

Last Modified: 3-27-2012	6.4 F	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003P8Q040X
Title: TIRE / WHEEL: TIRE AND WHEEL SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2013 FR-S)		

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
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NEXT
▼

7.	INSPECT REAR AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT	INFO
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NG ► Go to step 8
OK ► Go to step 9

8.	REPAIR REAR AXLE HUB BEARING LOOSENESS AND AXLE HUB RUNOUT	INFO
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NEXT
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9.	PERFORM ROAD TEST
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NEXT
▼

10.	RETURN VEHICLE TO CUSTOMER
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2. DIAGNOSIS OF IRREGULAR TIRE WEAR

1.	INSPECT TIRES	INFO
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NEXT
▼

2.	REPAIR OR REPLACE TIRE(S)
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NEXT
▼

3.	INSPECT AND/OR ADJUST FRONT WHEEL ALIGNMENT INFO
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NEXT
▼

4.	INSPECT AND/OR ADJUST REAR WHEEL ALIGNMENT INFO
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NEXT
▼

5.	PERFORM ROAD TEST
----	--------------------------

NEXT
▼

6.	RETURN VEHICLE TO CUSTOMER
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	 TOYOTA
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Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000015KU04JX
Title: TIRE / WHEEL: TIRE AND WHEEL SYSTEM: INSPECTION (2013 FR-S)		

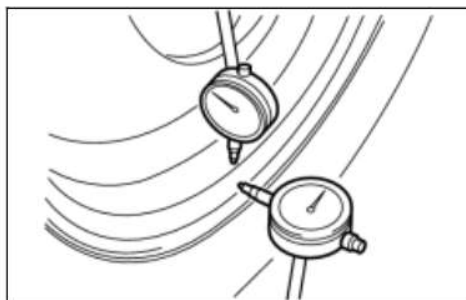
INSPECTION

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)
215/45R17 87W	240 (2.4, 35)	240 (2.4, 35)
P215/45R17 87V	240 (2.4, 35)	240 (2.4, 35)
T135/80D 16 101M	420 (4.2, 60)	420 (4.2, 60)



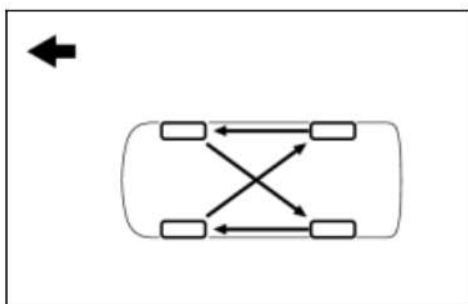
(b) Using a dial indicator, check the runout of the wheel.

Maximum wheel runout

Steel wheel	2.0 mm (0.0787 in.) (Vertical and lateral)
Aluminum wheel	1.0 mm (0.0394 in.) (Vertical and lateral)

2. ROTATE TIRES

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



Text in Illustration

	Front of the Vehicle
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Torque: 120 N·m (1224 kgf·cm, 89ft·lbf)

3. INSPECT WHEEL BALANCE

- (a) Check and perform off-car balancing.
- (b) If required, perform on-car balancing.

Imbalance after adjustment:

10.0 g (0.0220 lb) or less

4. INSPECT FRONT AXLE HUB BEARING LOOSENESS

INFO

5. INSPECT REAR AXLE HUB BEARING LOOSENESS

INFO

6. INSPECT FRONT AXLE HUB RUNOUT

INFO

7. INSPECT REAR AXLE HUB RUNOUT

INFO



Last Modified: 3-27-2012	6.4 N	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000021ML018X
Title: TIRE / WHEEL: TIRE REPAIR SEAL: DISPOSAL (2013 FR-S)		

DISPOSAL

1. DISPOSE OF TIRE REPAIR SEAL

HINT:

Confirm the expiration date on the side of the repair seal bottle.

- (a) Dispose of the retrieved seal by consigning disposal to a waste the disposal firm.

NOTICE:

- The valve and valve core cannot be reused.
- Do not reuse items such as cloths that were used to wipe off seal or gloves soiled with the seal. Dispose of such items as burnable waste.

- (b) Dispose of the bottle used for retrieving the seal as plastic waste.



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Last Modified: 3-27-2012	6.4 N	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000021MM018X
Title: TIRE / WHEEL: TIRE REPAIR SEAL: RECOVERY (2013 FR-S)		

RECOVERY

1. RECOVERY OF TIRE REPAIR SEAL

NOTICE:

- Try not to spill the tire repair seal in the tire during servicing.
- Wipe off any spilt seal with a cloth or the equivalent.

(a) Using a tire changer, remove the tire from the wheel by following the same procedures as for a regular tire change.

NOTICE:

Do not raise the tire rapidly as the seal may spill out.

(b) Retrieve the tire repair seal from the removed tire.

HINT:

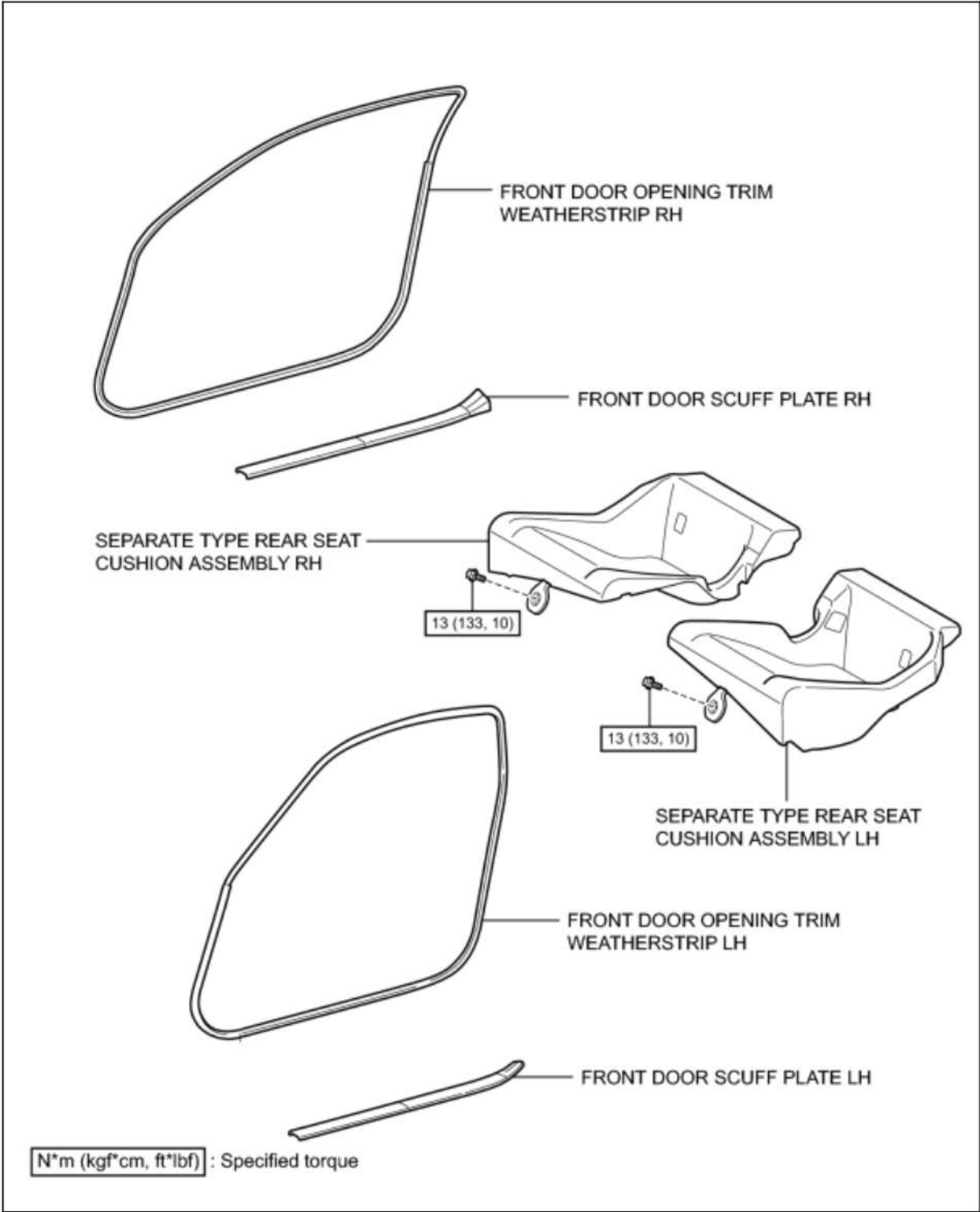
Using a cloth or the equivalent, wipe off any seal spilt on the tire, the wheel, the tire changer and the floor.



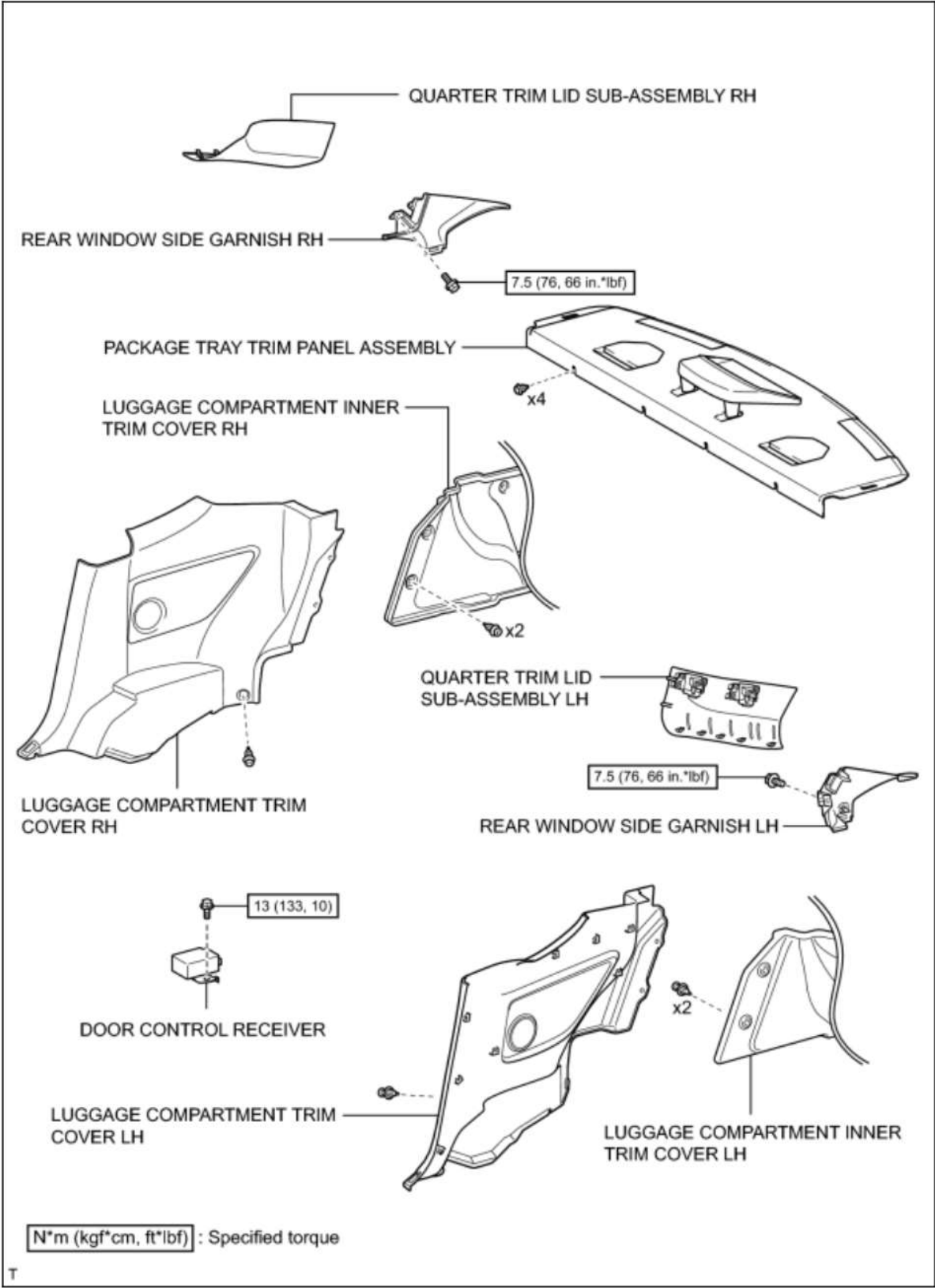
Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003ZWC008X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING RECEIVER: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



ILLUSTRATION



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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002PLM029X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING RECEIVER: INSTALLATION (2013 FR-S)		

INSTALLATION

HINT:

The tire pressure warning receiver is integrated in the door control receiver.

1. INSTALL DOOR CONTROL RECEIVER

NOTICE:

- Do not drop the door control receiver or apply impact on it.
- When replacing or inspecting the door control receiver, do not change the wiring route or the length of the harness around the receiver.

(a) Engage the guide and install the door control receiver.

(b) Install the bolt.

Torque: 13 N·m (133 kgf·cm, 10ft·lbf)

(c) Connect the connector.

2. INSTALL PACKAGE TRAY TRIM PANEL ASSEMBLY

[INFO](#)

3. INSTALL REAR WINDOW SIDE GARNISH LH

[INFO](#)

4. INSTALL REAR WINDOW SIDE GARNISH RH

HINT:

Use the same procedure described for the LH side.

5. INSTALL QUARTER TRIM LID SUB-ASSEMBLY LH

[INFO](#)

6. INSTALL QUARTER TRIM LID SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

7. INSTALL LUGGAGE COMPARTMENT TRIM COVER LH

[INFO](#)

8. INSTALL LUGGAGE COMPARTMENT TRIM COVER RH

HINT:

Use the same procedure described for the LH side.

9. CONNECT LUGGAGE COMPARTMENT TRIM INNER COVER LH

[INFO](#)

10. CONNECT LUGGAGE COMPARTMENT TRIM INNER COVER RH

HINT:

Use the same procedure described for the LH side.

11. INSTALL FRONT DOOR SCUFF PLATE LH INFO**12. INSTALL FRONT DOOR SCUFF PLATE RH****HINT:**

Use the same procedure described for the LH side.

13. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP LH INFO**14. INSTALL FRONT DOOR OPENING TRIM WEATHERSTRIP RH****HINT:**

Use the same procedure described for the LH side.

15. INSTALL SEPARATE TYPE REAR SEAT CUSHION ASSEMBLY LH INFO**16. INSTALL SEPARATE TYPE REAR SEAT CUSHION ASSEMBLY RH****HINT:**

Use the same procedure described for the LH side.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002PLO022X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING RECEIVER: REMOVAL (2013 FR-S)		

REMOVAL

HINT:

The tire pressure warning receiver is integrated in the door control receiver.

