Service Information

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Coverage ☐ Distributor only ■ Please inform your dealers		Date Issued August 9, 2012	
Please convey this information to your ☐ Director ■ General Manager ■ Warranty Dept. ■ Parts Dept. ■ Training Dept. ■ Field Rep.		Date Revised February 22, 2013	
Applicable Model CX-5 (KE), Mazda6 (GJ)	Applicable Countries or Specifications Worldwide		

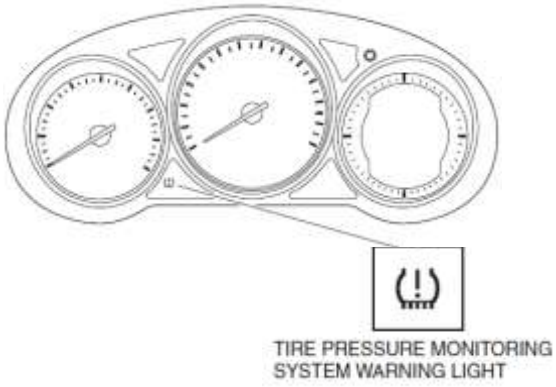
REVISED

- **The mis-use prevention logic operation chart on page 3 has been updated.**
- **Item numbers on page 5 have been corrected.**

Subject: Tire Pressure Monitoring System (TPMS) Warning Light Illuminating Unintentionally (Mis-use Prevention Logic)

DESCRIPTION

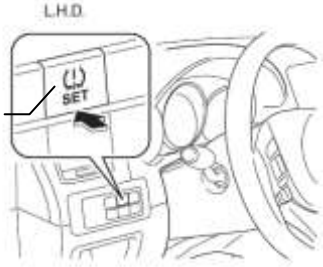
The Tire Pressure Monitoring System (TPMS) equipped on CX-5/Mazda6 (GJ) monitors the air pressure of all four wheels. If the air pressure of one or more tires is too low compared with the specified value (the initial value learned by the system), the system warns the driver by indicating the TPMS warning light in the instrument cluster and operating a beep sound.



The system monitors the tire pressures indirectly using the data sent from the ABS wheel speed sensors. To allow the TPMS to operate correctly, it is essential that the TPMS must be initialized to learn new conditions whenever a tire related service is performed.
When the following services have been performed, make sure to initialize the TPMS by pushing the TPMS set switch until the TPMS warning light flashes 1 or 2 times and the warning beep sounds once. Customers may perform these services by themselves, therefore instruct the customers on the necessity and procedure of the TPMS initialization.

- Tire pressures have been adjusted
- Tires have been rotated
- Tires or wheels have been replaced
- DSC HU/CM replaced
- DSC HU/CM connector disconnected
- Any battery cable or ground connection was disconnected or battery replaced
- TPMS warning light is illuminated.

TPMS Set Switch



Customer complaints have been reported that the TPMS warning light was unnecessarily illuminated because the TPMS initialization was not performed correctly. This service information addresses these cases and instructs the measure to be taken.

CASES THAT TPMS WARNING LIGHT IS ILLUMINATED BECAUSE TPMS INITIALIZATION WAS NOT PERFORMED CORRECTLY

CAUTION
MAKE SURE TO PUSH THE TPMS SET SWITCH AFTER TIRE PRESSURES WERE ADJUSTED AT PDI.
For the details, refer to the Workshop Manual "TIRE PRESSURE MONITORING SYSTEM INITIALIZATION PROCEDURE".

[EXAMPLE 1]
Tire pressures were corrected at PDI but the TPMS initialization was not performed. Right after the vehicle was delivered, the TPMS warning light was illuminated.

Tire pressures are set at the plant around 350kPa and the TPMS is initialized with this condition. If the TPMS initialization was not performed in spite of the tire pressures being corrected at PDI, the TPMS judges the tire pressures dropped and hence the TPMS warning light is illuminated.

[EXAMPLE 2]
For the vehicle of the above EXAMPLE 1, dealer found the tire pressures were correct, therefore pushed the TPMS set switch and delivered the vehicle. Right after the vehicle was delivered, **the mis-use prevention logic** worked and the TPMS warning light was illuminated again causing further confusion to the customer.

What is Mis-use Prevention Logic?
For details, refer to Technical Guide "TIRE PRESSURE MONITORING SYSTEM (TPMS)".

