after 1 minute.



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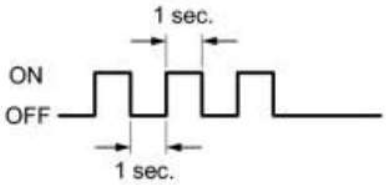
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- *2: Comes on and goes off repeatedly at 0.125 second intervals.



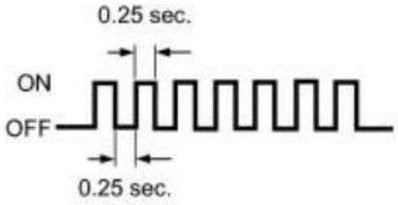
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- *3: Blinks 3 times (1 second on, 1 second off).

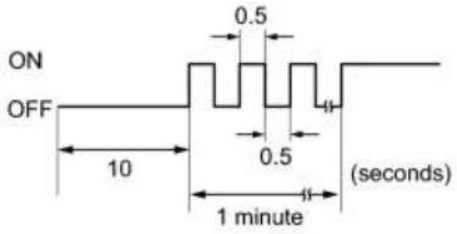


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- *4: Comes on and goes off repeatedly at 0.25 second intervals.



- *5: When determining if there is a short circuit (10 seconds), the light goes off. Then it blinks at 0.5 second intervals, and stays on after 1 minute.

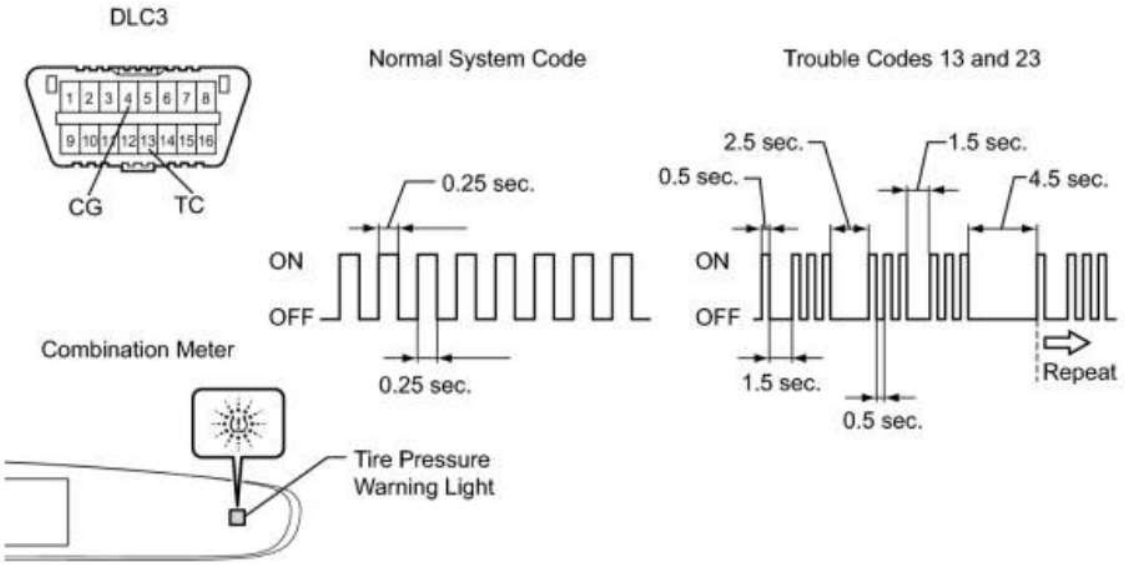


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DTC CHECK / CLEAR

1. DTC CHECK (USING SST CHECK WIRE)

(a) Turn the power switch off.



(b) Using SST, connect terminals 13 (TC) and 4 (CG) of the DLC3.

SST: 09843-18040

(c) Turn the power switch on (IG).

(d) Read and record any DTCs from the tire pressure warning light on the combination meter. Refer to the illustration as examples of the normal system code and codes 13 and 23.

HINT:

- If the tire pressure warning light does not indicate any DTCs or the normal system code, inspect the tire pressure warning light circuit or TC and CG terminal circuit.

Trouble Area	See Procedure
Tire pressure warning light circuit	INFO
TC and CG terminal circuit	INFO

- If 2 or more malfunctions are indicated at the same time, the lowest numbered DTC is displayed first.

(e) Refer to Diagnostic Trouble Code Chart INFO for DTC information.

(f) After completing the check, turn the power switch off and remove SST from the DLC3.

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SST: 09843-18040

2. DTC CHECK (USING TECHSTREAM)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.

(f) Read the DTCs following the prompts on the Techstream.

HINT:

Refer to the Techstream operator's manual for further details.

3. CLEAR DTC

HINT:

After repairing the malfunctions, clear the DTCs.

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.

(f) Clear the DTCs following prompts on the Techstream.

HINT:

Refer to the Techstream operator's manual for further details.

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DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) According to the display on the Techstream, read the Data List.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Mode Status	Tire pressure warning system mode/ NORMAL or TEST	NORMAL: Normal mode TEST: Test mode	-
Main Tire	Number of main tire ID to be registered/ 0 or 1 or 2 or 3 or 4	0 to 4 displayed	-
Vehicle Speed	Vehicle speed reading/ min.: 0 km/h (0 mph), max.: 255 km/h (158 mph)	Actual vehicle speed	Speed indicated on the combination meter
Registered ID1 Code	Registered ID1 code/ min.: 0, max.: FFFFFFF*1	ID No. registered in transmitter ID1 displayed	-
Registered ID2 Code	Registered ID2 code/	ID No. registered in transmitter ID2	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	min.: 0, max.: FFFFFFF*1	displayed	
Registered ID3 Code	Registered ID3 code/ min.: 0, max.: FFFFFFF*1	ID No. registered in transmitter ID3 displayed	-
Registered ID4 Code	Registered ID4 code/ min.: 0, max.: FFFFFFF*1	ID No. registered in transmitter ID4 displayed	-
ID Transmission Status	ID code transmission status/ FINISH or NOW	FINISH or NOW	-
Initialization Switch	Tire pressure warning reset switch/ ON, OFF	ON: Switch on OFF: Switch off	-
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*2
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*2
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*2

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	kgf/cm^2, 78 psi)		
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*2
ID1 Temperature in Tire	ID1 temperature in tire/ min.: -40°C (-40°F), max.: 215°C (419°F)	Actual tire temperature	If -40°C (-40°F) is displayed, data has not been received.
ID2 Temperature in Tire	ID2 temperature in tire/ min.: -40°C (-40°F), max.: 215°C (419°F)	Actual tire temperature	If -40°C (-40°F) is displayed, data has not been received.
ID3 Temperature in Tire	ID3 temperature in tire/ min.: -40°C (-40°F), max.: 215°C (419°F)	Actual tire temperature	If -40°C (-40°F) is displayed, data has not been received.
ID4 Temperature in Tire	ID4 temperature in tire/ min.: -40°C (-40°F), max.: 215°C (419°F)	Actual tire temperature	If -40°C (-40°F) is displayed, data has not been received.
ID1 Battery Voltage	ID1 battery voltage/OVER or LESS	OVER	-
ID2 Battery Voltage	ID2 battery voltage/OVER or LESS	OVER	-
ID3 Battery Voltage	ID3 battery voltage/OVER or LESS	OVER	-
ID4 Battery Voltage	ID4 battery voltage/OVER or LESS	OVER	-
Initialization Switch Info	Tire pressure warning reset switch setting information/ WITH or WITHOUT	WITH	-
ID1 Initial Threshold of Low-pressure	ID1 initial threshold of low-pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative	Tire pressure after initialization	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		
ID2 Initial Threshold of Low-pressure	ID2 initial threshold of low-pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Tire pressure after initialization	-
ID3 Initial Threshold of Low-pressure	ID3 initial threshold of low-pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Tire pressure after initialization	-
ID4 Initial Threshold of Low-pressure	ID4 initial threshold of low-pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Tire pressure after initialization	-
Number of Trouble Code	Number of DTCs recorded/min.: 0, max.: 255	Min.: 0, Max.: -	-

HINT:

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*1: Displayed only when the ID No. is not registered.

*2: It may take about 2 or 3 minutes until the values are displayed. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121/21 to C2124/24 INFO.

2. Active Test

Using the Techstream to perform Active Tests allows the relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in trouble shooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Body Electrical / Combination Meter / Active Test.

(f) Check the operation by referring to the table below.

Combination Meter

Tester Display	Test Part	Control Range	Diagnostic Note
Indicat. Tire Pressure Warning System	Tire pressure warning light	Tire pressure warning light OFF or ON	Confirm that the vehicle is stopped, engine idling

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DIAGNOSTIC TROUBLE CODE CHART

HINT:

If a trouble code is displayed during the DTC check, inspect the circuit listed for that code. For details of each code, refer to the relevant page listed under respective "DTC Code" in the DTC chart.

Tire Pressure Warning System

DTC Code	Detection Item	Trouble Area	See page
C2111/11	Transmitter ID1 Operation Stop	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2112/12	Transmitter ID2 Operation Stop	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2113/13	Transmitter ID3 Operation Stop	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2114/14	Transmitter ID4 Operation Stop	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2121/21	No Signal from Transmitter ID1	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2122/22	No Signal from Transmitter ID2	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2123/23	No Signal from Transmitter ID3	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and	INFO

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DTC Code	Detection Item	Trouble Area	See page
		receiver 3. Wire harness or connector 4. Tire pressure warning ECU	
C2124/24	No Signal from Transmitter ID4	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2126/26	Transmitter ID not Received in Main Mode	1. ID registration failure 2. Tire pressure warning valve and transmitter 3. Tire pressure warning antenna and receiver 4. Wire harness or connector 5. Tire pressure warning ECU	INFO
C2141/41	Transmitter ID1 Error	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2142/42	Transmitter ID2 Error	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2143/43	Transmitter ID3 Error	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2144/44	Transmitter ID4 Error	1. Tire pressure warning valve and transmitter 2. Tire pressure warning ECU	INFO
C2165/65	Abnormal Temperature Inside ID1 Tire	1. Tires 2. Tire pressure warning valve and transmitter	INFO

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DTC Code	Detection Item	Trouble Area	See page
		3. Tire pressure warning ECU	
C2166/66	Abnormal Temperature Inside ID2 Tire	1. Tires 2. Tire pressure warning valve and transmitter 3. Tire pressure warning ECU	INFO
C2167/67	Abnormal Temperature Inside ID3 Tire	1. Tires 2. Tire pressure warning valve and transmitter 3. Tire pressure warning ECU	INFO
C2168/68	Abnormal Temperature Inside ID4 Tire	1. Tires 2. Tire pressure warning valve and transmitter 3. Tire pressure warning ECU	INFO
C2171/71	Transmitter ID not Registered	Tire pressure warning ECU	INFO
C2175/75	Vehicle Speed or RSSI Signal Error	1. Combination meter 2. Tire pressure warning valve and transmitter 3. Tire pressure warning antenna and receiver 4. Wire harness or connector 5. Tire pressure warning ECU	INFO
C2176/76	Receiver Error	Tire pressure warning ECU	INFO
C2177/77	Initialization not Completed	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2181/81	Transmitter ID1 not Received (Test Mode DTC)	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and	INFO

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DTC Code	Detection Item	Trouble Area	See page
		receiver 3. Wire harness or connector 4. Tire pressure warning ECU	
C2182/82	Transmitter ID2 not Received (Test Mode DTC)	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2183/83	Transmitter ID3 not Received (Test Mode DTC)	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2184/84	Transmitter ID4 not Received (Test Mode DTC)	1. Tire pressure warning valve and transmitter 2. Tire pressure warning antenna and receiver 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2191/91	Vehicle Speed Signal Error (Test Mode DTC)	1. Vehicle speed sensor 2. Combination meter assembly 3. Wire harness or connector 4. Tire pressure warning ECU	INFO
C2196/96	RSSI Signal Error (Test Mode DTC)	1. Tire pressure warning antenna and receiver 2. Wire harness or connector 3. Tire pressure warning ECU	INFO

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DTC	C2111/11	Transmitter ID1 Operation Stop
DTC	C2112/12	Transmitter ID2 Operation Stop
DTC	C2113/13	Transmitter ID3 Operation Stop
DTC	C2114/14	Transmitter ID4 Operation Stop

DESCRIPTION

The tire pressure warning valve and transmitters that are installed in the tire and wheel assemblies measure the tire pressures. The measured values are transmitted to the tire pressure warning antenna and receiver on the body as radio waves and then sent to the tire pressure warning ECU. The ECU compares the measured air pressure values with the air pressure threshold. When the measured air pressure value is less than this threshold, the warning light in the combination meter comes on. The tire pressure warning ECU stores a DTC when the tire pressure warning valve and transmitter stops transmitting signals. At this time, forcibly transmit the signals by releasing the tire pressure rapidly. The stored DTC is cleared when the signal transmission is resumed.