1. REMOVE SEPARATE TYPE REAR SEAT CUSHION ASSEMBLY LH INFO

2. REMOVE SEPARATE TYPE REAR SEAT CUSHION ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

3. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH INFO

4. REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH

HINT:

Use the same procedure described for the LH side.

5. REMOVE FRONT DOOR SCUFF PLATE LH INFO

6. REMOVE FRONT DOOR SCUFF PLATE RH

HINT:

Use the same procedure described for the LH side.

7. SEPARATE LUGGAGE COMPARTMENT INNER TRIM COVER LH INFO

8. SEPARATE LUGGAGE COMPARTMENT INNER TRIM COVER RH

HINT:

Use the same procedure described for the LH side.

9. REMOVE LUGGAGE COMPARTMENT TRIM COVER LH INFO

10. REMOVE LUGGAGE COMPARTMENT TRIM COVER RH

HINT:

Use the same procedure described for the LH side.

11. REMOVE QUARTER TRIM LID SUB-ASSEMBLY LH INFO

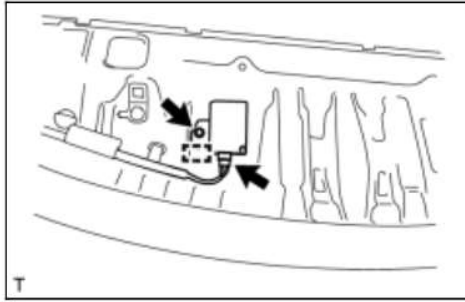
12. REMOVE QUARTER TRIM LID SUB-ASSEMBLY RH

HINT:

Use the same procedure described for the LH side.

13. REMOVE REAR WINDOW SIDE GARNISH LH INFO**14. REMOVE REAR WINDOW SIDE GARNISH RH****HINT:**

Use the same procedure described for the LH side.

15. REMOVE PACKAGE TRAY TRIM PANEL ASSEMBLY INFO**16. REMOVE DOOR CONTROL RECEIVER**

(a) Disconnect the connector.

(b) Remove the bolt.

(c) Disengage the guide and remove the door control receiver.

NOTICE:

- Do not drop the door control receiver or apply impact on it.
- When replacing or inspecting the door control receiver, do not change the wiring route or the length of the harness around the receiver.



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001NN303HX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: B1247: Tire Pressure Monitor Receiver Communication Stop (2013 FR-S)		

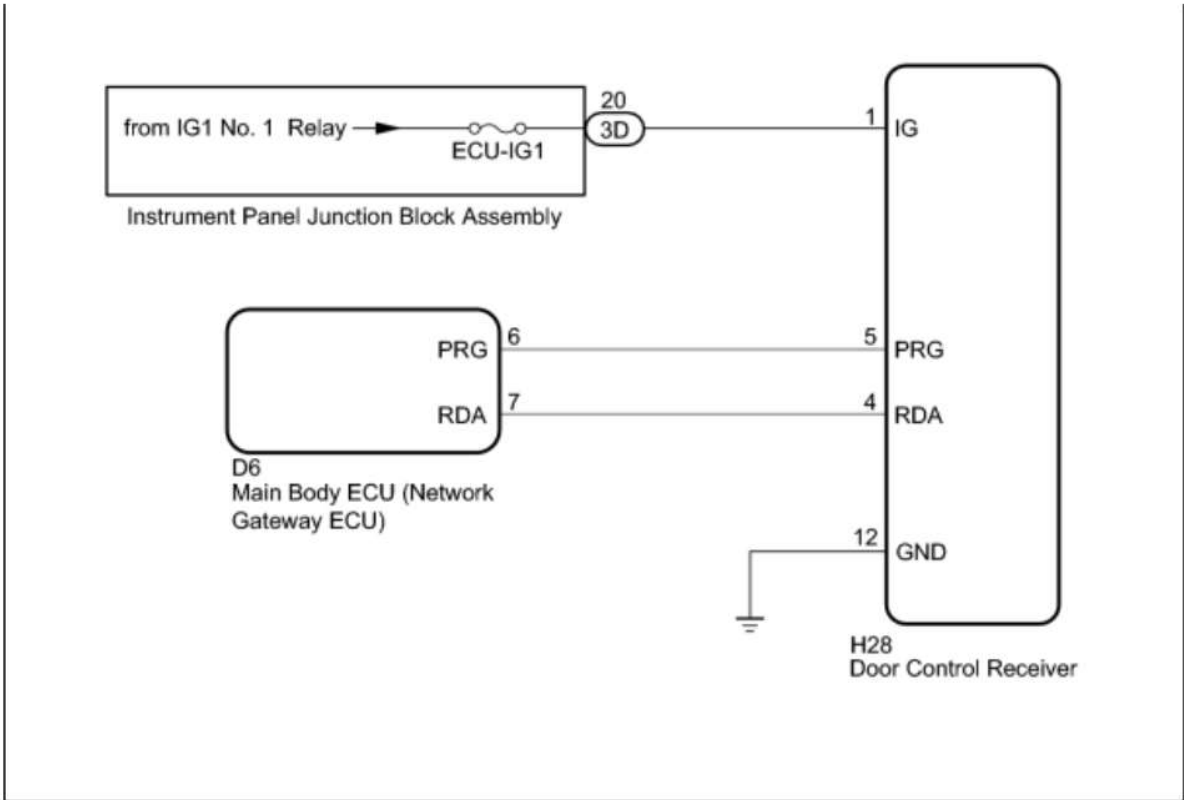
DTC	B1247	Tire Pressure Monitor Receiver Communication Stop
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DESCRIPTION

The main body ECU (network gateway ECU) and door control receiver are connected using 2 direct lines that they use to communicate with each other.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B1247	In diagnostic mode, an applicable RDA signal cannot be received within 10 seconds after a PRG signal is sent from the main body ECU (network gateway ECU).	• Door control receiver • Wire harness or connector • Main body ECU (network gateway ECU)

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement INFO .

HINT:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (MAIN BODY ECU (NETWORK GATEWAY ECU) - DOOR CONTROL RECEIVER)
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- (a) Disconnect the H28 door control receiver connector and the D6 main body ECU (network gateway ECU) connector.
- (b) Measure the resistance according to the value(s) in the table below.
- Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION

H28-4 (RDA) - D6-7	Always	Below 1 Ω
H28-5 (PRG) - D6-6	Always	Below 1 Ω
D6-7 (RDA) - Body ground	Always	10 k Ω or higher
D6-6 (PRG) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



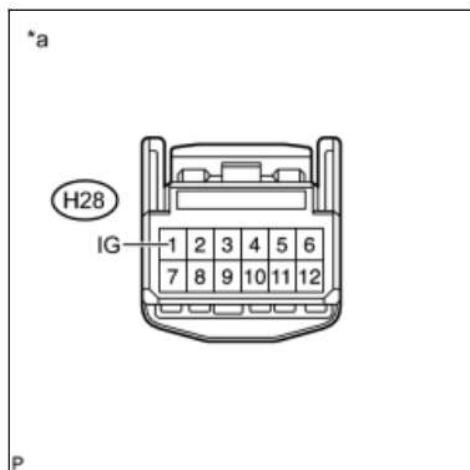
2.

CHECK HARNESS AND CONNECTOR (POWER SOURCE OF DOOR CONTROL RECEIVER)

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
H28-12 (GND) - Body ground	Always	Below 1 Ω



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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
H28-1 (IG) - Body ground	Ignition switch ON	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Door Control Receiver)
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NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK**3. REPLACE DOOR CONTROL RECEIVER**

- (a) Replace the door control receiver  .

NEXT**4. CHECK DTC OUTPUT (B1247)**

- (a) Clear the DTCs  .
- (b) Turn the ignition switch off.
- (c) Turn the ignition switch to ON.
- (d) Check for DTCs  .

OK:

DTC B1247 is not output.

NG  **REPLACE MAIN BODY ECU (NETWORK GATEWAY ECU)****OK**  **END**

TOYOTA

Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002DZD073X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2111-C2114: Transmitter ID1 Operation Stop (2013 FR-S)		

DTC	C2111	Transmitter ID1 Operation Stop
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DTC	C2112	Transmitter ID2 Operation Stop
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DTC	C2113	Transmitter ID3 Operation Stop
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DTC	C2114	Transmitter ID4 Operation Stop
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DESCRIPTION

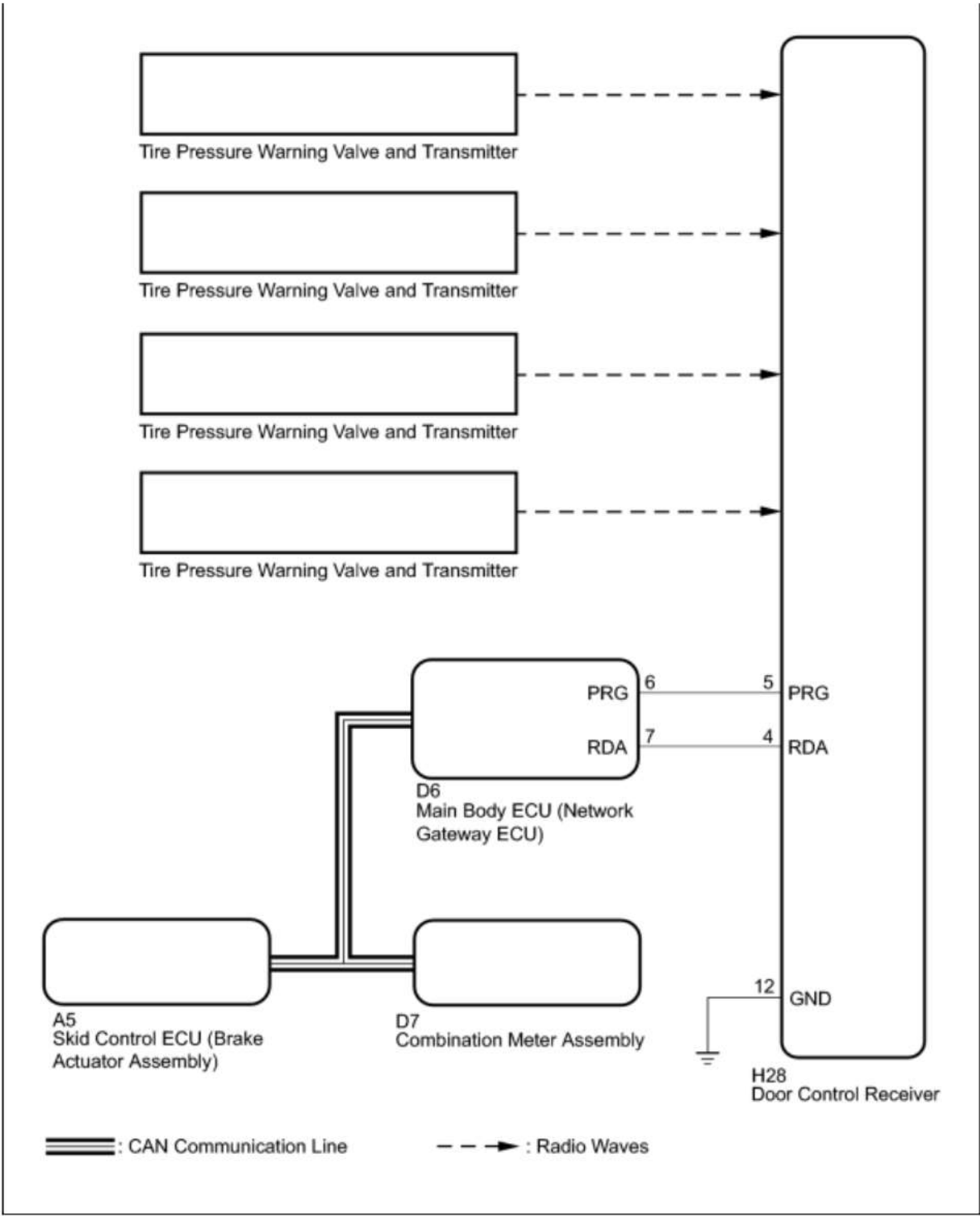
The tire pressure warning valve and transmitters that are installed in the tire and wheel assemblies measure the tire pressures. The measured values are transmitted to the door control receiver in the vehicle as radio waves. The ECU compares the measured air pressure values with the air pressure threshold. When the measured air pressure value is less than this threshold, the warning light in the combination meter assembly illuminates. The door control receiver stores a DTC when the tire pressure warning valve and transmitter stops transmitting signals. The signals can be forcibly transmitted by releasing the tire pressure rapidly. The stored DTC is cleared when signal transmission resumes.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2111 C2112 C2113 C2114	Tire pressure warning valve and transmitters stop transmitting signals	• Tire pressure warning valve and transmitter • Door control receiver

HINT:

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

WIRING DIAGRAM



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 ignition switch off.

- (c) Connect the Techstream to the DLC3.
- (d) Turn the ignition switch to ON.
- (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 / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi),	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

	Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	
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HINT:

***: It may take a few 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 to C2124**

INFO .

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kgf/cm² , 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 may take a few 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 the data.

(2) After confirming that all of the tire pressure data displayed on the Techstream has 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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Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000ZUQ089X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2121-C2124,C2181-C2184: No Signal from Transmitter ID1 (2013 FR-S)		

DTC	C2121	No Signal from Transmitter ID1
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DTC	C2122	No Signal from Transmitter ID2
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DTC	C2123	No Signal from Transmitter ID3
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DTC	C2124	No Signal from Transmitter ID4
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DTC	C2181	Transmitter ID1 not Received (Test Mode DTC)
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DTC	C2182	Transmitter ID2 not Received (Test Mode DTC)
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DTC	C2183	Transmitter ID3 not Received (Test Mode DTC)
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DTC	C2184	Transmitter ID4 not Received (Test Mode DTC)
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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 door control receiver in the vehicle as radio waves. 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 assembly illuminates.

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

Under the conditions below, the door control 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 a tire pressure warning valve and transmitter is mistyped during registration.
- A tire, wheel and/or 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 37 km/h (23 mph), or no transmitter ID is received from all the tire pressure warning valve and transmitters for a total of 20 minutes, these DTCs are set.

