

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

TIRE PRESSURE MONITORING SYSTEM (DIAGNOSTICS)

11. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC 11 TIRE 1 AIR PRESSURE DECREASE

NOTE:

Refer to DTC 14 for diagnostic procedure. <Ref. to TPM(diag)-25, DTC 14 TIRE 4 AIR PRESSURE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

B: DTC 12 TIRE 2 AIR PRESSURE DECREASE

NOTE:

Refer to DTC 14 for diagnostic procedure. <Ref. to TPM(diag)-25, DTC 14 TIRE 4 AIR PRESSURE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

C: DTC 13 TIRE 3 AIR PRESSURE DECREASE

NOTE:

Refer to DTC 14 for diagnostic procedure. <Ref. to TPM(diag)-25, DTC 14 TIRE 4 AIR PRESSURE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

D: DTC 14 TIRE 4 AIR PRESSURE DECREASE

DTC DETECTING CONDITION:

Inflation pressure of tires dropped below the specified value.

NOTE:

For the specifications, refer to "CURRENT DATA". <Ref. to TPM(diag)-8, DATA DISPLAY, OPERATION, Subaru Select Monitor.>

TROUBLE SYMPTOM:

Tire pressure warning light illuminates.

Step	Check	Yes	No
1 CHECK TIRES. Lift up the vehicle and check for damage in the tires.	Are there cracks or damage?	Repair or replace the tire. <Ref. to WT-5, Tire and Wheel.>	Go to step 2.
2 CHECK TIRES. Check the tire air pressure.	Is the tire pressure in the specifications?	Go to step 3.	Adjust the air pressure.
3 CHECK TRANSMITTER. Drive the vehicle at 40 km/h (25 MPH) or faster and compare the data from the transmitter on the four wheels.	Is there a transmitter with different data?	Replace the transmitter (tire pressure sensor). <Ref. to WT-9, Tire Pressure Monitoring System.>	Go to step 4.
4 PERFORM DRIVING TEST. 1) Perform the Clear Memory Mode. <Ref. to TPM(diag)-8, CLEAR MEMORY, OPERATION, Subaru Select Monitor.> 2) Perform a driving test. <Ref. to TPM(diag)-14, PROCEDURE, Inspection Mode.> 3) Read the DTC. <Ref. to TPM(diag)-7, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>	Is DTC displayed?	Record the DTC. Perform the repair according to DTC. <Ref. to TPM(diag)-22, List of Diagnostic Trouble Code (DTC).>	Finish the diagnosis.

CAUTION:

When driving vehicle to perform driving test, there should be always 2 persons (driver and checker) to check.

E: DTC 21 TRANSMITTER 1 NO DATA

NOTE:

Refer to DTC 24 for diagnostic procedure. <Ref. to TPM(diag)-26, DTC 24 TRANSMITTER 4 NO DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

F: DTC 22 TRANSMITTER 2 NO DATA

NOTE:

Refer to DTC 24 for diagnostic procedure. <Ref. to TPM(diag)-26, DTC 24 TRANSMITTER 4 NO DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

G: DTC 23 TRANSMITTER 3 NO DATA

NOTE:

Refer to DTC 24 for diagnostic procedure. <Ref. to TPM(diag)-26, DTC 24 TRANSMITTER 4 NO DATA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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H: DTC 24 TRANSMITTER 4 NO DATA

DTC DETECTING CONDITION:

Data from each transmitter is not received for 8 minutes.

TROUBLE SYMPTOM:

Tire pressure warning light blinks 25 times and then illuminates.

Step	Check	Yes	No
1 START FL TRANSMITTER. 1) Connect the Subaru Select Monitor and then turn the ignition switch to ON. 2) Select "Transmit ID Monitor". <Ref. to TPM(diag)-9, DISPLAY TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 3) Use the transmitter registration tool and transmit the ID from the FL transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 2.	Replace front left transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
2 CHECK FL TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 1 registered ID.	Are the two IDs same?	Go to step 3.	Record the received ID update as the FL transmitter. Go to step 3.
3 START FR TRANSMITTER. Use the transmitter registration tool and transmit the ID from the FR transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 4.	Replace the front right transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
4 CHECK FR TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 2 registered ID.	Are the two IDs same?	Go to step 5.	Record the received ID update as the FR transmitter. Go to step 5.
5 START RR TRANSMITTER. Use the transmitter registration tool and transmit the ID from the RR transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 6.	Replace the RR transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
6 CHECK RR TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 3 registered ID.	Are the two IDs same?	Go to step 7.	Record the received ID update as the RR transmitter. Go to step 7.
7 START RL TRANSMITTER. Use the transmitter registration tool and transmit the ID from the RL transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 8.	Replace the RL transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
8 CHECK RL TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 4 registered ID.	Are the two IDs same?	Go to step 9.	Record the received ID update as the RL transmitter. Go to step 9.
9 CHECK MALFUNCTION TRANSMITTER.	Is ID recorded by this procedure?	Go to step 10.	Go to step 1.