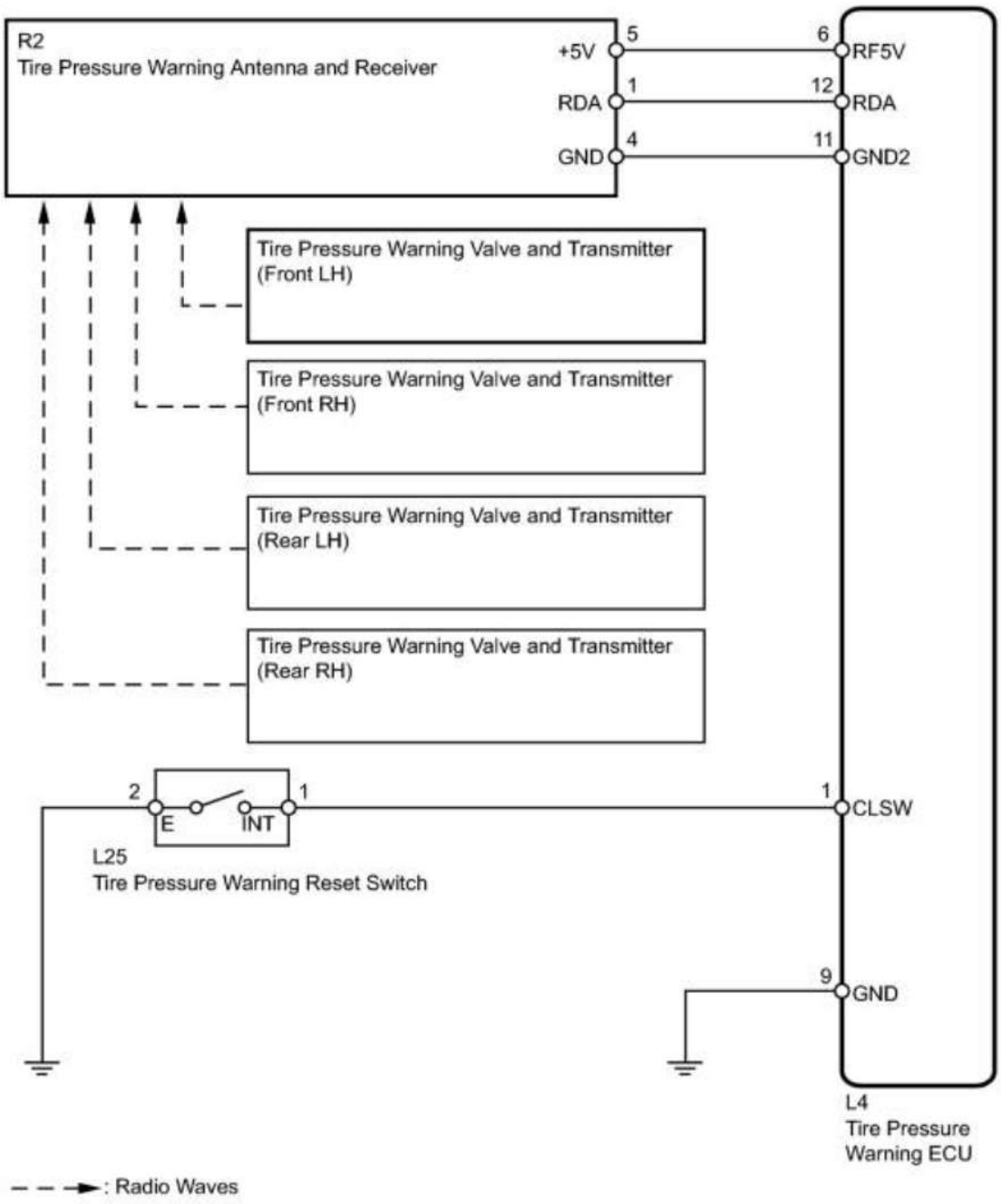
DTC No.	DTC Detection Condition	Trouble Area
C2111/11 C2112/12 C2113/13 C2114/14	Tire pressure warning valve and transmitters stop transmitting signals	• Tire pressure warning valve and transmitter • Tire pressure warning ECU

HINT:

It is necessary to perform the procedure to identify the tire pressure warning valve and transmitter that is malfunctioning because it cannot be identified by the output DTC.

WIRING DIAGRAM

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INSPECTION PROCEDURE

PROCEDURE

1.	PERFORM FORCED TRANSMISSION OF TRANSMITTER ID OF ALL WHEELS

(a) Set the tire pressure to the specified value INFO.

(b) Turn the power switch off.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(g) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation	ID4 tire inflation pressure /	Actual tire inflation	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Pressure	min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	pressure	14 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take about 2 or 3 minutes until the values are displayed. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121/21 to C2124/24 INFO.

(h) Rapidly release the tire pressure for each wheel at least 40 kPa (0.4 kgf/cm^2, 5.8 psi) within 30 seconds.

(1) Check that each tire pressure data displayed on the Techstream has changed.

OK:

Each tire pressure data displayed on the Techstream will change to the value of the tire pressure.

NOTICE:

- It takes about 2 or 3 minutes to display the updated tire pressure data.
- When the "ID Tire Inflation Pressure" data has not changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

(2) After confirming that all of the tire pressure data displayed on the Techstream have changed, set the tire pressure to the appropriate specified values.

HINT:

If the tire pressure data displayed on the Techstream has not changed after rechecking, inspect for another problem INFO.

NG ▶ GO TO TRANSMITTER AND RECEIVER INSPECTION PROCEDURE

OK ▶ **END**

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DTC	C2121/21	No Signal from Transmitter ID1
DTC	C2122/22	No Signal from Transmitter ID2
DTC	C2123/23	No Signal from Transmitter ID3
DTC	C2124/24	No Signal from Transmitter ID4
DTC	C2181/81	Transmitter ID1 not Received (Test Mode DTC)
DTC	C2182/82	Transmitter ID2 not Received (Test Mode DTC)
DTC	C2183/83	Transmitter ID3 not Received (Test Mode DTC)
DTC	C2184/84	Transmitter ID4 not Received (Test Mode DTC)

DESCRIPTION

The tire pressure warning valve and transmitters that are installed in the tire and wheel assemblies measure the tire pressures. The measured values are transmitted to the tire pressure warning antenna and receiver on the body as radio waves and then sent to the tire pressure warning ECU. The ECU compares the measured air pressure values with the air pressure threshold. When the measured air pressure value is less than this threshold, the warning light in the combination meter comes on.

The tire pressure warning valve and transmitters constantly send radio waves to the tire pressure warning antenna and receiver.

Under the conditions below, the tire pressure warning antenna and receiver is unable to receive the signals from the tire pressure warning valve and transmitters, and a DTC is stored.

- Facilities or devices that use similar radio frequencies are located in the vicinity of the vehicle.
- Devices using similar radio frequencies are used in the vehicle.
- The ID of the tire pressure warning valve and transmitter is mistyped during registration.
- A tire/wheel/transmitter from a different vehicle is installed.

HINT:

When no transmitter ID is received from a tire pressure warning valve and transmitter for a total of 20 minutes while the vehicle speed is more than 8 km/h (5 mph) or no transmitter ID is received from all the tire pressure warning valve and transmitters for a total of 20 minutes, DTCs are set.

DTCs from C2121/21 to C2124/24 can only be cleared by using the Techstream. DTCs from C2181/81 to C2184/84 can be cleared when the transmitter in the tire pressure warning valve and transmitter sends a forced transmission signal or test mode ends. DTCs from C2181/81 to C2184/84 are output only in test mode.

DTC No.	DTC Detection Condition	Trouble Area
C2121/21 C2122/22 C2123/23 C2124/24	Following condition (a) or (b) is met: (a) When all conditions below are met: • Tire pressure warning valve and transmitter is not in stop mode. • Any transmitter ID is not received from tire pressure warning valve and transmitters.	• Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU

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DTC No.	DTC Detection Condition	Trouble Area
	• For 20 minutes or more, vehicle speed is more than 8 km/h (5 mph) or no vehicle speed signal or RSSI signal is received. (b) When all conditions below are met: • Tire Pressure warning valve and transmitter is not in stop mode. • No transmitter ID is received from tire pressure warning valve and transmitters for 20 minutes or more.	
C2181/81 C2182/82 C2183/83 C2184/84	Test mode procedure is performed.	• Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU

NOTICE:

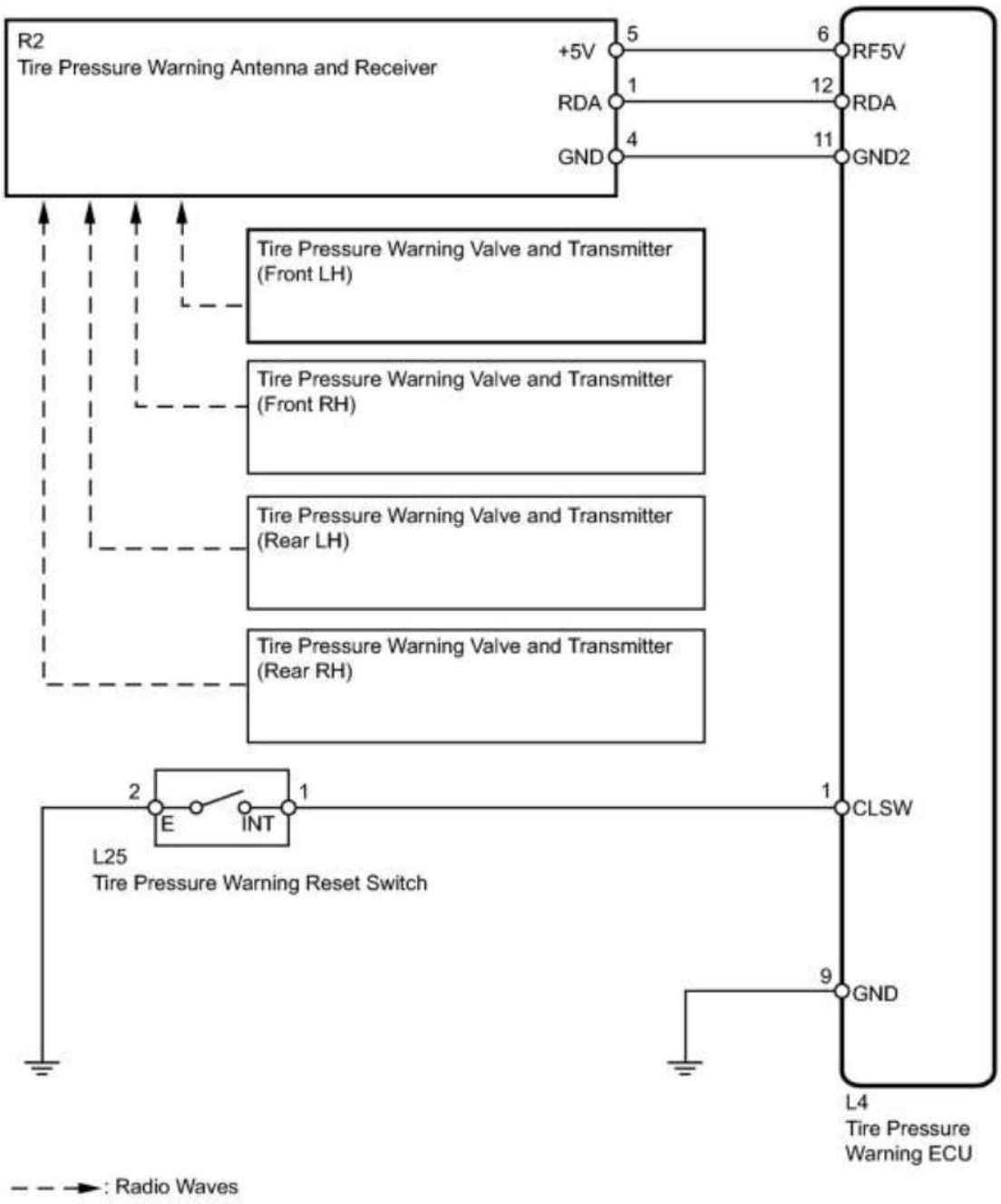
When DTCs C2121/21 to C2124/24 are set, DTC C2175/75 may be set simultaneously. In such cases, troubleshoot DTCs C2121/21 to C2124/24 first, then troubleshoot DTC C2175/75.

HINT:

It is necessary to perform the procedure to identify the tire pressure warning valve and transmitter that is malfunctioning because it cannot be identified by the output DTC.

WIRING DIAGRAM

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INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.

- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU and/or any of the valve and transmitters have been replaced.

PROCEDURE

1.	CHECK FREQUENCY RECEIVING CONDITION

(a) Check that the vehicle is not located in an area such as described below:

(1) Facilities or devices that use similar radio frequencies are located in the vicinity of the vehicle.

HINT:

If the vehicle is located in area described above, the tire pressure warning light may come on only in a particular area.

(2) Devices using similar radio frequencies are used in the vehicle.

OK:

Facilities, or devices that use similar radio frequencies are not located in the vicinity of the vehicle.

HINT:

Radio transmissions may be interrupted due to the surroundings or devices installed by the user.

NG ▶ CHECK IF ANY DEVICE IS INSTALLED BY USER

OK

▼

2.	IDENTIFY TRANSMITTER CORRESPONDING TO DTC

(a) Set the tire pressure to the specified values INFO.

(b) Turn the power switch off.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(g) Check the values by referring to the table below.

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Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take about 2 or 3 minutes until the values are displayed.

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kg/cm^2, 5.8 psi) within 30 seconds.

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(i) Check the Data List.

NOTICE:

- It takes about 2 or 3 minutes to display the updated tire pressure data.
- When the "ID Tire Inflation Pressure" data has not changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.
- Record the transmitter ID of which "ID Tire Inflation Pressure" data corresponds to each tire.

(j) After confirming that the "ID Tire Inflation Pressure" data for one tire (ID1 to ID4) has changed, repeat this procedure one by one. Identify the transmitter that corresponds to the DTC.

Result:

Result	Proceed to
One or more of transmitters abnormal	A
All normal	B
All abnormal	C

B ▶ END

A ▶ CHECK TRANSMITTER ID

C

▼

3.	CHECK HARNESS AND CONNECTOR (ECU - RECEIVER)

(a) Disconnect the L4 ECU connector.

(b) Disconnect the R2 receiver connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L4-12 (RDA) - R2-1 (RDA)	Always	Below 1 Ω
L4-11 (GND2) - R2-4 (GND)		
L4-6 (RF5V) - R2-5 (+5V)		
L4-12 (RDA) - Body ground		10 kΩ or higher
L4-11 (GND2) - Body ground		
L4-6 (RF5V) - Body ground		

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

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4.	CHECK TRANSMITTER ID

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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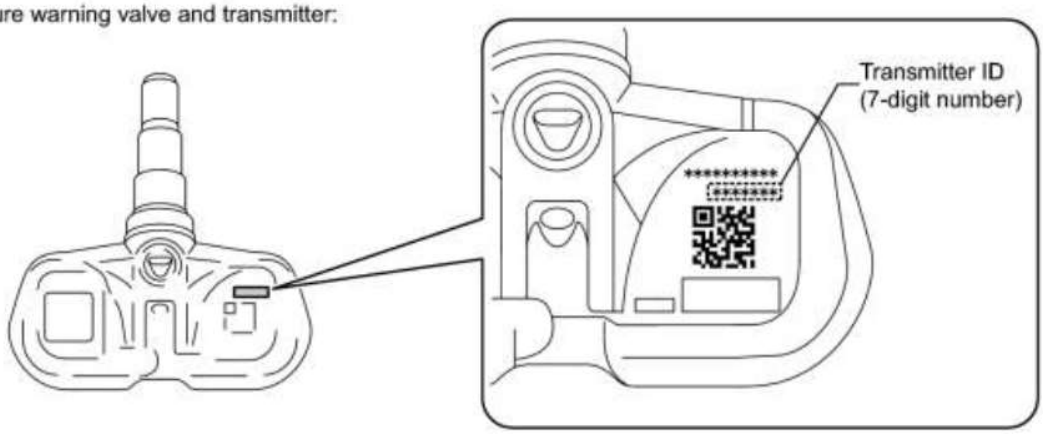
Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: Displayed only when the ID No. is not registered.

(g) Check the ID number on the identified transmitter by removing it from the tire and wheel.

Tire pressure warning valve and transmitter:



H

(h) Confirm that the ID number on the transmitter and recorded transmitter ID match.

Result:

Result	Proceed to
Match	A
Do not match	B

B ▶ REGISTRATION OF TRANSMITTER ID

A

▼

5.	REPLACE TIRE PRESSURE WARNING VALVE AND TRANSMITTER

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(a) Replace the tire pressure warning valve and transmitter INFO.

NEXT

6.	REGISTRATION OF TRANSMITTER ID

(a) Perform registration INFO.

NEXT

7.	PERFORM INITIALIZATION

(a) Perform initialization INFO.

NEXT

8.	READ VALUE USING TECHSTREAM (DATA LIST)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

Result:

Result	Proceed to
All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

A ▶ END

B

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9.	REPLACE TIRE PRESSURE WARNING ANTENNA AND RECEIVER

(a) Replace the tire pressure warning antenna and receiver INFO.

NEXT

10.	READ VALUE USING TECHSTREAM (DATA LIST)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation	ID3 tire inflation pressure /	Actual tire inflation	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Pressure	min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	pressure	14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

Result:

Result	Proceed to
All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

B ▶ REPLACE TIRE PRESSURE WARNING ECU

A ▶ **END**

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DTC	C2126/26	Transmitter ID not Received in Main Mode

DESCRIPTION

After all IDs are registered, DTC C2126/26 is set in the tire pressure warning ECU and the tire pressure warning light blinks for 1 minute and then comes on.

When the tire pressure waning ECU successfully receives radio waves from all the transmitters whose IDs are stored in the ECU, DTC C2126/26 is cleared and the tire pressure warning light goes off.

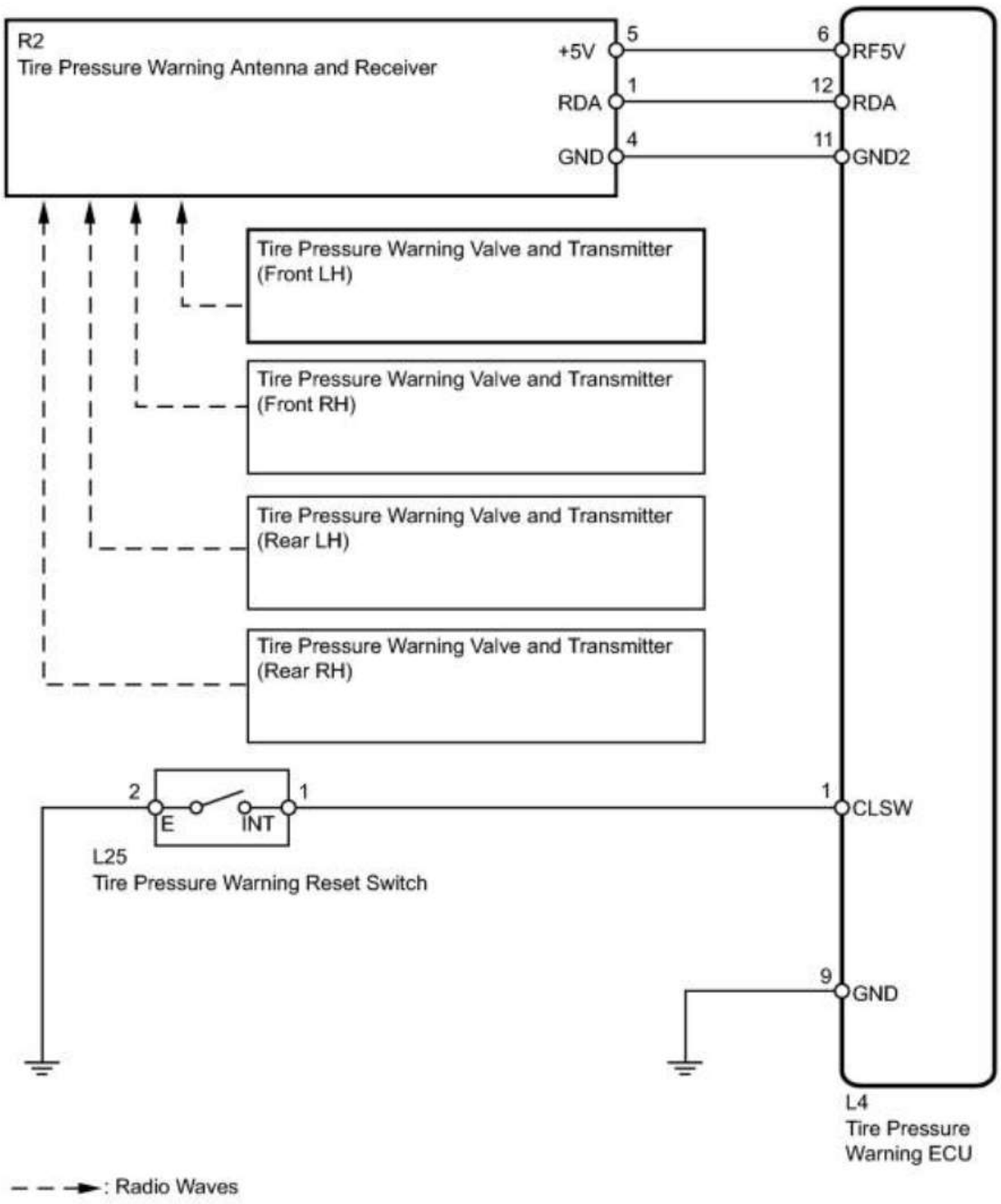
DTC No.	DTC Detection Condition	Trouble Area
C2126/26	After ID registration is completed, ECU does not receive radio waves from transmitters whose IDs are stored in ECU.	• ID registration failure • Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU

HINT:

If the IDs stored in the tire pressure warning ECU differ from the transmitter IDs, DTC C2126/26 is set. Check that the IDs in the ECU are the same as the transmitter IDs.