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2121 C2122 C2123 C2124	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. • For 20 minutes or more, vehicle speed is more than 37 km/h (23 mph) or no vehicle speed signal is received. (b) When both 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.	• Tire pressure warning valve and transmitter • Door control receiver
C2181 C2182 C2183 C2184	Test mode procedure is performed.	• Tire pressure warning valve and transmitter • Door control receiver

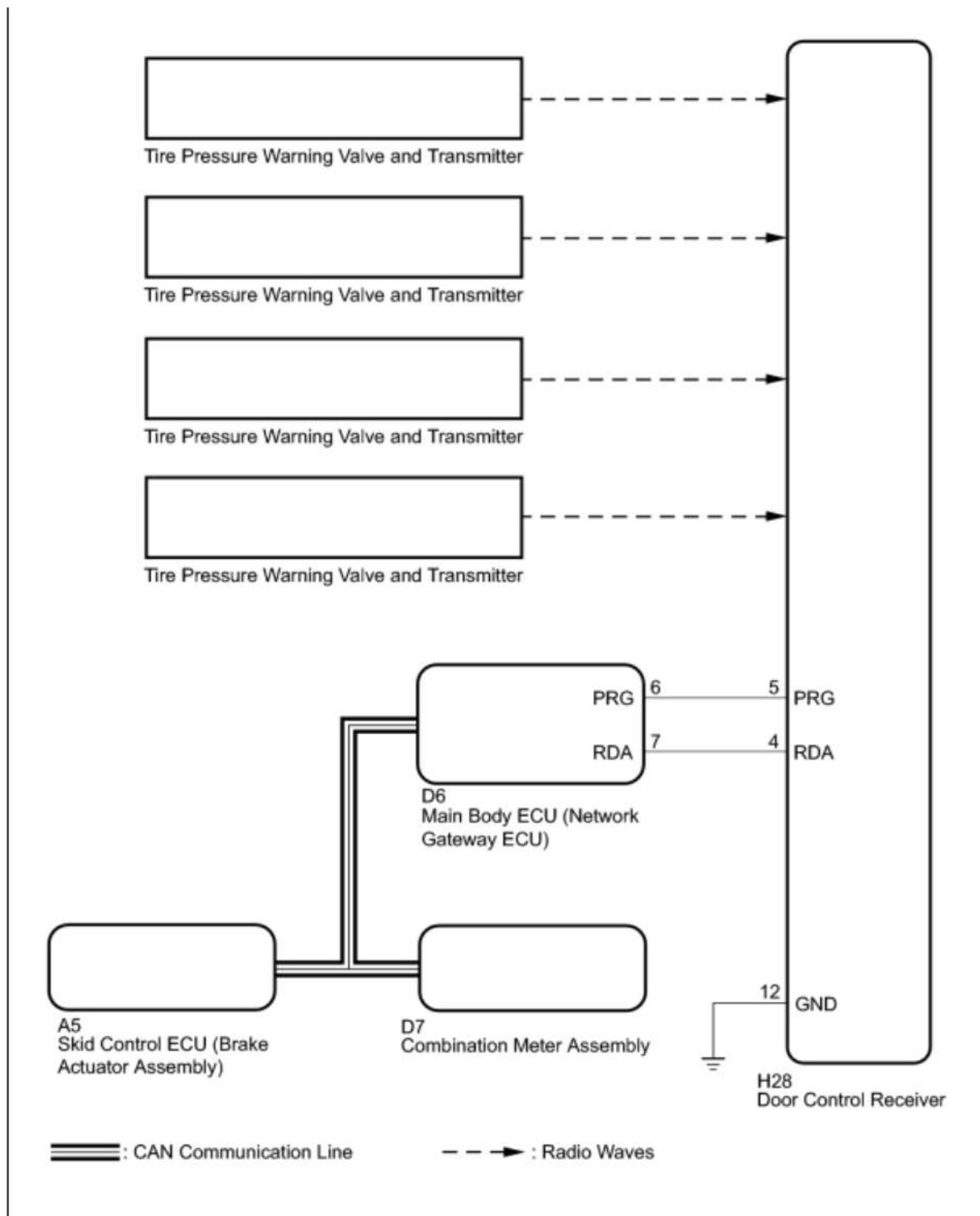
NOTICE:

When DTCs C2121 to C2124 are set, DTC C2179 may be set simultaneously. In such cases, troubleshoot DTCs C2121 to C2124 first, then troubleshoot DTC C2179.

HINT:

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

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement INFO.

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 such as the one 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  .
- (b) Turn the ignition switch off.
- (c) Connect the Techstream to the DLC3.
- (d) Turn the ignition switch to ON.
- (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 / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take a few minutes until the values are displayed.

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kg/cm² , 5.8 psi) within 30 seconds.

(i) Check the Data List.

NOTICE:

- It may take a few 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 the data.

- 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

B  **END**

A


3.	CHECK TRANSMITTER ID
-----------	-----------------------------

- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Chassis / Tire Pressure Monitor / Data List.
- Check the values by referring to the table below.

Tire Pressure Monitor

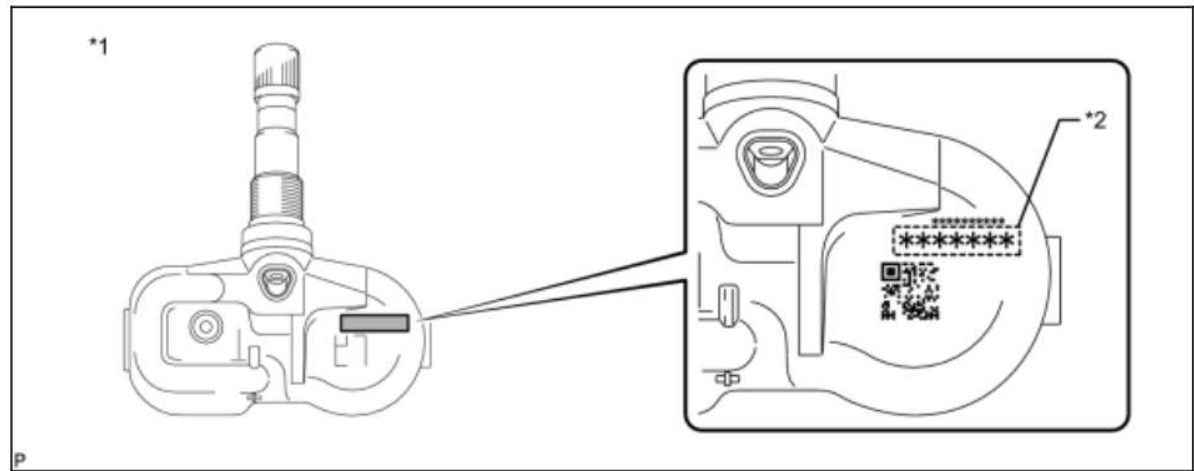
TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Registered ID1 code	Registered ID1 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID1 displayed	-
Registered ID2 code	Registered ID2 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID2 displayed	-
Registered ID3 code	Registered ID3 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID3 displayed	-
Registered ID4	Registered ID4 code/	ID No. registered for transmitter ID4	

code	min.: 0 max.: FFFFFFFF*	displayed	-
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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.



Text in Illustration

*1	Tire pressure warning valve and transmitter	*2	Transmitter ID (7-digit number)
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(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 ▼

4.	REPLACE TIRE PRESSURE WARNING VALVE AND TRANSMITTER
----	--

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

NEXT ▼

5. REGISTRATION OF TRANSMITTER ID

(a) Perform registration  .

NEXT



6. CONFIRM TIRE INFLATION PRESSURE (DATA LIST)

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (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 / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa 2		

ID3 Tire Inflation Pressure	(0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take a few 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 the data.

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 DOOR CONTROL RECEIVER**

Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003407071X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2126: Transmitter ID not Received in Main Mode (2013 FR-S)		

DTC	C2126	Transmitter ID not Received in Main Mode
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DESCRIPTION

After all IDs are registered, DTC C2126 is set in the door control receiver and the tire pressure warning light blinks for 1 minute and then illuminates.

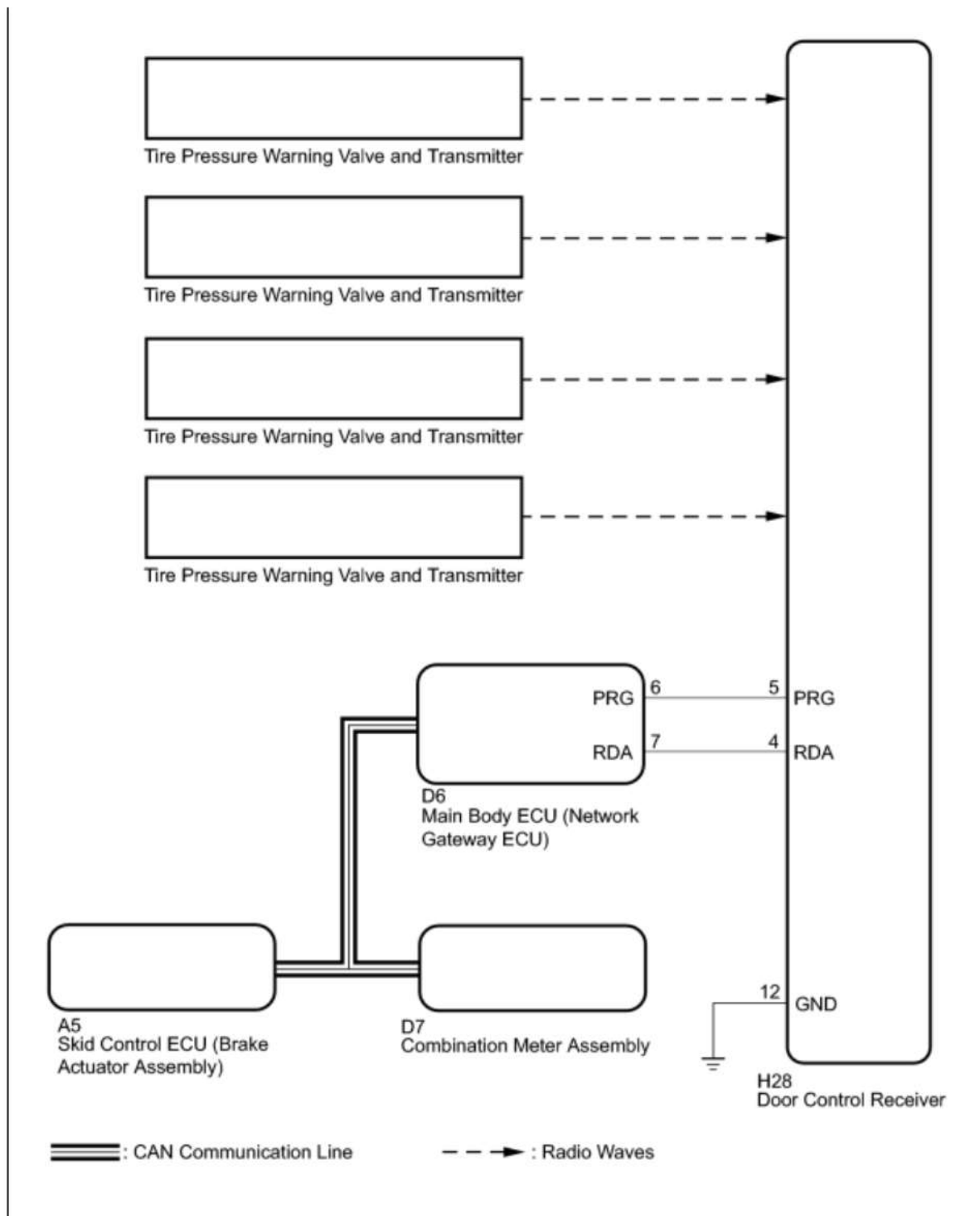
When the door control receiver successfully receives radio waves from all the transmitters whose IDs are stored in the ECU, DTC C2126 is cleared and the tire pressure warning light goes off.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2126	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 • Door control receiver

HINT:

The purpose of this DTC is to help prevent delivering a vehicle that has incorrectly registered IDs. After all IDs are registered, DTC C2126 is detected and the tire pressure warning light blinks for 1 minute and then illuminates. If the tire pressure warning light does not turn off after a little while, IDs may be incorrectly registered.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement INFO.

PROCEDURE

1. IDENTIFY TRANSMITTER NOT RECEIVED

- (a) Set the tire pressure to the specified values  .
- (b) Turn the ignition switch off.
- (c) Connect the Techstream to the DLC3.
- (d) Turn the ignition switch to ON.
- (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 / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
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HINT:

*: It may take a few minutes until the values are displayed.

(h) Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kgf/cm² , 5.8 psi) within 30 seconds.

(i) Check the Data List.

NOTICE:

- It may take a few 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 the data.
 - 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 ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.

(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.

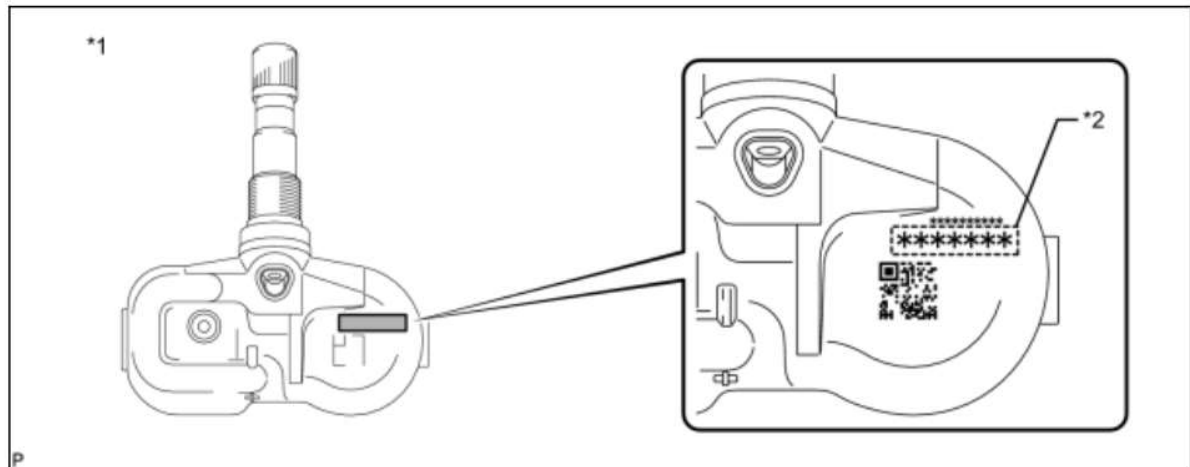
Tire Pressure Monitor

TESTER DISPLAY	MEASUREMENT ITEM/DISPLAY	NORMAL CONDITION	DIAGNOSTIC NOTE
Registered ID1 Code	Registered ID1 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID1 displayed	-
Registered ID2 Code	Registered ID2 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID2 displayed	-
Registered ID3 Code	Registered ID3 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID3 displayed	-
Registered ID4 Code	Registered ID4 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for 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.



Text in Illustration

*1	Tire pressure warning valve and transmitter	*2	Transmitter ID (7-digit number)
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(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.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)
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- (a) Turn the ignition switch off.
- (b) Connect Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (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/ min.: Absolute pressure / 50 kPa		

ID1 Tire Inflation Pressure	(0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take a few 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 the data.