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Step	Check	Yes	No
10 CHECK MALFUNCTION TRANSMITTER. Check the registered ID of the transmitter indicated by DTC.	Is there checked ID in the record?	Replace the transmitter of the recorded position. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>>	Replace the transmitter showing the latest ID that is not included in the registered IDs. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>>

CAUTION:

When driving vehicle to perform driving test, there should be always 2 persons (driver and checker) to check.

I: DTC 31 TRANSMITTER 1 PRESSURE DATA ABNORMAL

NOTE:

Refer to DTC 34 for diagnostic procedure. <Ref. to TPM(diag)-28, DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC 32 TRANSMITTER 2 PRESSURE DATA ABNORMAL

NOTE:

Refer to DTC 34 for diagnostic procedure. <Ref. to TPM(diag)-28, DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC 33 TRANSMITTER 3 PRESSURE DATA ABNORMAL

NOTE:

Refer to DTC 34 for diagnostic procedure. <Ref. to TPM(diag)-28, DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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L: DTC 34 TRANSMITTER 4 PRESSURE DATA ABNORMAL

DTC DETECTING CONDITION:

- When comparing the data from each transmitter to the previous data, the change is large.
- The pressure exceeds what the transmitter can measure. (Excessive pressure)

TROUBLE SYMPTOM:

Tire pressure warning light blinks 25 times and then illuminates.

Step	Check	Yes	No
1 START FL TRANSMITTER. 1) Connect the Subaru Select Monitor and then turn the ignition switch to ON. 2) Select "Transmitter ID data monitor". <Ref. to TPM(diag)-9, DISPLAY TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 3) Use the transmitter registration tool and transmit the ID from the FL transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 2.	Replace front left transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
2 CHECK FL TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 1 registered ID.	Are the two IDs same?	Go to step 3.	Record the received ID update as the FL transmitter. Go to step 3.
3 START FR TRANSMITTER. Use the transmitter registration tool and transmit the ID from the FR transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 4.	Replace the front right transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
4 CHECK FR TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 2 registered ID.	Are the two IDs same?	Go to step 5.	Record the received ID update as the FR transmitter. Go to step 5.
5 START RR TRANSMITTER. Use the transmitter registration tool and transmit the ID from the RR transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 6.	Replace the RR transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
6 CHECK RR TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 3 registered ID.	Are the two IDs same?	Go to step 7.	Record the received ID update as the RR transmitter. Go to step 7.
7 START RL TRANSMITTER. Use the transmitter registration tool and transmit the ID from the RL transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 8.	Replace the RL transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
8 CHECK RL TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 4 registered ID.	Are the two IDs same?	Go to step 9.	Record the received ID update as the RL transmitter. Go to step 9.
9 CHECK MALFUNCTION TRANSMITTER.	Is ID recorded by this procedure?	Go to step 10.	Go to step 1.

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Step	Check	Yes	No
10 CHECK MALFUNCTION TRANSMITTER. Check the registered ID of the transmitter indicated by DTC.	Is there checked ID in the record?	Replace the transmitter of the recorded position. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>	Replace the transmitter showing the latest ID that is not included in the registered IDs. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>

M: DTC 41 TRANSMITTER 1 FUNCTION CODE ABNORMAL

NOTE:

Refer to DTC 44 for diagnostic procedure. <Ref. to TPM(diag)-30, DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

N: DTC 42 TRANSMITTER 2 FUNCTION CODE ABNORMAL

NOTE:

Refer to DTC 44 for diagnostic procedure. <Ref. to TPM(diag)-30, DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

O: DTC 43 TRANSMITTER 3 FUNCTION CODE ABNORMAL

NOTE:

Refer to DTC 44 for diagnostic procedure. <Ref. to TPM(diag)-30, DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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P: DTC 44 TRANSMITTER 4 FUNCTION CODE ABNORMAL

DTC DETECTING CONDITION:

Unexpected function codes received from each transmitter.

TROUBLE SYMPTOM:

Tire pressure warning light blinks 25 times and then illuminates.