WIRING DIAGRAM

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INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.

- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU and/or valve and transmitter has been replaced.

PROCEDURE

1.	IDENTIFY TRANSMITTER NOT RECEIVED

(a) Set the tire pressure to the specified values INFO.

(b) Turn the power switch off.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(g) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure /	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	-100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take about 2 or 3 minutes until the values are displayed.

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kgf/cm^2, 5.8 psi) within 30 seconds.

(i) Check the Data List.

NOTICE:

- It takes about 2 or 3 minutes to display the updated tire pressure data.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.
- Record the "ID Tire Inflation Pressure" data transmitter ID that corresponds to each tire.

(j) After confirming that the "ID Tire Inflation Pressure" data for one tire (ID1 to ID4) has changed, repeat this procedure one by one. Identify the transmitter not received.

Result:

Condition	Proceed to
One or more of transmitters abnormal	A
All normal	B

B ▶ END

A

▼

2.	CHECK TRANSMITTER ID

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(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Display	Normal Condition	Diagnostic Note
Registered ID1 Code	Registered ID1 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID1 displayed	-
Registered ID2 Code	Registered ID2 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID2 displayed	-
Registered ID3 Code	Registered ID3 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID3 displayed	-
Registered ID4 Code	Registered ID4 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID4 displayed	-

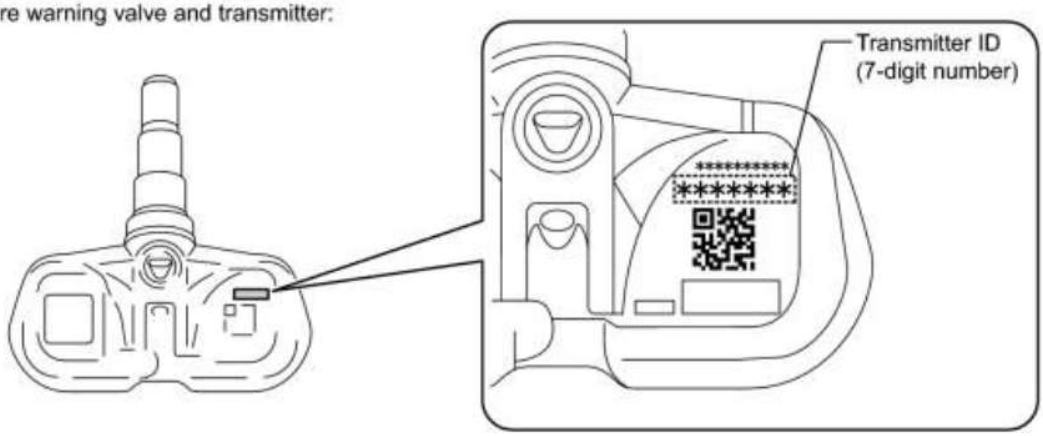
HINT:

*: Displayed only when the ID No. is not registered.

(g) Check the ID number on the identified transmitter by removing it from the tire and wheel.

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Tire pressure warning valve and transmitter:



H

(h) Confirm that the ID number on the transmitter and recorded transmitter ID match.

Result:

Result	Proceed to
Match	A
Do not match	B

B ▶ REGISTRATION OF TRANSMITTER ID

A

▼

3.	REPLACE TIRE PRESSURE WARNING VALVE AND TRANSMITTER

(a) Replace the tire pressure warning valve and transmitter INFO.

NEXT

▼

4.	REGISTRATION OF TRANSMITTER ID

(a) Perform registration INFO.

NEXT

▼

5.	PERFORM INITIALIZATION

(a) Perform initialization INFO.

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NEXT

6.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)

(a) Turn the power switch off.

(b) Connect Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

Result:

Result	Proceed to
Tire pressure values are not displayed.	A
All tire pressure readings are equal to specified values.	B

B ▶ END

A

▼

7.	REPLACE TIRE PRESSURE WARNING ANTENNA AND RECEIVER

(a) Replace the tire pressure warning antenna and receiver INFO.

NEXT

▼

8.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

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(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

Result:

Result	Proceed to
All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

B REPLACE TIRE PRESSURE WARNING ECU

A **END**

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DTC	C2141/41	Transmitter ID1 Error
DTC	C2142/42	Transmitter ID2 Error
DTC	C2143/43	Transmitter ID3 Error
DTC	C2144/44	Transmitter ID4 Error

DESCRIPTION

The tire pressure warning valve and transmitters that are installed in the tire and wheel assemblies measure the tire pressures. The measured values are transmitted to the tire pressure warning antenna and receiver on the body as radio waves and then sent to the tire pressure warning ECU. The ECU compares the measured air pressure values with the air pressure threshold. When the measured air pressure value is less than this threshold, the warning light in the combination meter comes on.

When the internal circuit of the tire pressure warning valve and transmitter is malfunctioning, one of these DTCs is output.

DTC No.	DTC Detection Condition	Trouble Area
C2141/41 C2142/42 C2143/43 C2144/44	If an "ERROR" signal is received 3 times consecutively, the tire pressure warning valve and transmitter will be judged as defective and a DTC will be output. This will happen in situations where the inflation pressure is outside the range -100 to 538 kPa (-1.0 to 5.4 kgf/cm^2, -14 to 78 psi), the temperature inside the tire is outside the specified range -40 to 120°C (-40 to 253°F), or an error occurs in the tire pressure warning valve and transmitter or the surrounding area.	• Tire pressure warning valve and transmitter • Tire pressure warning ECU

HINT:

It is necessary to perform the procedure to identify the tire pressure warning valve and transmitter that is malfunctioning because it cannot be identified by the output DTC.

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU and/or any of the valve and transmitters have been replaced.

PROCEDURE

1.	IDENTIFY TRANSMITTER CORRESPONDING TO DTC

(a) Set the tire pressure to the specified value INFO.

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(b) Turn the power switch off.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(g) Display the "ID Tire Inflation Pressure" data for each wheel using the Techstream.

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kg/cm^2, 5.8 psi) within 30 seconds. If "ID Tire Inflation Pressure" displayed on the Techstream (ID1 to ID4) does not change, the tire pressure warning valve and transmitter corresponding to the unchanged "ID Tire Inflation Pressure" data was the cause of the output DTC.

HINT:

- Identify the malfunctioning tire pressure warning valve and transmitter by repeatedly decreasing the tire pressure for each tire.
- Record which "ID Tire Inflation Pressure" data (ID1 to ID4) corresponds to each tire.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure /	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	-100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take about 2 or 3 minutes until the values are displayed. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121/21 to C2124/24 INFO.

(i) Check the Data List.

Result:

Result	Detection Condition
One of "ID Tire Inflation Pressure" data (ID1 to ID4) changed.	Normal
"ID Tire Inflation Pressure" data did not change.	Transmitter corresponding to DTC

NOTICE:

- When the "ID Tire Inflation Pressure" data has not changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.
- Record the transmitter IDs and positions of transmitters that are normal.

(j) When the "ID Tire inflation Pressure" data (ID1 to ID4) has changed, repeat this procedure to identify the tire pressure warning valve and transmitter that corresponds to the DTC.

(k) When all of the "ID Tire Inflation Pressure" data (ID1 to ID4) have changed, identify the malfunctioning tire pressure warning valve and transmitter using the recorded ID numbers and output DTCs.

NEXT

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2.	REPLACE TIRE PRESSURE WARNING VALVE AND TRANSMITTER

(a) Replace the identified tire pressure warning valve and transmitter with a new one INFO.

HINT:

- Before installing a new tire pressure warning valve and transmitter, read and write down its transmitter ID.
- The IDs for the tire pressure warning valve and transmitters which are not replaced should be checked using the Techstream and recorded.

NEXT



3.	REGISTRATION OF TRANSMITTER ID

(a) Register the transmitter ID for all wheels INFO.

NEXT



4.	PERFORM INITIALIZATION

(a) Perform initialization INFO.

NEXT



5.	READ VALUE USING TECHSTREAM

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

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Result:

Result	Proceed to
Tire pressure values are not displayed.	A
All tire pressure readings are equal to specified values.	B

B ▶ END

A ▶ **REPLACE TIRE PRESSURE WARNING ECU**

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DTC	C2165/65	Abnormal Temperature Inside ID1 Tire
DTC	C2166/66	Abnormal Temperature Inside ID2 Tire
DTC	C2167/67	Abnormal Temperature Inside ID3 Tire
DTC	C2168/68	Abnormal Temperature Inside ID4 Tire

DESCRIPTION

Each tire pressure warning valve and transmitter measures the internal temperature of its tire as well as tire pressure, and transmits the information to the tire pressure warning ECU along with the transmitter ID. If the measured temperature is out of the specified range, the tire pressure warning ECU recognizes it as a malfunction, outputs DTCs, and the tire pressure warning light blinks for 1 minute and then remains on.

DTC No.	DTC Detection Condition	Trouble Area
C2165/65 C2166/66 C2167/67 C2168/68	Temperature inside the tire exceeds 119°C (246.2°F).	• Tires • Tire pressure warning valve and transmitter • Tire pressure warning ECU

HINT:

It is necessary to perform the procedure to identify the tire pressure warning valve and transmitter that is malfunctioning because it cannot be identified by the output DTC.

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU and/or any of the valve and transmitters have been replaced.

PROCEDURE

1.	CHECK TIRES

(a) Check that the tires are not flat, and there is no indication of air pressure drop.

OK:

The tires are normal.

HINT:

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If a tire is damaged, the tire pressure warning valve and transmitter may also have been damaged at the same time.

NG ▶ REPLACE TIRE AND TIRE PRESSURE WARNING VALVE AND TRANSMITTER

OK

▼

2.	IDENTIFY TRANSMITTER CORRESPONDING TO DTC

(a) Set the tire pressure to the specified value INFO.

(b) Turn the power switch off.

(c) Connect the Techstream to the DLC3.

(d) Turn the power switch on (IG).

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(g) Display the "ID Tire Inflation Pressure" data for each wheel using the Techstream.

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kg/cm^2, 5.8 psi) within 30 seconds.

(i) Check the Data List.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take about 2 or 3 minutes until the values are displayed. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121/21 to C2124/24 INFO.

Result:

Result	Detection Condition
One of "ID Tire Inflation Pressure" data (ID1 to ID4) changed.	Normal
No "ID Tire Inflation Pressure" data changed.	Transmitter corresponding to DTC

NOTICE:

- It may take about 2 to 3 minutes to display the updated data.
- When the "ID Tire Inflation Pressure" data has not changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck the data.
- Record the transmitter IDs and transmitter positions that are normal.

(j) When the "ID Tire Inflation Pressure" data (ID1 to ID4) has changed, repeat this procedure to identify the tire pressure warning valve and transmitter that corresponds to the DTC.

(k) When all of the "ID Tire Inflation Pressure" data (ID1 to ID4) have changed, identify the malfunctioning tire pressure warning valve and transmitter based on the recorded ID numbers and output DTC.

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NEXT

▼

3.	REPLACE TIRE PRESSURE WARNING VALVE AND TRANSMITTER

(a) Replace the identified tire pressure warning valve and transmitter with a new one INFO.