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 DOOR CONTROL RECEIVER



cardiagn.com

Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XN408JX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2141-C2144: Transmitter ID1 Error (2013 FR-S)		

DTC	C2141	Transmitter ID1 Error
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DTC	C2142	Transmitter ID2 Error
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DTC	C2143	Transmitter ID3 Error
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DTC	C2144	Transmitter ID4 Error
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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 door control receiver in the vehicle as radio waves. 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 assembly illuminates.

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2141	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.	- Tire pressure warning valve and transmitter - Door control receiver
C2142	This will happen in situations where the inflation pressure is outside the	
C2143	range -50 to 380 kPa (-0.5 to 3.9 kgf/cm ² , -7 to 55 psi), the	
C2144	temperature inside the tire is outside the specified range -40 to 120°C (-40 to 248°F), or an error occurs in the tire pressure warning valve and transmitter or the surrounding area.	

HINT:

It is necessary to perform the following 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 door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.

- It is necessary to perform registration **INFO** of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement **INFO** .

PROCEDURE

1. IDENTIFY TRANSMITTER CORRESPONDING TO DTC

- Set the tire pressure to the specified value **INFO** .
- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Chassis / Tire Pressure Monitor / Data List.
- Display the "ID Tire Inflation Pressure" data for each wheel using the Techstream.
- Rapidly reduce the tire pressure for each wheel at least 40 kPa (0.4 kg/cm² , 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 / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi)	Actual tire inflation	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

Pressure	max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	pressure	² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

*: It may take a few 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 to C2124

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:

- It may take a few 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 the data.
- 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) has changed, identify the malfunctioning tire pressure warning valve and transmitter using the recorded ID numbers and output DTCs.

NEXT

2.	REPLACE TIRE PRESSURE WARNING VALVE AND TRANSMITTER
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(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
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(a) Register the transmitter ID for all wheels INFO.

NEXT

4.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)
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- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (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/ min.: Absolute pressure / 50 kPa		

ID1 Tire Inflation Pressure	(0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take a few 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 the data.

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 DOOR CONTROL RECEIVER



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Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002DZY05VX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2171: Transmitter ID not Registered (2013 FR-S)		

DTC	C2171	Transmitter ID not Registered
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DESCRIPTION

The IDs of each tire pressure warning valve and transmitter are registered to the door control receiver.

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2171	Transmitter ID code is not registered. (When an ID code is unregistered for 3 minutes or more)	Door control receiver

INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration **INFO** of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement **INFO**.

PROCEDURE

1.	CONFIRM REGISTRATION CONDITION (REGISTERED ID CODES)
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- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Chassis / Tire Pressure Monitor / Data List.
- Check the values by referring to the table below.

Tire Pressure Monitor

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Registered ID1	Registered ID1 code/	ID No. registered for transmitter ID1	

code	min.: 0 max.: FFFFFFFF*	displayed	-
Registered ID2 code	Registered ID2 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID2 displayed	-
Registered ID3 code	Registered ID3 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for transmitter ID3 displayed	-
Registered ID4 code	Registered ID4 code/ min.: 0 max.: FFFFFFFF*	ID No. registered for 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 DOOR CONTROL RECEIVER**

2.	PERFORM REGISTRATION (TRANSMITTER ID)
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(a) Register the transmitter IDs for all the wheels  .

NEXT

3.	CONFIRM TIRE INFLATION PRESSURE (DATA LIST)
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- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (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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ID1 Tire Inflation Pressure	ID1 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take a few 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 the data.

Result:

RESULT	PROCEED TO
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All tire pressure readings are equal to specified values.	A
Tire pressure values are not displayed.	B

B ▶ REPLACE DOOR CONTROL RECEIVER

A ▶ END



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000026PN07UX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2176: Receiver Error (2013 FR-S)		

DTC	C2176	Receiver Error
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DESCRIPTION

The signals are transmitted to the door control receiver in the vehicle as radio waves.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2176	Malfunction in the door control receiver internal circuit	Door control receiver

INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration **INFO** of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement **INFO** .

PROCEDURE

1.	CHECK DTC OUTPUT (C2176)
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- (a) Clear the DTCs **INFO** .
- (b) Turn the ignition switch off.
- (c) Turn the ignition switch to ON and check for DTCs **INFO** .
- OK:
DTC C2176 is not output.

NG ► **REPLACE DOOR CONTROL RECEIVER**

OK ► **END**



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000Z8107LX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2177: Initialization not Completed (2013 FR-S)		

DTC	C2177	Initialization not Completed
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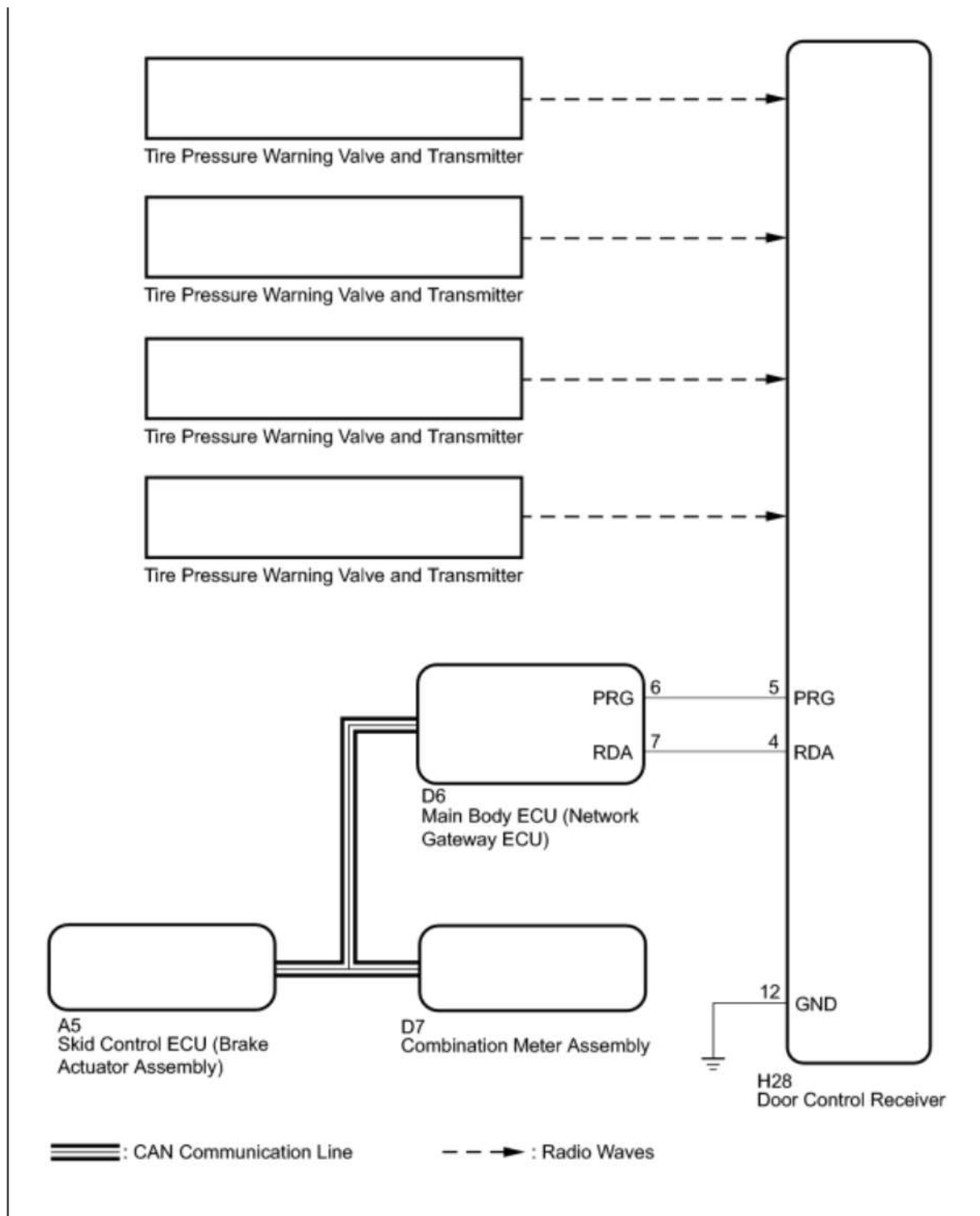
DESCRIPTION

Initialization is necessary if one of the following occurs:

- The door control receiver is replaced.
- A tire pressure warning valve and transmitter is replaced.
- Tires with a different tire standard pressure are installed.
- The tires are rotated.
- A new vehicle is delivered.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2177	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 37 km/h (23 mph) for a total of 20 minutes	• Tire pressure warning valve and transmitter • Wire harness or connector • Door control receiver

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement INFO.

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 such as the one 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 ignition switch off.
 (b) Connect the Techstream to the DLC3.
 (c) Turn the ignition switch to ON.
 (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/ min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative		

ID1 Tire Inflation Pressure	pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*

HINT:

- *: It may take a few 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 the data.

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 TO C2124**

A ► **END**



Last Modified: 3-27-2012	6.4 C	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003B9X02AX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: C2179: Tire Pressure Monitor ECU Communication Stop (2013 FR-S)		

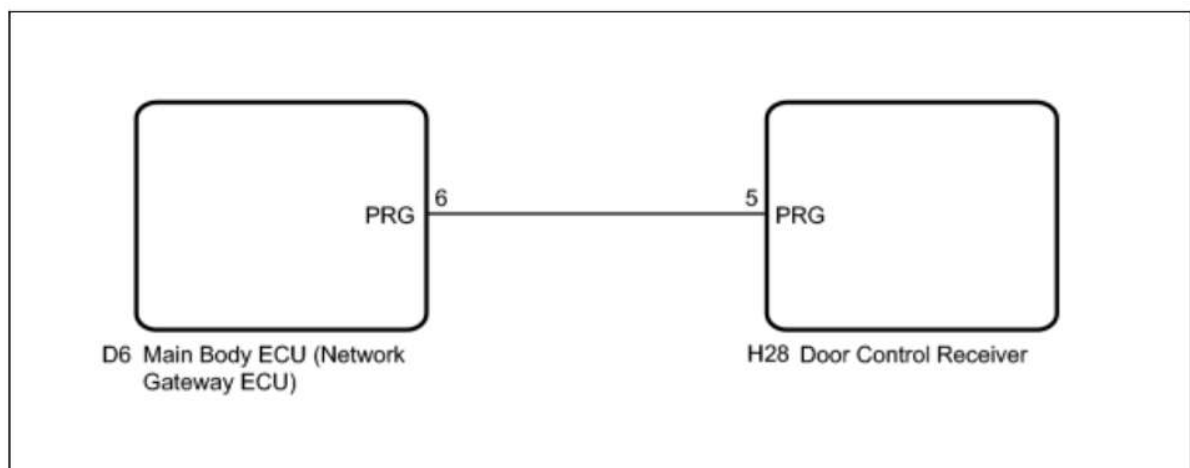
DTC	C2179	Tire Pressure Monitor ECU Communication Stop
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DESCRIPTION

The main body ECU (network gateway ECU) sends signals to the door control receiver via a direct line.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
C2179	Communication between the main body ECU (network gateway ECU) and door control receiver is interrupted for 10 seconds or more.	• Main body ECU (network gateway ECU) • Wire harness or connector • Door control receiver

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration INFO of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement INFO .

PROCEDURE

1.

CHECK HARNESS AND CONNECTOR (DOOR CONTROL RECEIVER - MAIN BODY ECU (NETWORK GATEWAY ECU))

- (a) Disconnect the H28 door control receiver connector and the D6 main body ECU (network gateway ECU) connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
H28-5 (PRG) - D6-6 (PRG)	Always	Below 1 Ω
H28-5 (PRG) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK


2.

REPLACE DOOR CONTROL RECEIVER

- (a) Replace the door control receiver  .

NEXT


3.

CHECK DTC OUTPUT

- (a) Clear the DTCs  .
- (b) Turn the ignition switch off.
- (c) Turn the ignition switch to ON.
- (d) Check for DTCs  .

OK:

DTC C2179 is not output.

NG  **REPLACE MAIN BODY ECU (NETWORK**

GATEWAY ECU)

OK ► END



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Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMY07AX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: DATA LIST / ACTIVE TEST (2013 FR-S)		

DATA LIST / ACTIVE TEST

1. READ 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.

- Turn the ignition switch off.
- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Chassis / Tire Pressure Monitor / Data List.
- 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/ 4 or 5	4 to 5 displayed	-
Initialization Switch*3	Tire pressure warning reset switch/ ON, OFF	ON: Switch on OFF: Switch off	-
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 assembly
Registered ID1 Code	Registered ID1 code/ min.: 0, max.: FFFFFFFF*1	ID No. registered for transmitter ID1	-

		displayed	
Registered ID2 Code	Registered ID2 code/ min.: 0, max.: FFFFFFFF*1	ID No. registered for transmitter ID2 displayed	-
Registered ID3 Code	Registered ID3 code/ min.: 0, max.: FFFFFFFF*1	ID No. registered for transmitter ID3 displayed	-
Registered ID4 Code	Registered ID4 code/ min.: 0, max.: FFFFFFFF*1	ID No. registered for transmitter ID4 displayed	-
Registered ID5 Code*3	Registered ID5 code/ min.: 0, max.: FFFFFFFF*1	ID No. registered for transmitter ID5 displayed	-
ID1 Temperature in Tire	ID1 temperature in tire/ min.: -40°C (-40°F), max.: 120°C (248°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.: 120°C (248°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.: 120°C (248°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.: 120°C (248°F)	Actual tire temperature	If -40°C (-40°F) is displayed, data has not been received.
ID5 Temperature in Tire*3	ID5 temperature in tire/ min.: -40°C (-40°F), max.: 120°C (248°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	-

ID5 Battery Voltage*3	ID5 battery voltage/OVER or LESS	OVER	-
Initialization Switch Info*3	Tire pressure warning reset switch setting information/ WITH or WITHOUT	WITHOUT	-
ID1 Tire Inflation Pressure	ID1 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*2
ID2 Tire Inflation Pressure	ID2 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*2
ID3 Tire Inflation Pressure	ID3 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*2
ID4 Tire Inflation Pressure	ID4 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Actual tire inflation pressure	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5 kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*2
ID5 Tire	ID5 tire inflation pressure / min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-	Actual tire	If 50 kPa (0.5 kgf/cm ² , 7 psi) is displayed for absolute pressure or -50 kPa (-0.5

Inflation Pressure*3	0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	inflation pressure	kgf/cm ² , -7 psi) is displayed for relative pressure, data has not been received.*2
ID1 Initial Threshold of Low-pressure	ID1 initial threshold of low-pressure/ min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Tire pressure after initialization	-
ID2 Initial Threshold of Low-pressure	ID2 initial threshold of low-pressure/ min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Tire pressure after initialization	-
ID3 Initial Threshold of Low-pressure	ID3 initial threshold of low-pressure/ min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Tire pressure after initialization	-
ID4 Initial Threshold of Low-pressure	ID4 initial threshold of low-pressure/ min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Tire pressure after initialization	-
	ID5 initial threshold of low-		

ID5 Initial Threshold of Low-pressure*3	pressure/ min.: Absolute pressure / 50 kPa (0.5 kgf/cm ² , 7 psi), Relative pressure / -50 kPa (-0.5 kgf/cm ² , -7 psi) max.: Absolute pressure / 480 kPa (4.9 kgf/cm ² , 70 psi), Relative pressure / 380 kPa (3.9 kgf/cm ² , 55 psi)	Tire pressure after initialization	-
Number of Trouble Code	Number of DTCs recorded/min.: 0, max.: 255	Min.: 0, Max.: -	-

HINT:

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

***2: It may take a few 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 to C2124**

INFO .