Step	Check	Yes	No
1 START FL TRANSMITTER. 1) Connect the Subaru Select Monitor and then turn the ignition switch to ON. 2) Select "Transmit ID Monitor". <Ref. to TPM(diag)-9, DISPLAY TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 3) Use the transmitter registration tool and transmit the ID from the FL transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 2.	Replace front left transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
2 CHECK FL TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 1 registered ID.	Are the two IDs same?	Go to step 3.	Record the received ID update as the FL transmitter. Go to step 3.
3 START FR TRANSMITTER. Use the transmitter registration tool and transmit the ID from the FR transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 4.	Replace the front right transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
4 CHECK FR TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 2 registered ID.	Are the two IDs same?	Go to step 5.	Record the received ID update as the FR transmitter. Go to step 5.
5 START RR TRANSMITTER. Use the transmitter registration tool and transmit the ID from the RR transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 6.	Replace the RR transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
6 CHECK RR TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 3 registered ID.	Are the two IDs same?	Go to step 7.	Record the received ID update as the RR transmitter. Go to step 7.
7 START RL TRANSMITTER. Use the transmitter registration tool and transmit the ID from the RL transmitter to check "Latest reception ID".	Is "Latest reception ID" updated?	Go to step 8.	Replace the RL transmitter. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>
8 CHECK RL TRANSMITTER ID. Check the ID displayed in the updated ID display and the tire 4 registered ID.	Are the two IDs same?	Go to step 9.	Record the received ID update as the RL transmitter. Go to step 9.
9 CHECK MALFUNCTION TRANSMITTER.	Is ID recorded by this procedure?	Go to step 10.	Go to step 1.

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Step	Check	Yes	No
10 CHECK MALFUNCTION TRANSMITTER. Check the registered ID of the transmitter indicated by DTC.	Is there checked ID in the record?	Replace the transmitter of the recorded position. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.‑>	Replace the transmitter showing the latest ID that is not included in the registered IDs. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.‑>

Q: DTC 51 TRANSMITTER 1 BATTERY VOLTAGE DECREASE

NOTE:

Refer to DTC 54 for diagnostic procedure. <Ref. to TPM(diag)-32, DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

R: DTC 52 TRANSMITTER 2 BATTERY VOLTAGE DECREASE

NOTE:

Refer to DTC 54 for diagnostic procedure. <Ref. to TPM(diag)-32, DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

S: DTC 53 TRANSMITTER 3 BATTERY VOLTAGE DECREASE

NOTE:

Refer to DTC 54 for diagnostic procedure. <Ref. to TPM(diag)-32, DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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T: DTC 54 TRANSMITTER 4 BATTERY VOLTAGE DECREASE

DTC DETECTING CONDITION:

Low battery signals received 20 times from each transmitter.

TROUBLE SYMPTOM:

Tire pressure warning light blinks 25 times and then illuminates.

Step	Check	Yes	No
1 CHECK TRANSMITTER. 1) Replace all transmitters and register their IDs. <Ref. to WT-9, TRANSMITTER (SNAP IN TYPE), REMOVAL, Tire Pressure Monitoring System.> <Ref. to TPM(diag)-8, REGISTER TRANSMITTER (ID), OPERATION, Subaru Select Monitor.> 2) Perform the Clear Memory Mode, and perform driving test.	Is the fault eliminated?	Internal battery of the transmitter had worn out. <Ref. to WT-9, TRANSMITTER (SNAP IN TYPE), REMOVAL, Tire Pressure Monitoring System.>	Replace the TPMS & keyless entry control module. <Ref. to WT-9, TPMS & KEY-LESS ENTRY CONTROL MODULE, REMOVAL, Tire Pressure Monitoring System.>

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U: DTC 61 VEHICLE SPEED IS ABNORMAL

DTC DETECTING CONDITION:

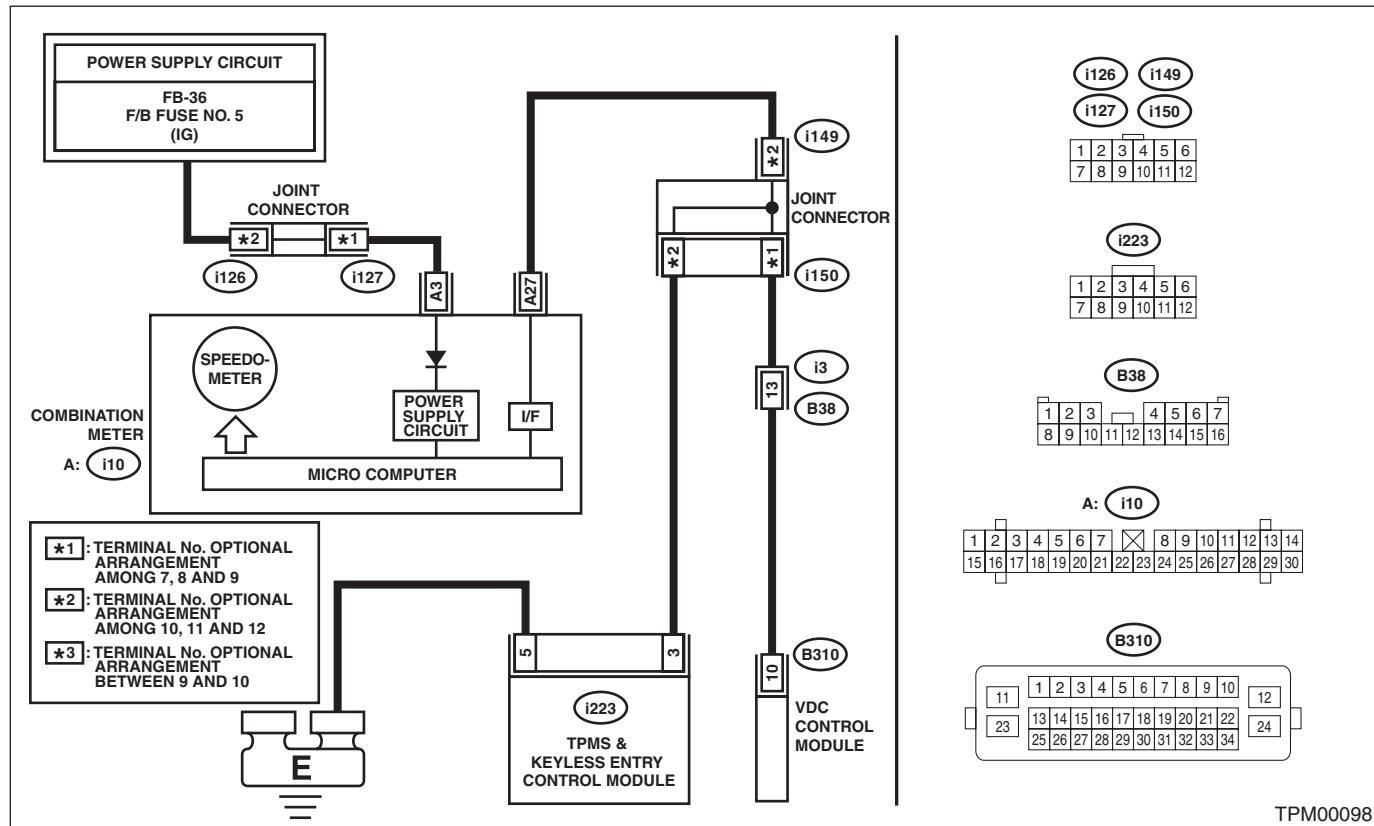
Vehicle speed function codes were received from the transmitter, but the vehicle speed signal was not input to the module.

TROUBLE SYMPTOM:

Tire pressure warning light blinks.

WIRING DIAGRAM:

Tire pressure monitoring system <Ref. to WI-62, WIRING DIAGRAM, Tire Pressure Monitoring System.>



Step	Check	Yes	No
1 CHECK TPMS & KEYLESS ENTRY CONTROL MODULE. 1) Connect an oscilloscope to the terminal No. 3 of the TPMS & keyless entry control module connector (i223). Connector & terminal (i223) No. 3 (+) — Chassis ground (-): 2) Lift up the vehicle and then drive the vehicle at 40 km/h (25 MPH) and check the vehicle speed signal at that time.	Is the vehicle speed being input?	Replace the TPMS & keyless entry control module. <Ref. to WT-9, REMOVAL, Tire Pressure Monitoring System.>	Go to step 2.
2 CHECK HARNESS. 1) Disconnect the combination meter connector (i10). 2) Connect the tester to the TPMS & keyless entry control module connector (i223) and combination meter connector (i10), and measure the resistance. Connector & terminal (i223) No. 3 — (i10) No. 27:	Is the resistance less than 0.5 Ω?	Check the combination meter. <Ref. to IDI-11, REMOVAL, Combination Meter.>	Repair or replace the open circuit of the harness.