HINT:

- Before installing a new tire pressure warning valve and transmitter, read and write down its transmitter ID.
- The IDs for the tire pressure warning valve and transmitters which are not replaced should be checked using the Techstream and recorded.

NEXT

▼

4.	CHECK REGISTRATION OF TRANSMITTER ID

(a) Register the transmitter IDs for 4 tires INFO.

NEXT

▼

5.	PERFORM INITIALIZATION

(a) Perform initialization INFO.

NEXT

▼

6.	READ VALUE USING TECHSTREAM (DATA LIST)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

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Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

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Result:

Result	Proceed to
Tire pressure values are not displayed.	A
All tire pressure readings are equal to specified values.	B

B ▶ END

A ▶ **REPLACE TIRE PRESSURE WARNING ECU**

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DTC	C2171/71	Transmitter ID not Registered

DESCRIPTION

The IDs of each tire pressure warning valve and transmitter are registered to the tire pressure warning ECU.

When the ECU detects that transmitter ID code is not registered in the ECU, a DTC is output.

DTC No.	DTC Detection Condition	Trouble Area
C2171/71	Transmitter ID code is not registered. (When an ID code is unregistered for 3 minutes or more)	Tire pressure warning ECU

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU has been replaced.

PROCEDURE

1.	CONFIRM REGISTRATION CONDITION (REGISTERED ID CODES)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Registered ID1 code	Registered ID1 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID1 displayed	-

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Registered ID2 code	Registered ID2 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID2 displayed	-
Registered ID3 code	Registered ID3 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID3 displayed	-
Registered ID4 code	Registered ID4 code/ min.: 0 max.: FFFFFFF*	ID No. registered in transmitter ID4 displayed	-

HINT:

*: Displayed only when the ID No. is not registered.

OK:

The registered transmitter ID codes are displayed on the Techstream.

NG ▶ PERFORM REGISTRATION (TRANSMITTER ID)

OK ▶ **REPLACE TIRE PRESSURE WARNING ECU**

2.	PERFORM REGISTRATION (TRANSMITTER ID)

(a) Register the transmitter IDs for all the wheels INFO.

NEXT

▼

3.	PERFORM INITIALIZATION

(a) Perform initialization INFO.

NEXT

▼

4.	READ VALUE USING TECHSTREAM (DATA LIST)

(a) Turn the power switch off.

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(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
	max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)		

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

Result:

Result	Proceed to
All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

B ▶ REPLACE TIRE PRESSURE WARNING ECU

A ▶ **END**

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DTC	C2175/75	Vehicle Speed or RSSI Signal Error

DESCRIPTION

The tire pressure warning ECU receives a vehicle speed signal from the combination meter assembly and a RSSI signal from the tire pressure warning antenna and receiver. The tire pressure warning ECU uses these signals to detect DTCs C2121/21 to C2124/24 (No Signal from Transmitter) and DTC C2177/77 (Initialization not Completed).

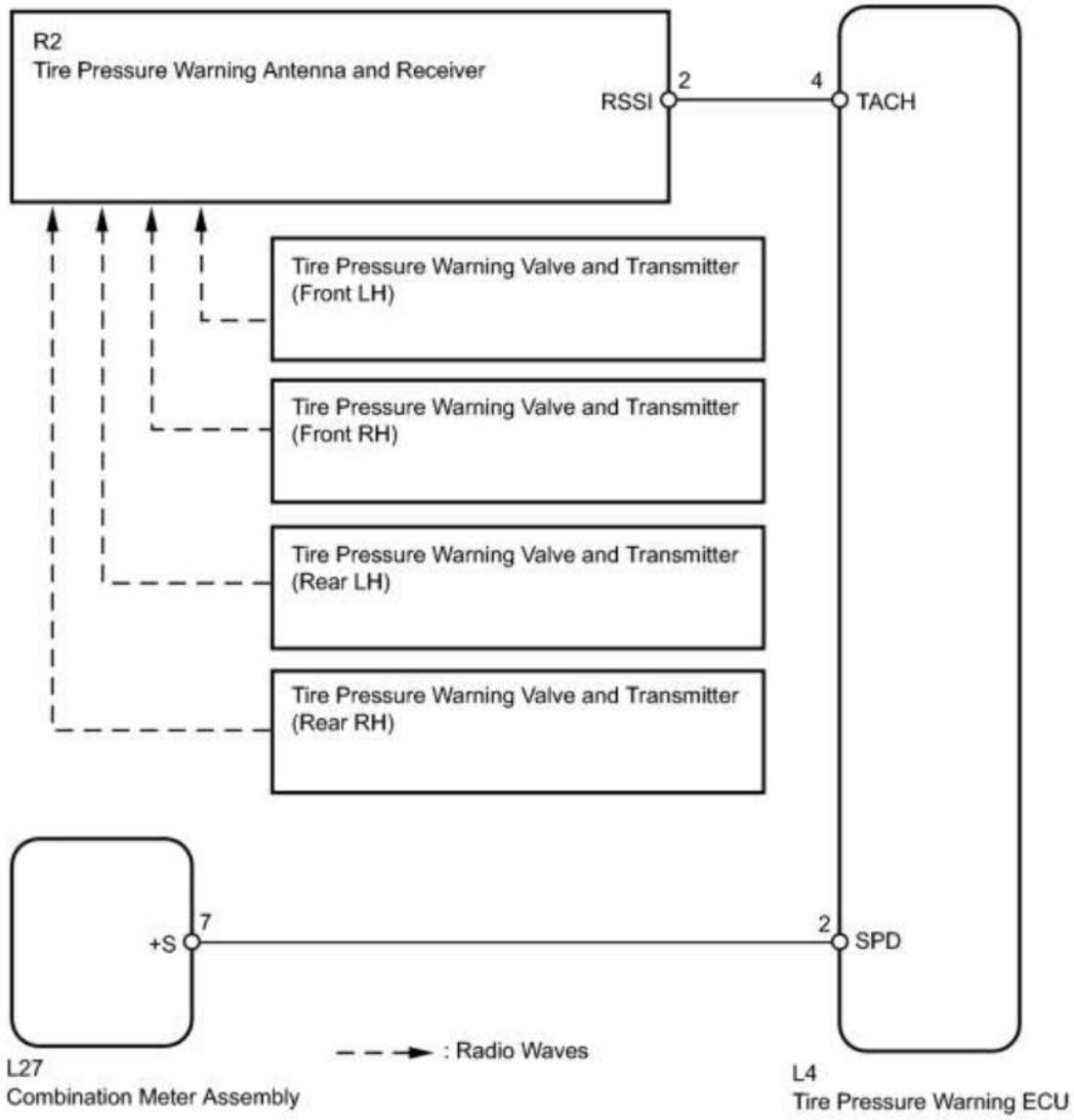
DTC No.	DTC Detection Condition	Trouble Area
C2175/75	After following condition (a) or (b) is met, the transmitter ID is not received from the tire pressure warning valve and transmitters for a total of 20 minutes: (a) No vehicle speed signal for 15 minutes (b) RSSI signal 49 mV or less, or 4.95 V or more twice continuously	• Combination meter assembly • Tire pressure warning valve and transmitter • Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU

HINT:

This DTC is set at the same time as DTCs C2121/21 to C2124/24 are being set.

WIRING DIAGRAM

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INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU has been replaced.

PROCEDURE

1.	READ OUTPUT DTC (DTCs C2121/21 to C2124/24)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.

(f) Read DTCs.

Result:

Result	Proceed to
DTCs C2121/21 to C2124/24 are not output	A
DTCs C2121/21 to C2124/24 are output	B

NOTICE:

When DTCs C2121/21 to C2124/24 is output, troubleshoot that DTCs first. Then troubleshoot DTCs C2175/75.

B ▶ GO TO DTCs C2121/21 to C2124/24

A ▼

2.	PERFORM SIGNAL CHECK (VEHICLE SPEED SIGNAL AND RSSI SIGNAL)

(a) Enter the signal check mode in Test Mode Procedure INFO.

(b) Turn the power switch on (IG) and wait for 3 seconds or more to erase DTC C2196/96.

(c) Drive the vehicle at 20 km/h (12 mph) or more for 10 seconds to erase DTC C2191/91.

(d) Check for test mode DTCs.

Result:

Result	Proceed to
DTCs C2191/91 and C2196/96 are cleared	A
DTC C2191/91 is output	B
DTC C2196/96 is output	C

HINT:

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DTCs C2181/81 to C2184/84 (Transmitter ID not Received) are output at this time, but they are not related to this check.

C ▶ GO TO DTC C2196/96
B ▶ GO TO DTC C2191/91
A ▼

3.	RECONFIRM DTC OUTPUT (DTC C2175/75)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Drive the vehicle at 50 km/h or more for at least 20 minutes.

(e) Turn the Techstream on.

(f) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.

(g) Read DTCs.

Result:

Result	Proceed to
DTC C2175/75 is not output	A
DTC C2175/75 is output	B

HINT:

If the DTC is not output, it can be determined that the system is functioning normally and that the DTC was stored due to radio wave interference.

B ▶ REPLACE TIRE PRESSURE WARNING ECU
A ▶ **USE SIMULATION METHOD TO CHECK**

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DTC	C2176/76	Receiver Error

DESCRIPTION

The signals are transmitted to the tire pressure warning antenna and receiver on the body as radio waves and then sent to the tire pressure warning ECU.

DTC No.	DTC Detection Condition	Trouble Area
C2176/76	Malfunction in the tire pressure warning ECU internal circuit	Tire pressure warning ECU

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU has been replaced.

PROCEDURE

1.	CHECK DTC OUTPUT (C2176/76)

(a) Clear the DTC INFO.

(b) Turn the power switch off.

(c) Turn the power switch on (IG) and check for DTC INFO.

OK:

DTC C2176/76 is not output.

NG ▶ REPLACE TIRE PRESSURE WARNING ECU
OK ▶ **END**

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DTC	C2177/77	Initialization not Completed