***3: This item is displayed on the Techstream, however, it is not used for this vehicle.**

2. PERFORM 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 ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (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



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMW081X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: DIAGNOSIS SYSTEM (2013 FR-S)		

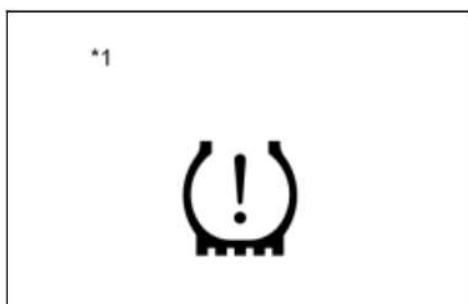
DIAGNOSIS SYSTEM

1. CHECK WARNING LIGHT

NOTICE:

- When there is a problem with the tire pressure warning system, the tire pressure warning light blinks at 0.5 second intervals, and illuminates after 1 minute.
- When the malfunction has been corrected, the tire pressure warning light does not illuminate.
- When the tire pressure warning light illuminates, immediately check the tire pressures of the tire and adjust it to the specified value(s).
- After the ignition switch is turned to ON, the tire pressure warning light illuminates for 3 seconds and then goes off. If the warning light does not illuminate for 3 seconds, proceed to the troubleshooting for the tire pressure warning light circuit INFO.

(a) Turn the ignition switch to ON.



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

Text in Illustration

*1	Tire Pressure Warning Light
----	-----------------------------

2. WHAT TO CONSIDER WHEN TIRE PRESSURE WARNING LIGHT ILLUMINATES

- (a) When the tire pressure warning light does not go off, or when it illuminates during driving, check the tire pressure. If the tire pressure warning light illuminates within several hours after adjusting the tire pressure, the tire may have a slow air leak.
- (b) The system is disabled in the following conditions (when the condition becomes normal, the system will work properly).
- (1) When all of the tires and wheels that have the tire pressure warning valve and transmitters registered with the door control receiver have not been installed.
 - (2) When all of the transmitter ID codes are not registered with the door control receiver.
 - (3) When the tire pressure is abnormally high (absolute pressure: 480 kPa (4.9 kgf/cm², 70 psi) or more; relative pressure: 380 kPa (3.9 kgf/cm², 55 psi) or more).
 - (4) When the tire pressure warning valve and transmitter battery is depleted.
- (c) The system may become disabled in the following conditions (when the condition becomes normal, the system will work properly).
- (1) When electric devices or facilities using similar radio frequencies are nearby.
 - (2) When a wireless device or other equipment operating at a similar frequency is in use in the

vehicle.

- (3) When a window tint that affects radio wave signals is installed.
- (4) When there is a lot of snow or ice on the vehicle, in particular, around the wheels or wheel housing.
- (5) When non-genuine wheels are used.
- (6) When tire chains are used.
- (7) When aftermarket tire repair sealant is used.

CAUTION:

After use of tire repair sealant, replacement of the tire pressure warning valve and transmitter is required to ensure normal system operation. (Normal system operation cannot be ensured by only repairing or replacing the tire.)

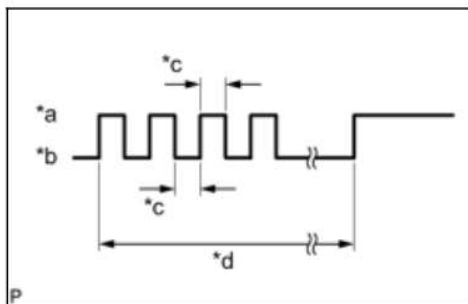
3. TIRE PRESSURE WARNING LIGHT AND INDICATOR CHART

HINT:

The table below indicates the state of the tire pressure warning light after the ignition switch is turned to ON.

	IMMEDIATELY AFTER TURNING THE IGNITION SWITCH TO ON	ALWAYS			
		WARNING LIGHT OUTPUT PATTERN			
		GOES OFF	ILLUMINATES	BLINKS*1	BLINKS*2
Normal	○	○	-	-	-
Low tire pressure	○	-	○	-	-
System failure	○	-	-	○	-
Test mode (signal check mode)	○	-	-	-	○
ECU connector poorly connected	-	-	-	○	-

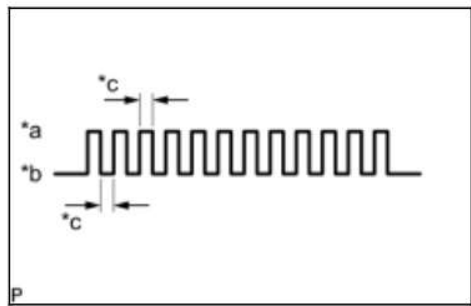
*1: Illuminates and goes off repeatedly at 0.5 second intervals, and illuminates after 1 minute.



Text in Illustration

*a	ON
*b	OFF
*c	0.5 sec.
*d	1 minute

*2: Illuminates and goes off repeatedly at 0.125 second intervals.



Text in Illustration

*a	ON
*b	OFF
*c	0.125 sec.

4. Normal mode DTCs

- (a) DTCs are stored in the door control receiver and output by the blinking of tire pressure warning light or by using the Techstream [INFO](#) .

5. Test mode (signal check mode) DTCs

- (a) By switching from normal mode into test mode (input signal check), you can inspect the door control receiver, each tire pressure warning valve and transmitter [INFO](#) .

6. FAIL-SAFE FUNCTION

- (a) When a system malfunction occurs in the tire pressure warning system, the tire pressure warning light illuminates after blinking for 1 minute to inform the driver of the system failure.
- (b) The result of this diagnosis code is stored in the door control receiver.



Last Modified: 3-27-2012	6.4 S	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMR06UX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: DIAGNOSTIC TROUBLE CODE CHART (2013 FR-S)		

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.

Door Control Receiver

DTC CODE	DETECTION ITEM	SEE PAGE
C2111	Transmitter ID1 Operation Stop	INFO
C2112	Transmitter ID2 Operation Stop	INFO
C2113	Transmitter ID3 Operation Stop	INFO
C2114	Transmitter ID4 Operation Stop	INFO
C2121	No Signal from Transmitter ID1	INFO
C2122	No Signal from Transmitter ID2	INFO
C2123	No Signal from Transmitter ID3	INFO
C2124	No Signal from Transmitter ID4	INFO
C2126	Transmitter ID not Received in Main Mode	INFO
C2141	Transmitter ID1 Error	INFO
C2142	Transmitter ID2 Error	INFO
C2143	Transmitter ID3 Error	INFO
C2144	Transmitter ID4 Error	INFO
C2171	Transmitter ID not Registered	INFO
C2176	Receiver Error	INFO
C2177	Initialization not Completed	INFO
C2179	Tire Pressure Monitor ECU Communication Stop	INFO
C2181	Transmitter ID1 not Received (Test Mode DTC)	INFO
C2182	Transmitter ID2 not Received (Test Mode DTC)	INFO
C2183	Transmitter ID3 not Received (Test Mode DTC)	INFO
C2184	Transmitter ID4 not Received (Test Mode DTC)	INFO

Main Body ECU (Network Gateway ECU)

DTC CODE	DETECTION ITEM	SEE PAGE

B1247	Tire Pressure Monitor Receiver Communication Stop	INFO
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Model Year: 2013	Model: FR-S	Doc ID: RM000000XMX081X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: DTC CHECK / CLEAR (2013 FR-S)		

DTC CHECK / CLEAR

1. CHECK DTC (for DOOR CONTROL RECEIVER)

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.
- (f) Read the DTCs.

2. CHECK DTC (for MAIN BODY ECU (NETWORK GATEWAY ECU))

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Main Body / Trouble Codes.
- (f) Read the DTCs.

3. CLEAR DTC (for DOOR CONTROL RECEIVER)

HINT:

After repairing the malfunctions, clear the DTCs.

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (d) Turn the Techstream on.
- (e) Enter the following menus: Chassis / Tire Pressure Monitor / Trouble Codes.
- (f) Clear DTCs following the prompts on the Techstream screen.

HINT:

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

4. CLEAR DTC (for MAIN BODY ECU (NETWORK GATEWAY ECU))

HINT:

After repairing the malfunctions, clear the DTCs.

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.

- (d) Turn the Techstream on.
- (e) Enter the following menus: Body Electrical / Main Body / Trouble Codes.
- (f) Clear DTCs following the prompts on the Techstream screen.

HINT:

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



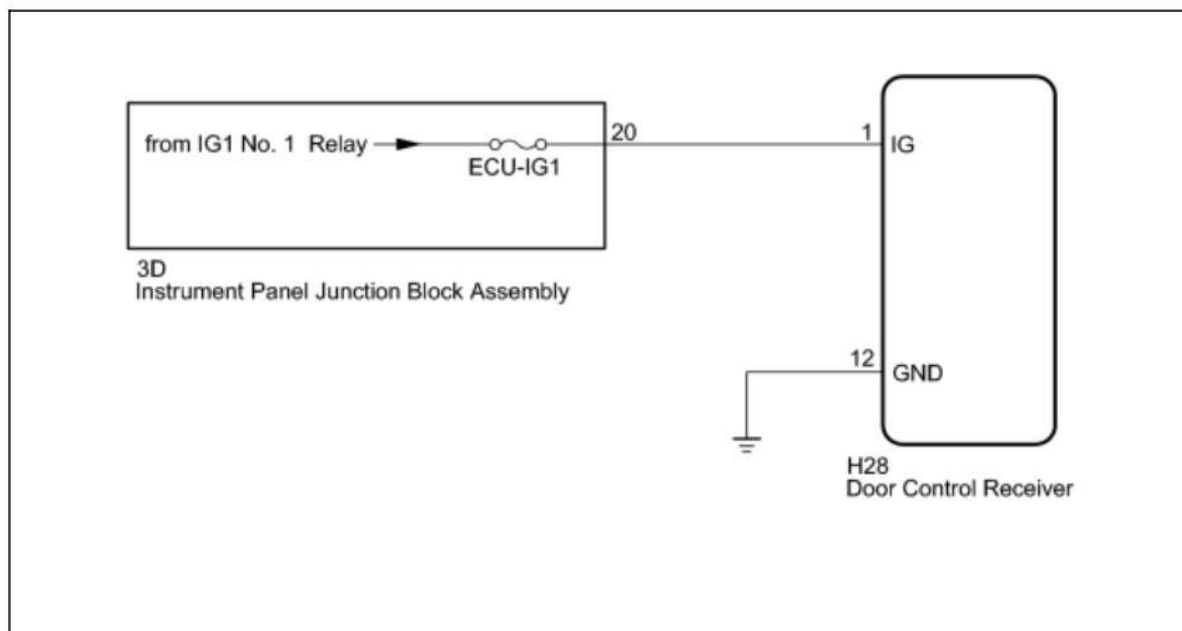
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XN206LX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: ECU Power Source Circuit (2013 FR-S)		

ECU Power Source Circuit

DESCRIPTION

This is the power source for the door control receiver.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.
- It is necessary to perform registration INFO of the transmitter IDs into the door control receiver after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement INFO .

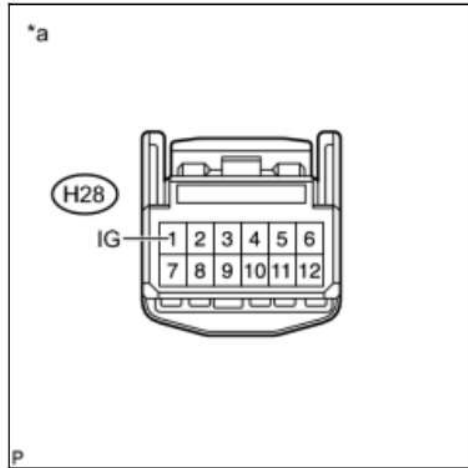
HINT:

Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (DOOR CONTROL RECEIVER - BATTERY AND BODY GROUND)

(a) Disconnect the H28 door control receiver connector.



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

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
H28-1 (IG) - Body ground	Ignition switch ON	11 to 14 V
	Ignition switch off	Below 1 V

Text in Illustration

*a	Front view of wire harness connector (to Door Control Receiver)
----	--

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
H28-12 (GND) - Body ground	Always	Below 1 Ω

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK **REPLACE DOOR CONTROL RECEIVER**



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMQ07IX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2013 FR-S)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the tire pressure warning system.
- Make sure that the wireless door lock control system has exited diagnostic mode before performing the following procedure.
- *: 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 ignition switch off.
- (b) Set the all tire pressure to the specified value [INFO](#) .
- (c) Connect the Techstream to the DLC3.
- (d) Turn the ignition switch to ON.
- (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 a few 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 remains on	A
Tire pressure warning light goes off	B

B ► GO TO STEP 11**A**

4.	CHECK ECU CONNECTED TO CAN BUS*
-----------	--

(a) Check the ECUs connected to the CAN bus .

Result:

RESULT	PROCEED TO
No malfunction appears	A
Malfunction appears	B

B ► Go to CAN COMMUNICATION SYSTEM**A**

5.	CHECK FOR DTC (CAN COMMUNICATION SYSTEM)*
-----------	--

(a) Check for DTCs .

Result:

RESULT	PROCEED TO
CAN system DTC is not output	A
CAN system DTC is output	B

B  **Go to CAN COMMUNICATION SYSTEM**

A


6.	CHECK FOR DTC*
-----------	-----------------------

(a) Check for DTCs  .
Result:

RESULT	PROCEED TO
DTC is output	A
DTC is not output	B

B  **GO TO STEP 8**

A


7.	DTC CHART
-----------	------------------

(a) Refer to Diagnostic Trouble Code Chart  .

NEXT  **GO TO STEP 10**

8.	PROBLEM SYMPTOMS TABLE
-----------	-------------------------------

(a) Refer to Problem Symptoms Table  .