DESCRIPTION

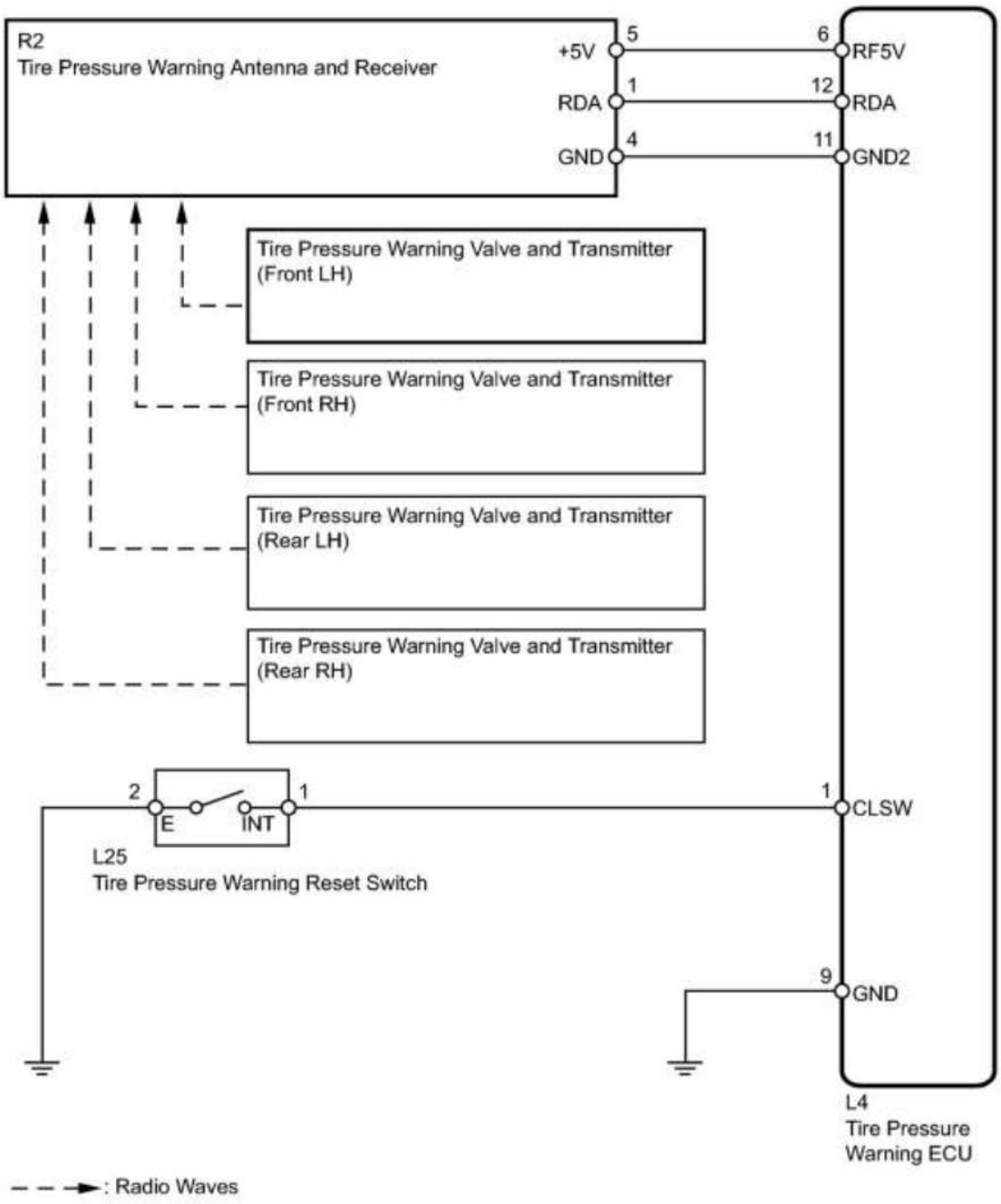
Initialization is necessary if one of the following occurs:

- Tire pressure warning ECU is replaced.
- Tire pressure warning valve and transmitter is replaced.
- Tires with a different tire standard pressure are installed.
- Tires are rotated.
- A new vehicle is delivered.

DTC No.	DTC Detection Condition	Trouble Area
C2177/77	• All conditions below are met: • During initialization • Tire pressure warning valve and transmitter is not in stop mode • Signal is not received from tire pressure warning valve and transmitter for 20 minutes or more • Vehicle speed is more than 8 km/h (5 mph) for a total of 20 minutes	• Tire pressure warning valve and transmitter • Tire pressure warning ECU • Tire pressure warning antenna and receiver • Wire harness or connector

WIRING DIAGRAM

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INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.

- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU and/or any of the valve and transmitters have been replaced.

PROCEDURE

1.	CHECK FREQUENCY RECEIVING CONDITION

(a) Check that the vehicle is not located in an area such as described below:

(1) Facilities or devices that use similar radio frequencies are located in the vicinity of the vehicle.

HINT:

If the vehicle is located in an area described above, the tire pressure warning light may come on after blinking 1 minute only in a particular area due to interfering radio frequencies.

(2) Devices using similar radio frequencies are used in the vehicle.

OK:

Facilities, or devices that use similar radio frequencies are not located in the vicinity of the vehicle.

HINT:

Radio transmissions may be interrupted due to the surroundings, or devices installed by the user.

NG ▶ CHECK IF ANY DEVICE IS INSTALLED BY USER

OK

▼

2.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

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Result:

Result	Proceed to
All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

B GO TO DTC C2121/21 TO C2124/24

A

3.	PERFORM INITIALIZATION

(a) Perform initialization INFO.

NEXT

4.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check the values by referring to the table below.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ID1 Tire Inflation Pressure	ID1 tire inflation pressure/ min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation	ID2 tire inflation pressure /	Actual tire inflation	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -

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Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Pressure	min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	pressure	14 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 0 kPa (0 kgf/cm^2, 0 psi), Relative pressure / -100 kPa (-1.0 kgf/cm^2, -14 psi) max.: Absolute pressure / 638 kPa (6.4 kgf/cm^2, 93 psi), Relative pressure / 538 kPa (5.4 kgf/cm^2, 78 psi)	Actual tire inflation pressure	If 0 kPa (0 kgf/cm^2, 0 psi) is displayed for absolute pressure or -100 kPa (-1.0 kgf/cm^2, -14 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take about 2 or 3 minutes until the values are displayed.
- When no "ID Tire Inflation Pressure" data has changed, reset the tire pressure to the appropriate specified value and rotate the tire 90 to 270 degrees. Then rapidly release the tire pressure and recheck it.

Result:

Result	Proceed to
All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

B ▶ GO TO DTC C2121/21 TO C2124/24

A ▶ **END**

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DTC	C2191/91	Vehicle Speed Signal Error (Test Mode DTC)

DESCRIPTION

The tire pressure warning ECU receives a vehicle speed signal from the combination meter. This DTC is stored upon entering test mode, and cleared when a vehicle speed signal of 20 km/h (12 mph) is detected for 3 seconds or more. This DTC is output only in test mode.

DTC No.	DTC Detection Condition	Trouble Area
C2191/91	Test mode procedure is performed	• Combination meter • Vehicle speed sensor • Wire harness or connector • Tire pressure warning ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU has been replaced.

PROCEDURE

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1.	READ VALUE USING TECHSTREAM (VEHICLE SPEED)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.

(f) Check that the values indicated on the Techstream and on the combination meter are the same.

Tire Pressure Monitor

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Vehicle Speed	Vehicle speed/ min.: 0 km/h (0 mph) max.: 255 km/h (158 mph)	Almost same as actual vehicle speed	Speed indicated on combination meter

OK:

Vehicle speed indicated on the Techstream and on the combination meter are the same.

NG ▶ INSPECT TIRE PRESSURE WARNING ECU (SPD SIGNAL)

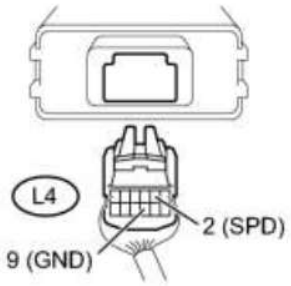
OK ▶ **USE SIMULATION METHOD TO CHECK**

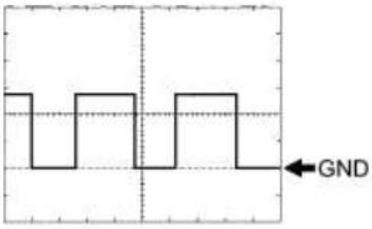
2.	INSPECT TIRE PRESSURE WARNING ECU (SPD SIGNAL)

(a) Disconnect the L4 ECU connector.

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*1





(b) Jack up the vehicle.

(c) Move the shift lever to N.

(d) Turn the power switch on (IG).

(e) Check the waveform of the ECU connector using an oscilloscope while turning the wheel slowly.

OK:

Tester Connection	Switch Condition	Specified Condition
L4-2 (SPD) - L4-9 (GND)	Power switch on (IG)	Correct waveform appears as shown

Text in Illustration

*1	Rear view of wire harness connector (to Tire Pressure Warning ECU)

Tool Setting

Item	Contents
Tool Setting	5 V/DIV., 20 ms/DIV.
Vehicle Condition	Driving wheels rotating slowly

HINT:

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The wavelength becomes shorter as the vehicle speed increases.

NG ▶ CHECK HARNESS AND CONNECTOR (ECU - COMBINATION METER)

OK ▶ **REPLACE TIRE PRESSURE WARNING ECU**

3.	CHECK HARNESS AND CONNECTOR (ECU - COMBINATION METER)

(a) Disconnect the L4 ECU connector.

(b) Disconnect the L27 meter connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L4-2 (SPD) - L27-7 (+S)	Always	Below 1 Ω
L4-2 (SPD) - Body ground	Always	10 kΩ or higher

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE MATER CIRCUIT PLATE NO.3**

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DTC	C2196/96	RSSI Signal Error (Test Mode DTC)

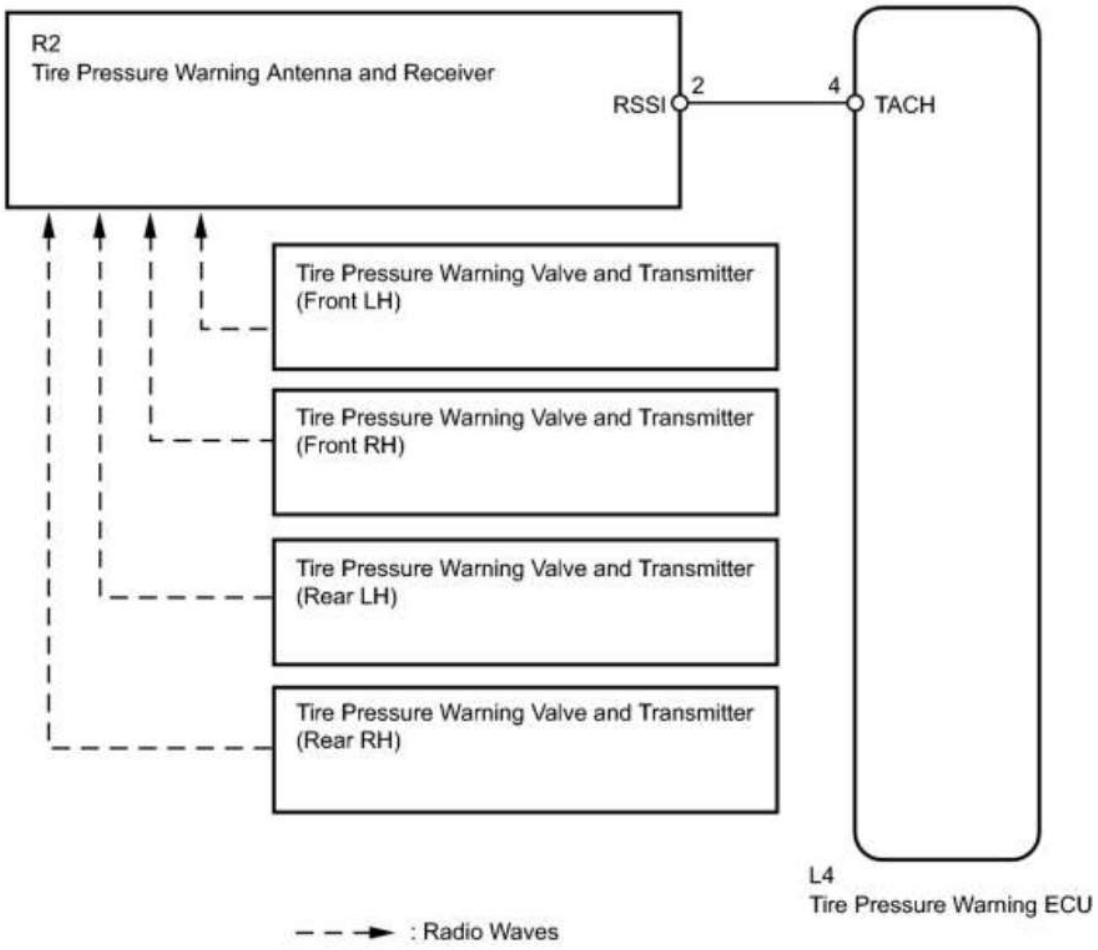
DESCRIPTION

The tire pressure warning ECU receives a RSSI signal from the tire pressure warning antenna and receiver. This DTC is stored upon entering test mode, and cleared when an RSSI signal between 49 mV and 4.95 V is received for 3 seconds or more.

DTC No.	DTC Detection Condition	Trouble Area
C2196/96	Test mode procedure is performed	• Tire pressure warning antenna and receiver • Wire harness or connector • Tire pressure warning ECU

WIRING DIAGRAM

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INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU has been replaced.

PROCEDURE

1.	CHECK OUTPUT DTC (DTCs C2121/21 to C2124/24)

(a) Turn the power switch off.

(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.

(f) Read the DTCs.

Result:

Result	Proceed to
DTCs C2121/21 to C2124/24 are not output	A
DTCs C2121/21 to C2124/24 are output	B

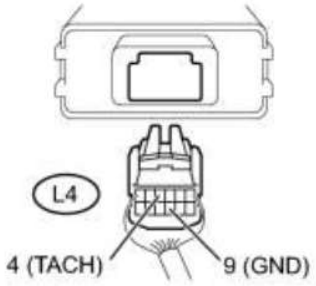
B ▶ GO TO DTCs C2121/21 to C2124/24

A

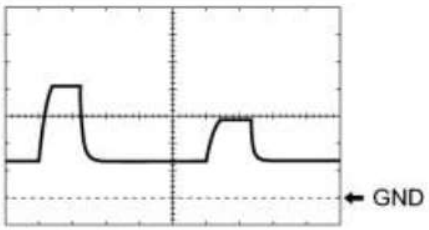
▼

2.	INSPECT TIRE PRESSURE WARNING ECU (RSSI SIGNAL)

*1



(a) Disconnect the L4 ECU connector.



(b) Turn the power switch on (IG).

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(c) Check the waveform of the ECU connector using an oscilloscope while idling the engine.

OK:

Tester Connection	Switch Condition	Specified Condition
L4-4 (TACH) - L4-9 (GND)	Power switch on (IG)	Correct waveform appears as shown

Text in Illustration

*1	Rear view of wire harness connector (to Tire Pressure Warning ECU)

Tool Setting

Item	Contents
Tool Setting	0.5 V/DIV., 10 ms/DIV.

HINT:

- The shape of waves like figure appears approximately 2 times every 3 minutes.
- Figure is one example, and the voltage with few changes might be detected between 49 mV and 4.95 V.

NG ▶ CHECK HARNESS AND CONNECTOR (TIRE PRESSURE WARNING ECU - ANTENNA AND RECEIVER)

OK ▶ **REPLACE TIRE PRESSURE WARNING ECU**

3.	CHECK HARNESS AND CONNECTOR (TIRE PRESSURE WARNING ECU - ANTENNA AND RECEIVER)

(a) Disconnect the L4 ECU connector.

(b) Disconnect the R2 tire pressure warning antenna and receiver connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L4-4 (TACH) - R2-2 (RSSI)	Always	Below 1 Ω
L4-4 (TACH) - Body ground	Always	10 kΩ or higher

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE TIRE PRESSURE WARNING ANTENNA AND RECEIVER**

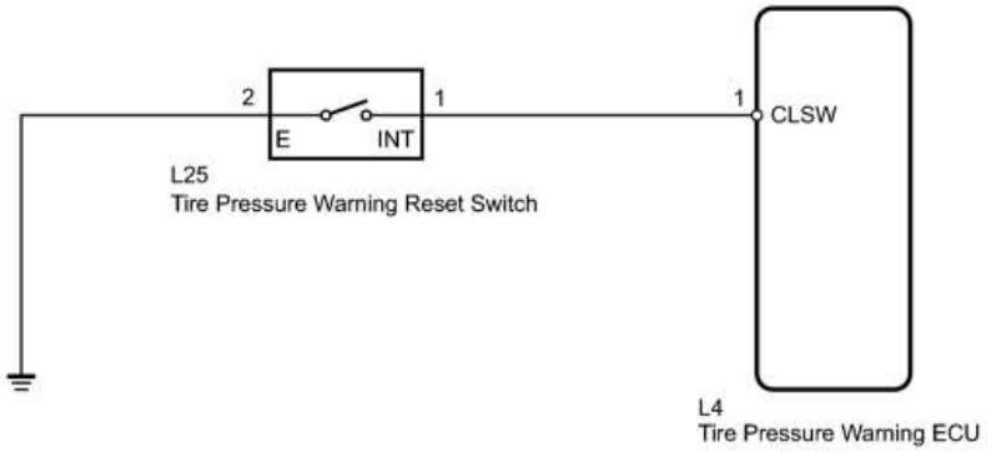
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Tire Pressure Warning Reset Switch Circuit

DESCRIPTION

Initialization can be started by pressing the tire pressure warning reset switch and holding it for 3 seconds or more. If the ECU receives the signal from the switch, the tire pressure warning light blinks 3 times (1 second on, 1 second off).

WIRING DIAGRAM



N

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU, after the ECU has been replaced.

PROCEDURE

1.	CHECK TIRE PRESSURE WARNING RESET SWITCH FUNCTION

(a) Perform the tire pressure warning reset switch test in Test Mode Procedure INFO.

OK:

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Reset switch ON

Tire pressure warning light comes on.

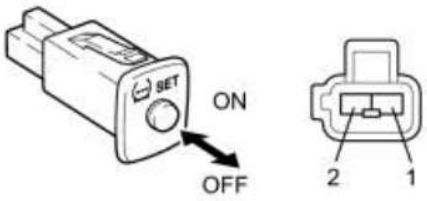
Reset switch OFF

Tire pressure warning light blinks.

NG ▶ INSPECT TIRE PRESSURE WARNING RESET SWITCH
OK ▶ **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

2.	INSPECT TIRE PRESSURE WARNING RESET SWITCH

Component without harness connected:
(Tire Pressure Warning Reset Switch)



(a) Disconnect the tire pressure warning reset switch connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
1 (INT) - 2 (E)	ON	Below 1 Ω
	OFF	10 kΩ or higher

NG ▶ REPLACE TIRE PRESSURE WARNING RESET SWITCH
OK ▼

3.	CHECK HARNESS AND CONNECTOR (TIRE PRESSURE WARNING RESET SW - TIRE PRESSURE WARNING ECU)

(a) Disconnect the tire pressure warning reset switch L25 connector and tire pressure warning ECU L4 connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition

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Tester Connection	Switch Condition	Specified Condition
L4-1 (CLSW) - L25-1 (INT)	Always	Below 1 Ω
L4-1 (CLSW) - Body ground		10 kΩ or higher
L25-2 (E) - Body ground		Below 1 Ω

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR
OK ▶ **REPLACE TIRE PRESSURE WARNING ECU**

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Tire Pressure Warning Light Circuit

DESCRIPTION

If the tire pressure warning ECU detects any trouble, the tire pressure warning light blinks (stays on after blinking for 1 minute) and tire pressure monitor is cancelled at the same time. At this time, the ECU records a DTC in the memory.

Connecting terminals TC and CG of the DLC3 makes the tire pressure warning light blink to output DTCs.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU if the ECU has been replaced.

PROCEDURE

1.	CHECK OPERATION OF TIRE PRESSURE WARNING LIGHT (ACTIVE TEST)

(a) Turn the power switch off.

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(b) Connect the Techstream to the DLC3.

(c) Turn the power switch on (IG).

(d) Turn the Techstream on.

(e) Enter the following menus: Body Electrical / Combination Meter / Active Test.

(f) Check the condition of the tire pressure warning light by using the Techstream.

Combination Meter

Tester Display	Test Part	Control Range	Diagnostic Note
Indicat. Tire Pressure Warning System	Tire pressure warning light	Tire pressure warning light OFF or ON	Confirm that the vehicle is stopped, engine idling

OK:

The warning light turns on when using the Techstream.

NG ▶ GO TO METER / GAUGE SYSTEM

OK

▼

2.	CHECK HARNESS AND CONNECTOR (COMBINATION METER - TIRE PRESSURE WARNING ECU)

(a) Disconnect the L27 combination meter connector.

(b) Disconnect the L4 tire pressure warning ECU connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L27-3 (TIRE) - L4-5 (IND)	Always	Below 1 Ω
L27-3 (TIRE) - Body ground		10 kΩ or higher

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **REPLACE TIRE PRESSURE WARNING ECU**

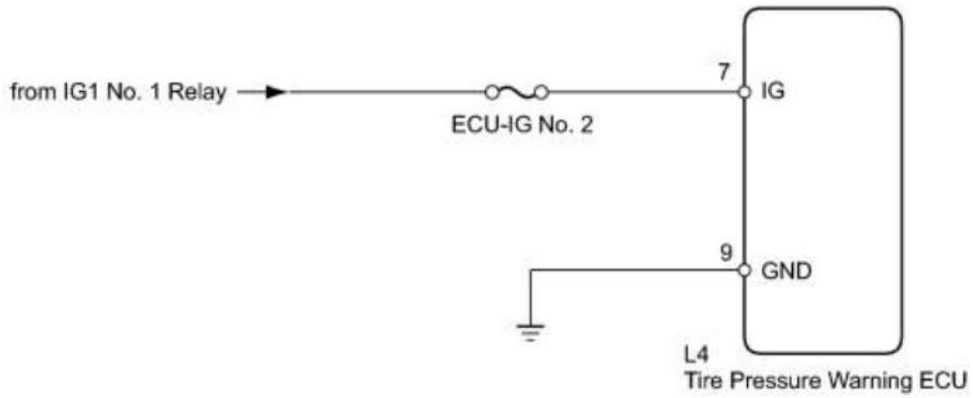
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ECU Power Source Circuit

DESCRIPTION

This is the power source for the tire pressure warning ECU.

WIRING DIAGRAM



G

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.

PROCEDURE

1.	INSPECT FUSE (ECU-IG No. 2)

(a) Remove the ECU-IG No. 2 fuse from the instrument panel junction block.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
EUC-IG No. 2	Always	Below 1 Ω

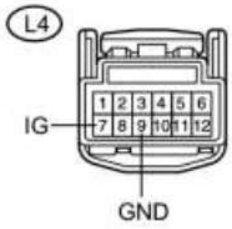
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NG REPLACE FUSE

OK

2.	CHECK HARNESS AND CONNECTOR (ECU - BATTERY AND BODY GROUND)

*1



(a) Disconnect the L4 ECU connector.

P

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Switch Condition	Specified Condition
L4-7 (IG) - Body ground	Power switch on (IG)	11 to 14 V
	Power switch off	Below 1 V

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L4-9 (GND) - Body ground	Always	Below 1 Ω

Text in Illustration

*1	Front view of wire harness connector to Tire Pressure Warning ECU

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

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TC and CG Terminal Circuit

DESCRIPTION

DTC output mode is set by connecting terminals 13 (TC) and 4 (CG) of the DLC3. The DTCs are indicated by the blinking of the tire pressure warning light.

WIRING DIAGRAM



Y

HINT:

When various warning lights blink continuously, a ground short in the wiring of terminal TC of the DLC3 or an internal ground short in an ECU connected to this circuit may have occurred.

INSPECTION PROCEDURE

NOTICE:

- When replacing the tire pressure warning ECU, read the transmitter IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform initialization INFO after registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.