NEXT


9.	CIRCUIT INSPECTION*
-----------	----------------------------

(a) Refer to Electronic Circuit Inspection Procedure  .

NEXT
▼

10.	REPAIR OR REPLACE
------------	--------------------------

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

NEXT
▼

11.	CONFIRMATION TEST*
------------	---------------------------

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

NEXT ► **END**

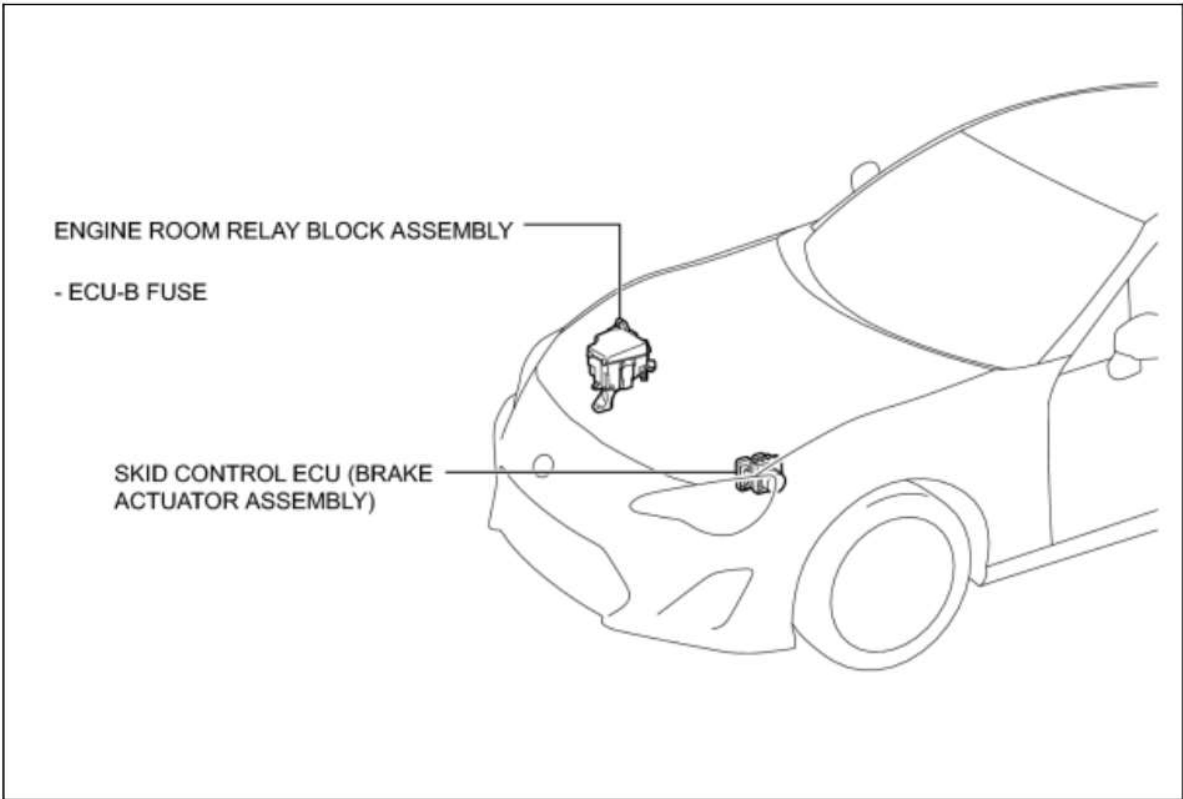


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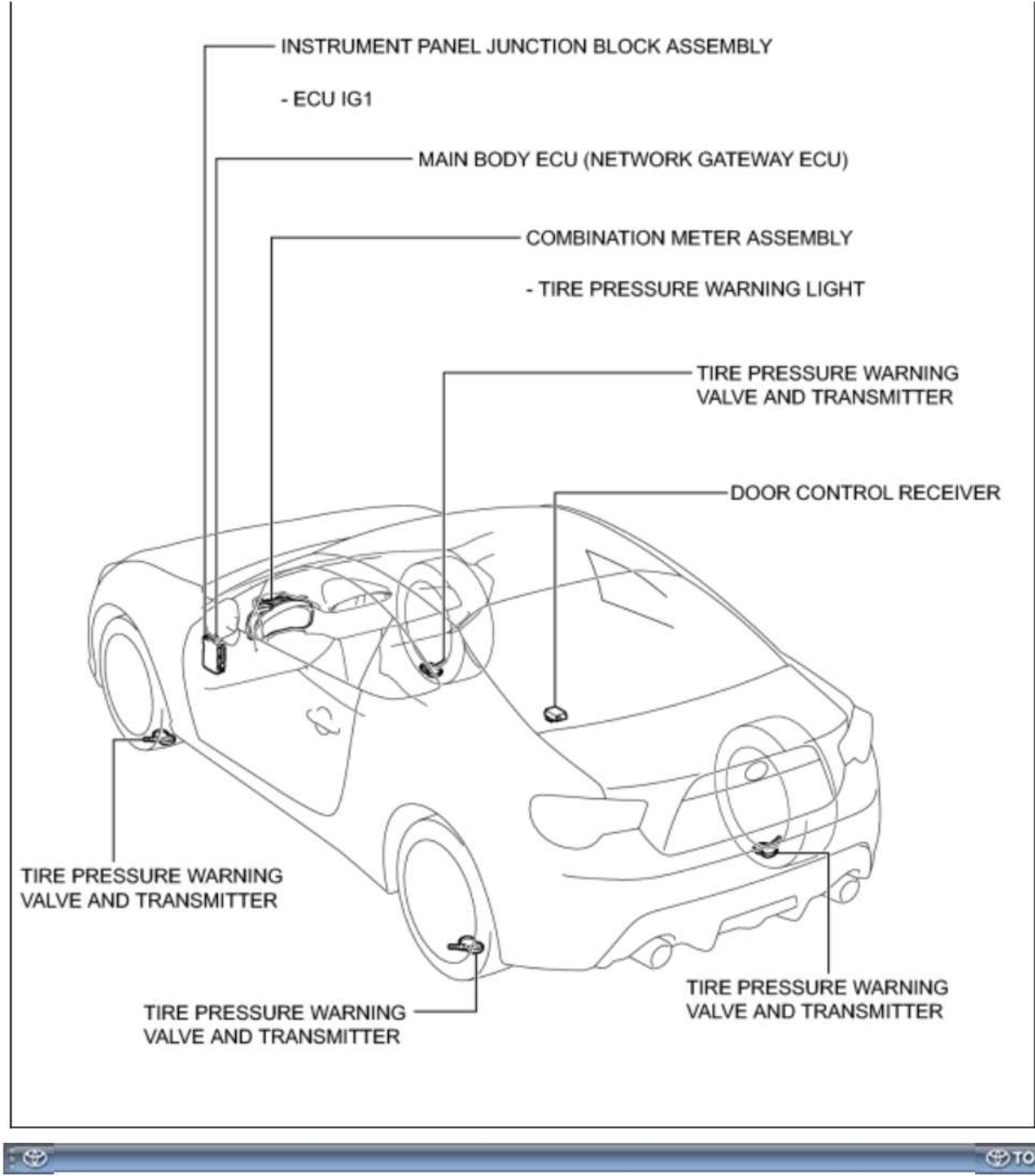
Last Modified: 3-27-2012	6.4 R	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XML063X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: PARTS LOCATION (2013 FR-S)		

PARTS LOCATION

ILLUSTRATION



ILLUSTRATION



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Last Modified: 3-27-2012	6.4 L	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMK07SX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: PRECAUTION (2013 FR-S)		

PRECAUTION

1. TIRE PRESSURE WARNING SYSTEM PRECAUTION

- (a) It is necessary for the tire pressures to be adjusted periodically because tire pressure decreases naturally over time.
- (b) In winter, tire pressure may decrease due to low ambient temperatures (tire pressure decreases by approximately 10 kPa (0.1 kgf/cm², 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, add enough so that the tire pressures are suitable under cold conditions. As a result, unnecessary tire pressure warning operation should decrease.
- (c) Depending on the tire type, the system may not function properly even if the specified wheels are used.
- (d) To prevent damage to the tire pressure warning valve and transmitter, make sure that the tire pressure warning valve and transmitter does not interfere with the tire bead when installing or removing a tire.
- (e) To prevent damage to the tire pressure warning valve and transmitter, before disengaging the tire bead or removing the tire from the wheel, drop the tire pressure warning valve and transmitter into the wheel.
- (f) Always use a new grommet, washer and nut when installing a tire pressure warning valve and transmitter, to ensure the sealing performance.
- (g) When one or more tire pressure warning valve and transmitters or the door control receiver is replaced, the transmitter IDs for all of the tire pressure warning valve and transmitters must be re-registered. Before registering the transmitter ID of the new tire pressure warning valve and transmitter, check the Data List and record all of the transmitter IDs that are already registered.
- (h) Use only a specified cap. If an unspecified cap is used, it may seize to the tire pressure warning valve and transmitter.
- (i) The system is disabled in the following conditions (when the condition becomes normal, the system will work properly).
 - (1) When all of the tires and wheels that have the tire pressure warning valve and transmitters registered with the door control receiver have not been installed.
 - (2) When all of the transmitter ID codes are not registered with the door control receiver.
 - (3) When the tire pressure is abnormally high (absolute pressure: 480 kPa (4.9 kgf/cm², 70 psi) or more; relative pressure: 380 kPa (3.9 kgf/cm², 55 psi) or more).
 - (4) When the tire pressure warning valve and transmitter battery is depleted.
- (j) The system may become disabled in the following conditions (when the condition becomes normal, the system will work properly).
 - (1) When electric devices or facilities using similar radio frequencies are nearby.
 - (2) When a wireless device or other equipment operating at a similar frequency is in use in the vehicle.
 - (3) When a window tint that affects radio wave signals is installed.
 - (4) When there is a lot of snow or ice on the vehicle, in particular, around the wheels or wheel

housing.

- (5) When non-genuine wheels are used.
- (6) When tire chains are used.
- (7) When aftermarket tire repair sealant is used.

CAUTION:

After use of tire repair sealant, replacement of the tire pressure warning valve and transmitter is required to ensure normal system operation. (Normal system operation cannot be ensured by only repairing or replacing the tire.)



Last Modified: 3-27-2012	6.4 T	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMT07BX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: PROBLEM SYMPTOMS TABLE (2013 FR-S)		

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	Check Data List (ID Tire Inflation Pressure)	INFO
	ID code check (Registration)	INFO
Tire pressure warning light remains illuminated (Goes off during initial check)	Tire pressure warning light circuit	INFO
Tire pressure warning light remains illuminated (Illuminates during initial check)	Check Data List (ID Tire Inflation Pressure)	INFO
	Tire pressure adjustment	INFO
	ID code check (Registration)	INFO



Last Modified: 3-27-2012	6.4 M	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XN108GX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: REGISTRATION (2013 FR-S)		

REGISTRATION

1. BEFORE REGISTRATION

NOTICE:

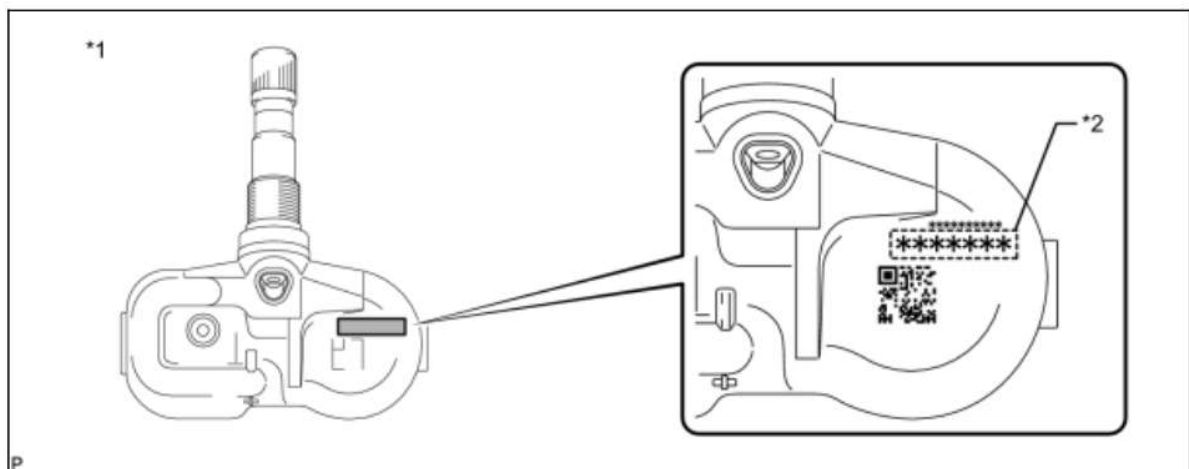
The transmitter ID is written on the tire pressure warning valve and transmitter. It is not possible to read the transmitter ID after installing the tire onto the wheel. Therefore, make a note of the transmitter ID before installing the tire.

(a) In case of door control receiver replacement:

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

(b) In case of tire pressure warning valve and transmitter replacement:

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



Text in Illustration

*1	Tire Pressure Warning Valve and Transmitter	*2	Transmitter ID (7 Digit Number)
----	---	----	---------------------------------

2. REGISTER TRANSMITTER ID (USING THE TECHSTREAM)

HINT:

- The previously registered IDs will be cleared from memory when the registration is completed.
- If the ID registration step is not completed within 300 seconds, ID registration will be canceled.

- (a) Set the air pressure of all tires to the specified value(s) INFO.
- (b) Turn the ignition switch off.
- (c) Connect the Techstream to the DLC3.

- (d) Turn the ignition switch to ON and the Techstream on.
- (e) Enter the following menus: Chassis / Tire Pressure Monitor / Utility / ID Registration.
- (f) Perform the procedure displayed on the Techstream.

3. CONFIRMATION OF TRANSMITTER ID REGISTRATION

NOTICE:

- It may take up to a few minutes to update the tire pressure data. If the values are not displayed after a few minutes, perform troubleshooting according to the inspection procedure for DTCs C2121 to C2124 **INFO** .
- If the IDs have not been registered, DTC C2171 is stored in the door control receiver after 3 minutes or more.
- If normal pressure values are displayed, the IDs have been registered 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 is stored in the door control receiver and the tire pressure warning light blinks for 1 minute and then illuminates. When the door control receiver successfully receives signals from all the transmitters whose IDs are stored in the ECU, DTC C2126 is cleared and the tire pressure warning light goes off.

- (a) Enter the following menus: Chassis / Tire Pressure Monitor / Data List.
- (b) Read the "ID Tire Inflation Pressure" values.
- (c) Confirm that the tire pressure data of all tires (except the spare tire) is displayed on the Techstream screen.

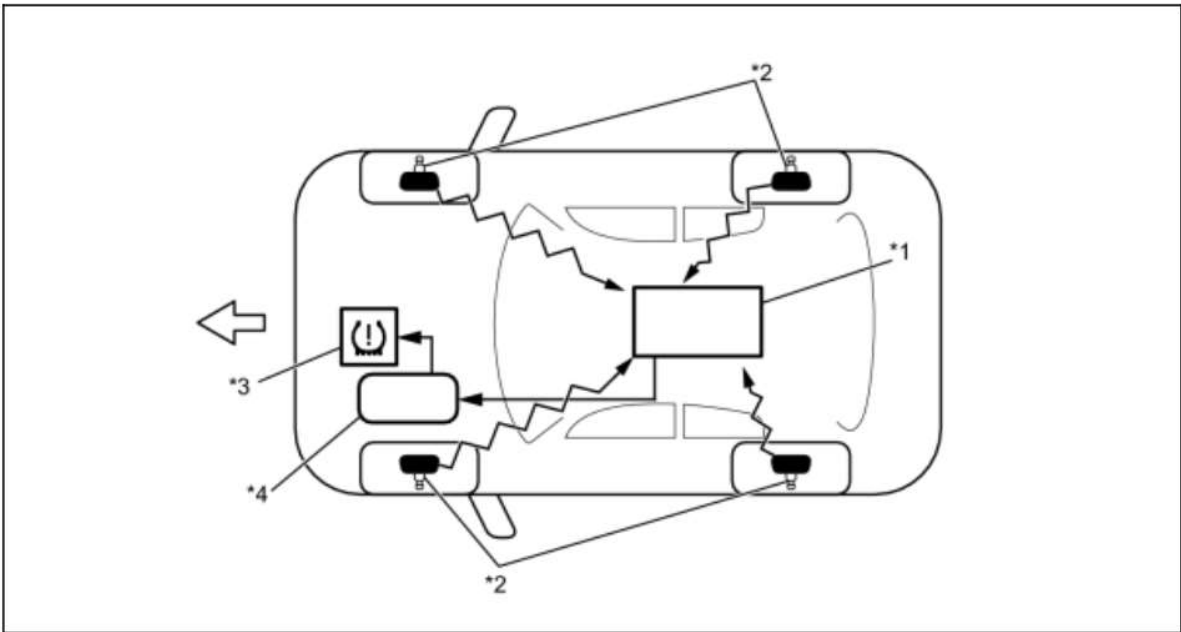


Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMM081X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: SYSTEM DESCRIPTION (2013 FR-S)		

SYSTEM DESCRIPTION

1. DESCRIPTION OF SYSTEM

- (a) When the tire pressure warning system detects that the tire pressure of a tire becomes lower than the threshold, it will inform the driver using a warning light.
- (b) The door control receiver receives the transmitter ID, temperature and tire pressure information from the tire pressure warning valve and transmitters shown in the following illustration. This information is used to determine when the pressure in one of the tires has dropped.



Text in Illustration

*1	Door Control Receiver	*2	Tire Pressure Warning Valve and Transmitter
*3	Combination Meter Assembly - Tire Pressure Warning Light	*4	Main Body ECU (Network Gateway ECU)
	Front	-	-

2. DESCRIPTION OF REGISTRATION

- (a) When tires and wheels are replaced, always ensure that each transmitter ID is correctly registered.
- (b) When one or more tire pressure warning valve and transmitters or the door control receiver is replaced, the transmitter IDs for all of the tire pressure warning valve and transmitters must be re-registered. Before registering the transmitter ID of the new tire pressure warning valve and

transmitter, check the Data List and record all of the transmitter IDs that are already registered.

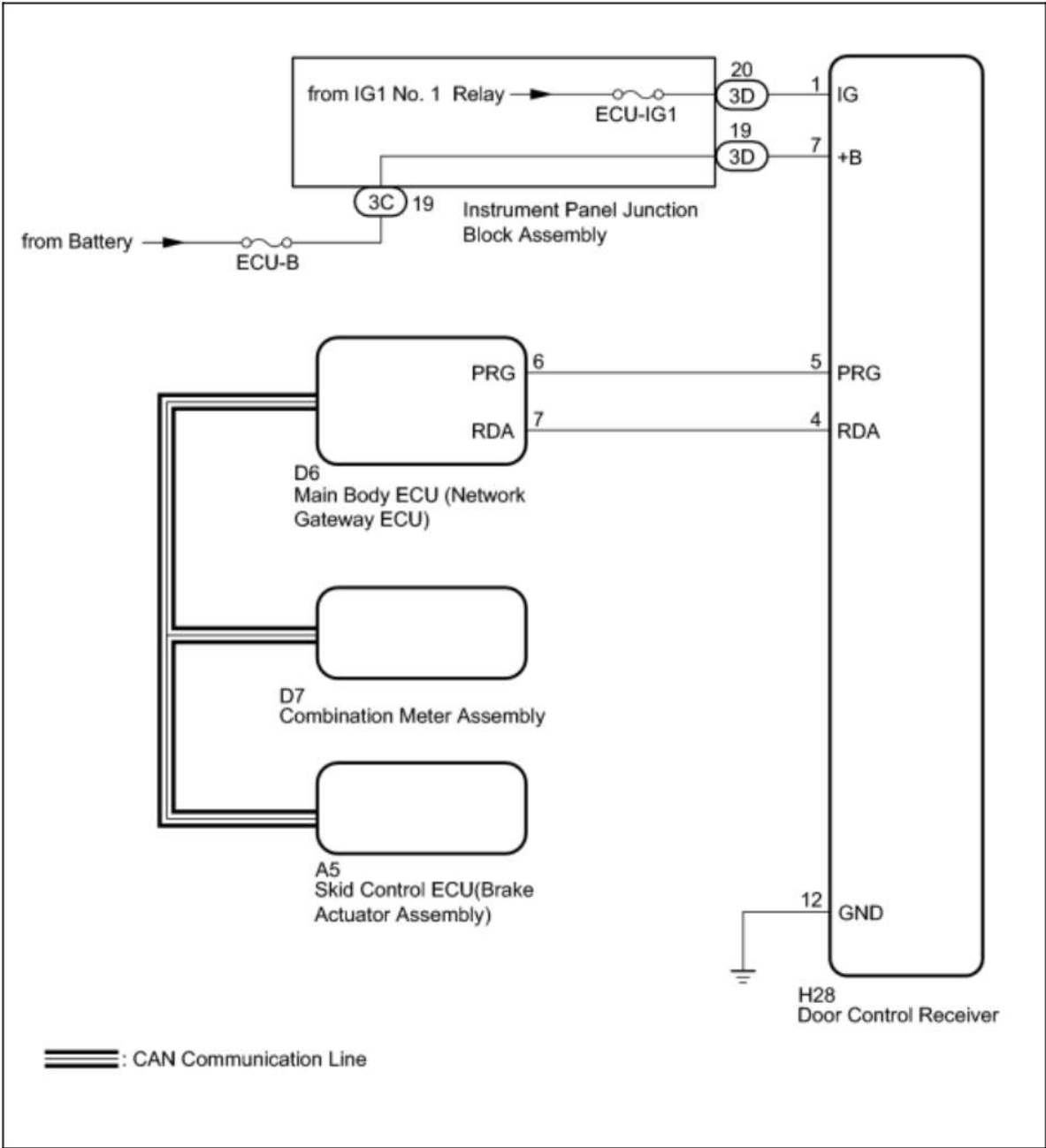
3. FUNCTION OF MAIN COMPONENTS

COMPONENT	FUNCTION
Door Control Receiver	• Receives the data from the tire pressure warning valve and transmitter and monitors the tire pressure. • When the door control receiver detects a drop in the tire pressure, a system malfunction, or initialization mode, it outputs the respective signal to the combination meter assembly. • When the door control receiver detects a problem with the vehicle speed signal, it uses changes in the signal strength from the tire pressure warning valve and transmitter as a judgment standard. If the ECU detects any changes in the signal strength from the tire pressure warning valve and transmitter, it determines that the vehicle is being driven.
Tire Pressure Warning Valve and Transmitter	Detects the pressure and internal temperature of the tire and transmits the measured values and the ID code to the door control receiver.
Combination Meter Assembly	Transmits the tire pressure warning light signal to the door control receiver.
Tire Pressure Warning Light	• Illuminates after blinking for 1 minute to warn the driver in accordance with the signal from the door control receiver. • Displays 2-digit Diagnostic Trouble Codes (DTC).
Main Body ECU (Network Gateway ECU)	• The main body ECU (network gateway ECU) and door control receiver are connected using 2 direct lines that they use to communicate with each other. • The main body ECU (network gateway ECU) is connected to the combination meter assembly via CAN No. 1 bus.



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMN06DX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: SYSTEM DIAGRAM (2013 FR-S)		

SYSTEM DIAGRAM



HINT:

Each tire pressure warning valve and transmitter sends its transmitter ID, temperature and tire pressure information to the door control receiver.

TRANSMITTING ECU	RECEIVING ECU	SIGNAL	COMMUNICATION
------------------	---------------	--------	---------------

(TRANSMITTER)			METHOD
Skid Control ECU (Brake Actuator Assembly)	Main Body ECU (Network Gateway ECU)	Vehicle speed signal	CAN communication line
Main Body ECU (Network Gateway ECU)	Combination Meter Assembly	Tire pressure warning light signal	CAN communication line



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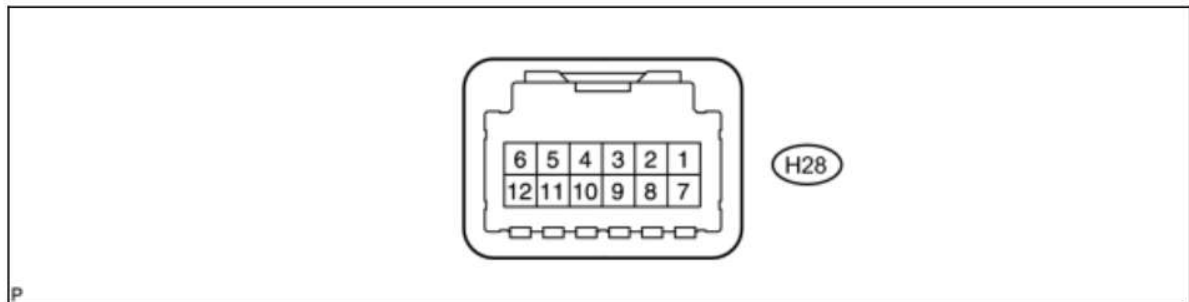
Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XMS054X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: TERMINALS OF ECU (2013 FR-S)		

TERMINALS OF ECU

1. CHECK DOOR CONTROL RECEIVER

HINT:

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



(a) 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
H28-1 (IG) - H28-12 (GND)	W - B	IG power source	Ignition switch ON	11 to 14 V
H28-4 (RDA) - H28-12 (GND)	R - B	Output signals	Ignition switch ON	Pulse generation (see waveform 1)
H28-5 (PRG) - H28-12 (GND)	P - B	Input signals	Ignition switch ON	Pulse generation (see waveform 1)
H28-7 (+B) - H28-12 (GND)	Y-R - B	Power Supply	Always	11 to 14 V
H28-12 (GND) - Body ground	B - Body ground	Ground	Always	Below 1 Ω

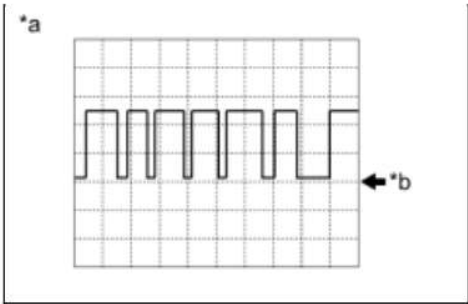
(b) Using an oscilloscope, check waveform 1.

Text in Illustration

*a	Example
*b	GND

Waveform 1:

ITEM	CONTENTS



Terminal	H28-4 (RDA) - H28-12 (GND) H28-5 (PRG) - H28-12 (GND)
Tool setting	5 V/DIV, 50 μ s./DIV.
Vehicle condition	Ignition switch ON

HINT:

The waveform shown in the illustration is an example. If the tester displays a waveform that alternates between high and low, where high is a voltage that is between the IG power source voltage and a voltage 2.2 V lower than the IG power source voltage, and where low is a voltage of between 0 and 1.2 V, the ECU can be judged normal.



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XN008BX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: TEST MODE PROCEDURE (2013 FR-S)		

TEST MODE PROCEDURE

1. TEST MODE (SIGNAL CHECK MODE) PROCEDURE

HINT:

- When entering test mode (signal check mode), the door control receiver sets all the test mode (signal check mode) DTCs first.

After the door control receiver completes the signal check for each inspection item, the DTCs for systems that are determined to be normal will be cleared.

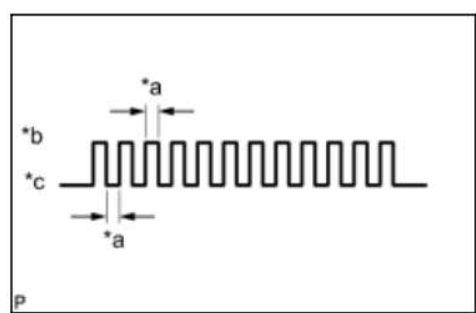
The DTCs for other inspection items may not be cleared when only a certain signal is inspected.

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

- (a) Turn the ignition switch off.
- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON and the Techstream on.
- (d) Enter the following menus: Chassis / Tire Pressure Monitor / Utility / Signal Check.

HINT:

Every time the test mode (signal check mode) DTC clear conditions are satisfied, the tire pressure warning light illuminated for 1 second. Following this, the tire pressure warning light blinks at 0.125 second intervals.



Text in Illustration

*a	0.125 sec.
*b	ON
*c	OFF

- (e) Wait for 1.5 minutes with the vehicle stopped, or drive the vehicle for 1 minute (C21811 to C2184).

HINT:

The tire pressure warning valve and transmitters send signals to the door control receiver once every 1.5 minutes while the vehicle is stopped and once every minute while driving.

(f) Check that the tire pressure warning system test mode (signal check mode) DTCs are cleared.

TEST MODE (SIGNAL CHECK MODE) DTC	TEST SIGNAL	TEST MODE (SIGNAL CHECK MODE) DTC CLEAR CONDITION
C2181 to C2184	Transmitter Data	Data is received from the relevant transmitter which has a registered ID in the door control receiver.

(g) Result

HINT:

After the signal check is completed, check for test mode (signal check mode) DTCs to confirm the system status.

CONDITION	PROCEDURE
Test mode (signal check mode) DTC is output	Repair the faulty part and enter Signal Check again
Test mode (signal check mode) DTCs are cleared	No problem

(h) End of test mode (signal check mode)

(1) After completing the test mode (signal check mode), turn the ignition switch off and disconnect the Techstream.