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PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (DLC3 - TIRE PRESSURE WARNING ECU)

(a) Disconnect the L4 ECU connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
L4-3 (TC) - L61-13 (TC)	Always	Below 1 Ω
L61-4 (CG) - Body ground		

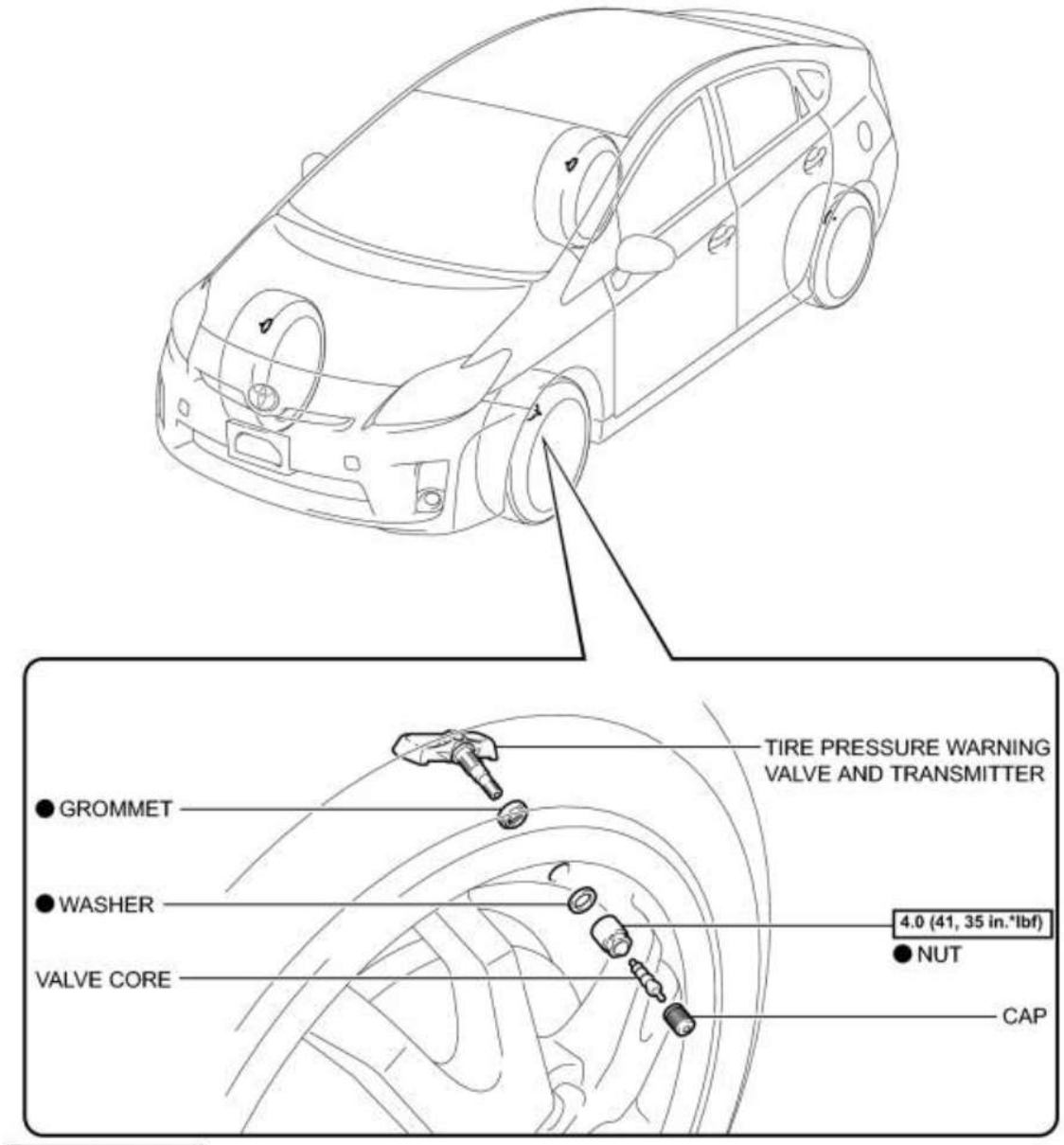
NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK ▶ **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

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COMPONENTS

ILLUSTRATION



N*m (kgf*cm, ft.*lbf): Specified torque

● Non-reusable part

c

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REMOVAL

1. REMOVE FRONT WHEEL

2. REMOVE REAR WHEEL

3. REMOVE TIRE PRESSURE WARNING VALVE AND TRANSMITTER

(a) Remove the valve core and cap to release the air from the tire.

(b) After ensuring that a sufficient amount of air has been released, remove the nut and washer used to secure the tire pressure warning valve and transmitter. Drop the tire pressure warning valve and transmitter with the grommet into the tire.

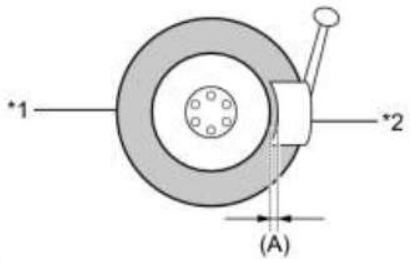
NOTICE:

Keep the removed cap and valve core.

HINT:

The grommet may remain attached to the rim.

(c) After dropping the tire pressure warning valve and transmitter into the tire, disengage the bead using the shoe of a tire remover.



c

Text in Illustration

*1	Tire
*2	Shoe

- Be careful not to damage the tire pressure warning valve and transmitter due to interference between the valve and the tire bead.
- Set the tire remover shoe as shown in the illustration.

  Width (A):

  10 to 20 mm (0.394 to 0.787 in.)

(d) Separate the upper bead.

(e) Take out the tire pressure warning valve and transmitter with the grommet from the tire and separate the lower bead.

(f) Remove the grommet from the tire pressure warning valve and transmitter.

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INSTALLATION

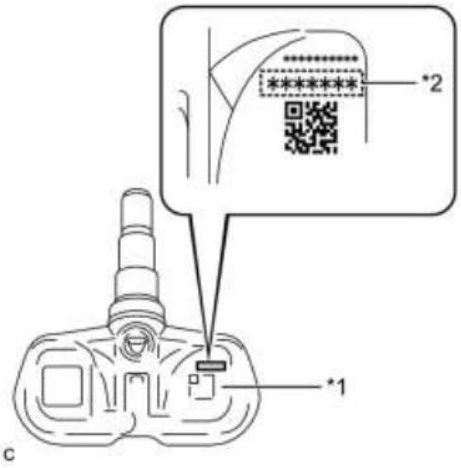
NOTICE:

- Always use a new grommet, washer and nut when installing the tire pressure warning valve and transmitter.
- If installing a new tire pressure warning valve and transmitter, write down the ID number before installation.
- Check that there is no oil, water or lubricant around the rim hole, tire pressure warning valve and transmitter, washer and nut. Failing to do so may result in improper installation.

1. INSTALL TIRE PRESSURE WARNING VALVE AND TRANSMITTER

(a) Install a new grommet to the tire pressure warning valve and transmitter.

(b) Insert the tire pressure warning valve and transmitter into the valve installation hole. Insert it from the inside of the rim so that the printed surface can be seen.



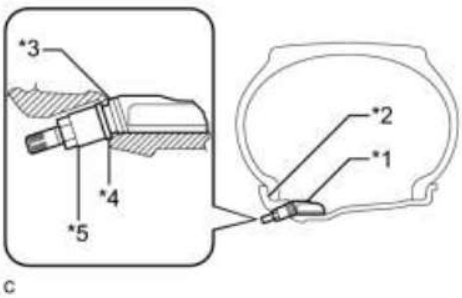
C

Text in Illustration

*1	Printed Surface
*2	7-digit Number Transmitter ID

- Check that there is no visible deformation, damage, or other abnormalities on the tire pressure warning valve and transmitter.
- Check that there is no foreign matter on the grommet and around the rim hole.
- If the tire pressure warning valve and transmitter is installed upside down, it may be damaged or fail to transmit signals when driving at high speeds.

(c) Install a new washer on the tire pressure warning valve and transmitter with the grommet from the rim side and tighten a new nut.



C

Text in Illustration

*1	Tire Pressure Warning Valve and Transmitter
*2	Rim
*3	Grommet
*4	Washer
*5	Nut

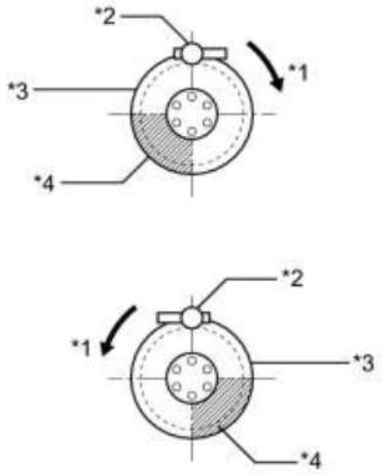
Torque: **4.0 N·m (41 kgf·cm, 35in·lbf)**

- No further tightening is required once the nut is tightened to the

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specified torque.
- Check that there is no foreign matter on the washer and nut.

(d) Set the wheel onto the mounting machine and install the lower bead. Position the main body of the tire pressure warning valve and transmitter in the shaded area shown in the illustration.



c

Text in Illustration

*1	Rim Rotating Direction
*2	Mount Tool of the Mounting Machine
*3	Rim
*4	Area for Tire Pressure Warning Valve and Transmitter

- If the tire pressure warning valve and transmitter is positioned outside this area, it will interfere with the tire bead and may be damaged.
- If the use of lubricant is required when installing the bead, do not apply lubricant directly to the tire pressure warning valve and transmitter.

(e) Install the upper bead.

NOTICE:

Make sure that the tire bead and tool do not interfere with the main body of the tire pressure warning valve and transmitter and that it is not clamped by the bead.

(f) Install the valve core.

(g) After the tire is inflated, the valve nut may be loose. Retighten the nut to the specified torque.

Torque: **4.0 N·m (41 kgf·cm, 35in·lbf)**

NOTICE:

No further tightening is required once the nut is tightened to the specified torque.

(h) Check for air leaks with soapy water.

If there is air leakage, push the valve core 2 or 3 times to remove any dirt attached to the valve core. If air continues leak, replace the grommet, washer and nut.

(i) Install the cap.

2. INSTALL FRONT WHEEL

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Torque: **103 N·m (1050 kgf·cm, 76ft·lbf)**

3. INSTALL REAR WHEEL

Torque: **103 N·m (1050 kgf·cm, 76ft·lbf)**

4. INSPECT TIRES INFO

5. REGISTER TRANSMITTER ID

(a) Register all transmitter IDs INFO.

6. PERFORM INITIALIZATION

(a) Perform initialization INFO.

7. INSPECT TIRE PRESSURE WARNING SYSTEM

(a) Inspect the tire pressure warning system INFO.

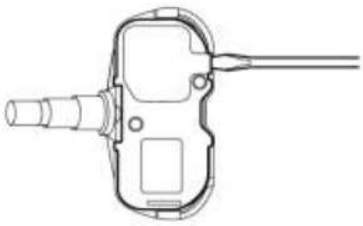
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DISPOSAL

NOTICE:

The tire pressure warning valve and transmitter is powered by a lithium battery. When disposing of the tire pressure warning valve and transmitter, remove the battery and dispose of it correctly.

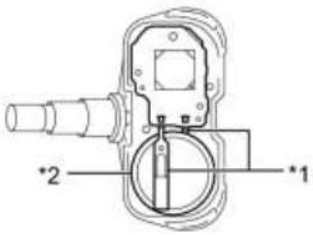
1. DISPOSE OF TIRE PRESSURE WARNING VALVE AND TRANSMITTER



c

(a) Using the tip of a screwdriver, pry off the back cover.

(b) Cut the 2 terminals that connect the battery to the base board to remove the battery.



c

Text in Illustration

*1	Terminal
*2	Lithium Battery

HINT:

The battery and base board are covered with silicone.

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