(i) Test mode (signal check mode) DTCs

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

DTC NO.	DETECTION ITEM	TROUBLE AREA	SEE PAGE
C2181	Transmitter ID1 not received	• Tire pressure warning valve and transmitter • Harness or connector • Door control receiver	INFO
C2182	Transmitter ID2 not received	• Tire pressure warning valve and transmitter • Harness or connector • Door control receiver	INFO
C2183	Transmitter ID3 not received	• Tire pressure warning valve and transmitter • Harness or connector • Door control receiver	INFO
C2184	Transmitter ID4 not received	• Tire pressure warning valve and transmitter • Harness or connector • Door control receiver	INFO



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Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XN305KX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: Tire Pressure Warning Light Circuit (2013 FR-S)		

Tire Pressure Warning Light Circuit

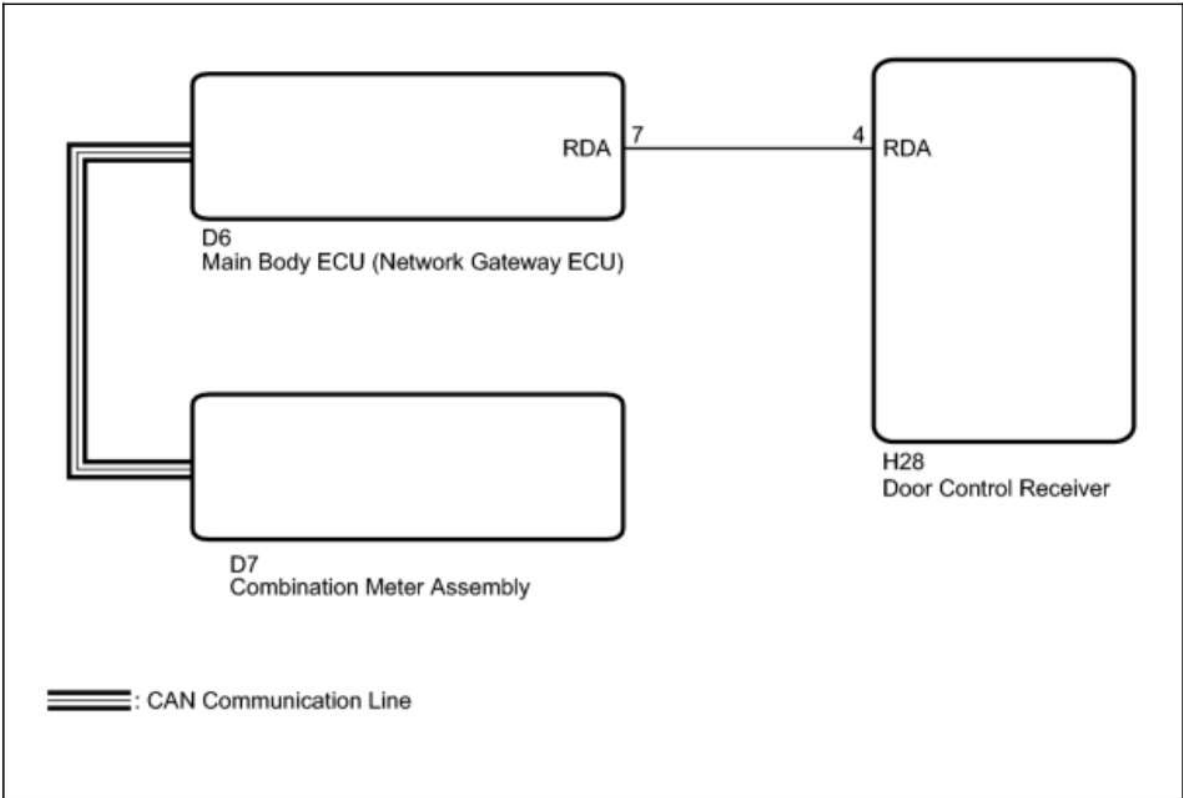
DESCRIPTION

If the door control receiver detects any problems, the tire pressure warning light blinks (stays on after blinking for 1 minute) and tire pressure monitoring is cancelled at the same time. At this time, the ECU stores a DTC in memory.

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

The door control receiver sends the tire pressure warning light illumination request signal to the main body ECU (network gateway ECU) via a direct line. The main body ECU (network gateway ECU) then sends the signal to the combination meter assembly via CAN communication.

WIRING DIAGRAM



INSPECTION PROCEDURE

- NOTICE:
- When replacing the door control receiver, read the IDs stored in the old ECU using the Techstream and write them down before removal.

- It is necessary to perform registration **INFO** of the transmitter IDs into the tire pressure warning ECU after the ECU has been replaced.
- When replacing the door control receiver on vehicles, be sure to perform Registration of Recognition Code to register the transmitter IDs after ECU replacement **INFO** .

PROCEDURE

1. CHECK FOR DTC (CAN COMMUNICATION SYSTEM)

- (a) Check if a CAN communication system DTC is output **INFO** .

Result:

RESULT	PROCEED TO
DTC is not output.	A
DTC is output.	B

B ► GO TO CAN COMMUNICATION SYSTEM

A



2. CHECK DTC OUTPUT (B1247)

- (a) Clear the DTCs **INFO** .
- (b) Turn the ignition switch off.
- (c) Turn the ignition switch to ON.
- (d) Check for DTCs **INFO** .

OK:

DTC B1247 is not output.

NG ► GO TO DTC B1247

OK



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

- (a) Turn the ignition switch off.

- (b) Connect the Techstream to the DLC3.
- (c) Turn the ignition switch to ON.
- (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 tire pressure warning light turns on or off in accordance with the Techstream operation.

NG ► **GO TO METER / GAUGE SYSTEM**

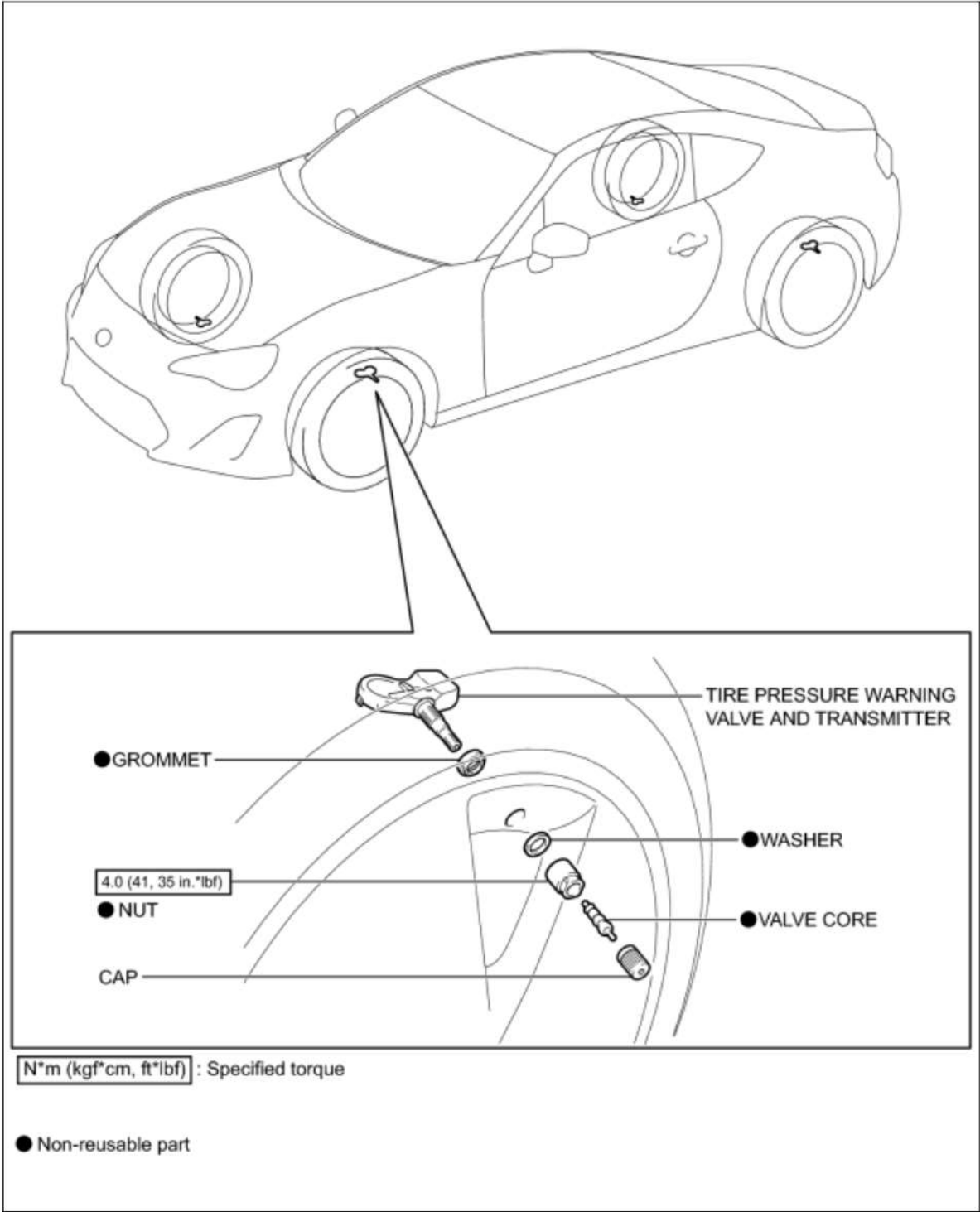
OK ► **REPLACE DOOR CONTROL RECEIVER**



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000XV6042X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING VALVE: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



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Last Modified: 3-27-2012	6.4 N	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000X9J04LX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING VALVE: DISPOSAL (2013 FR-S)		

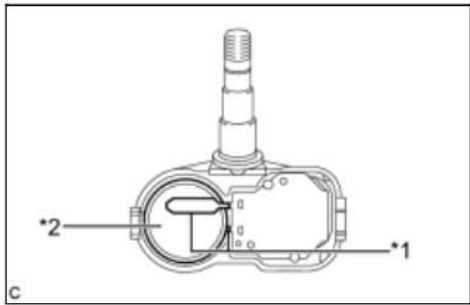
DISPOSAL

HINT:

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

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



Text in Illustration

*1	Terminal
*2	Lithium Battery

HINT:

The battery and base board are covered with urethane.

Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001F7Q04BX
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING VALVE: INSTALLATION (2013 FR-S)		

INSTALLATION

NOTICE:

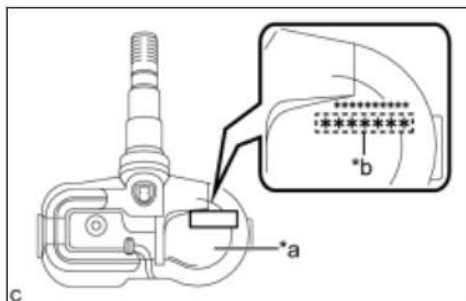
- Always use a new grommet, washer, nut and valve core when installing the tire pressure warning valve and transmitter.
- Make sure not to damage the urethane covered backside of the tire pressure warning valve and transmitter (the surface opposite to the side with the ID code) with anything sharp.
- 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.
- Use only a specified cap. If an unspecified cap is used, it may seize to the tire pressure warning valve and transmitter.

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 from the inside of the rim so that the printed surface can be seen.

Text in Illustration



*a	Printed Surface
*b	7-digit Number Transmitter ID

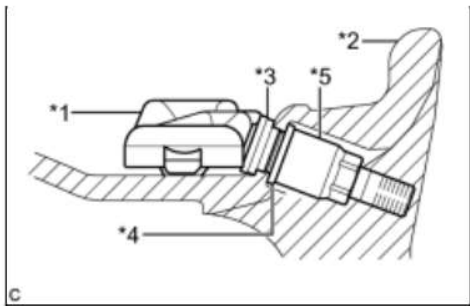
NOTICE:

- 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) From the outside of the rim, install a new washer onto the tire pressure warning valve and transmitter, and tighten a new nut.

Text in Illustration

*1	Tire Pressure Warning Valve and Transmitter
*2	Rim
*3	Grommet



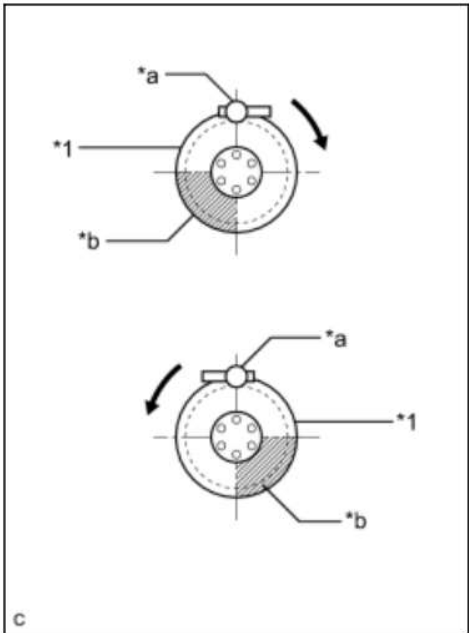
*4	Washer
*5	Nut

Torque: 4.0 N·m (41 kgf·cm, 35in·lbf)

NOTICE:

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



Text in Illustration

*1	Rim
*a	Mount Tool of the Mounting Machine
*b	Area for Tire Pressure Warning Valve and Transmitter
	Rim Rotating Direction

NOTICE:

- 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 new 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 to leak, replace the grommet, washer and nut.
(i) Install the cap.

2. INSTALL FRONT WHEEL

Torque: 120 N·m (1224 kgf·cm, 89ft·lbf)

3. INSTALL REAR WHEEL

Torque: 120 N·m (1224 kgf·cm, 89ft·lbf)

4. INSPECT TIRES INFO

5. REGISTER TRANSMITTER ID

INFO

6. REGISTER TRANSMITTER ID

INFO

7. INSPECT TIRE PRESSURE WARNING SYSTEM

INFO



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001F7R047X
Title: TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING VALVE: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE FRONT WHEEL

2. REMOVE REAR WHEEL

3. REMOVE TIRE PRESSURE WARNING VALVE AND TRANSMITTER

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

NOTICE:

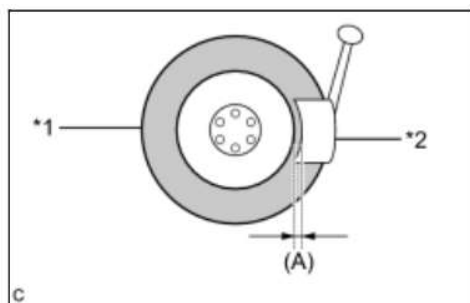
Keep the removed cap.

- (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.

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.



Text in Illustration

*1	Tire
*2	Shoe

NOTICE:

- 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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