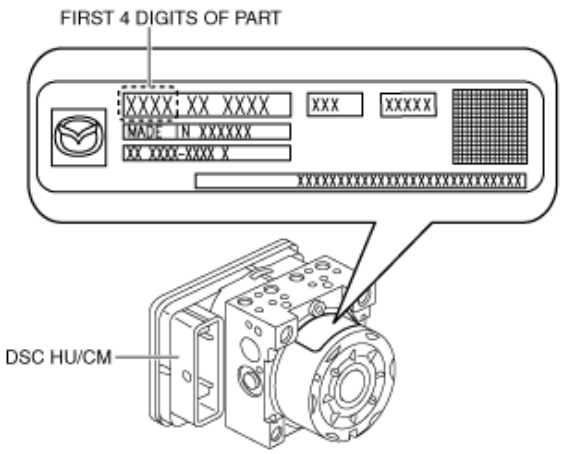
If the TPMS is initialized without adjusting the tire pressures even though the TPMS warning light was illuminated, the TPMS has a mis-use prevention logic which illuminates the TPMS warning light.

The data for the tire pressure at the time when the TPMS warning light was illuminated is compared to the data for the tire pressure at the time when the TPMS initialization was performed. If the difference in pressure is within the specification, the TPMS warning light is illuminated.

There are two types of mis-use prevention logic, TYPE A and B.
• For Mazda6 (GJ), TYPE B has been adopted from the first production.
• For CX-5, the type can be verified by the first four digits of the part number of DSC HU/CM which is indicated on the label adhered to the DSC HU/CM as shown in the figure below.

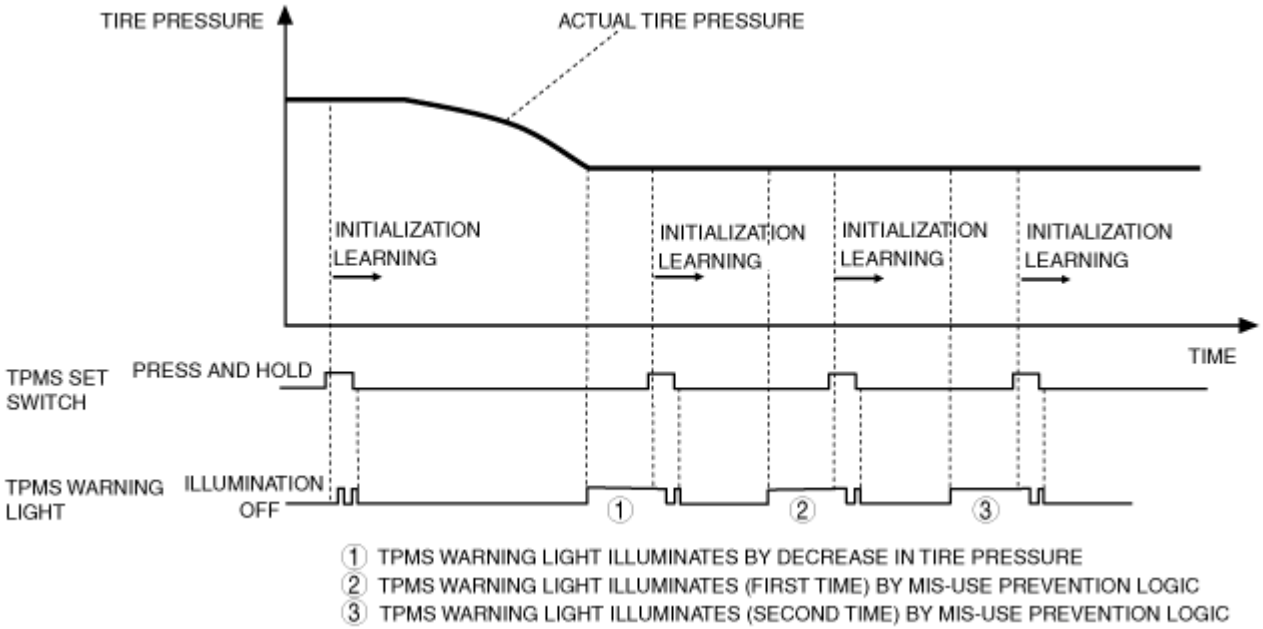
How to distinguish TYPE A and B for CX-5

Type of mis-use prevention logic	First 4 digits of DSC HU/CM Part Number
TYPE A	K011 or K0Y1
TYPE B	KJ11 or KJY1



<TYPE A> - For CX-5 with DSC HU/CM part number K011 or K0Y1

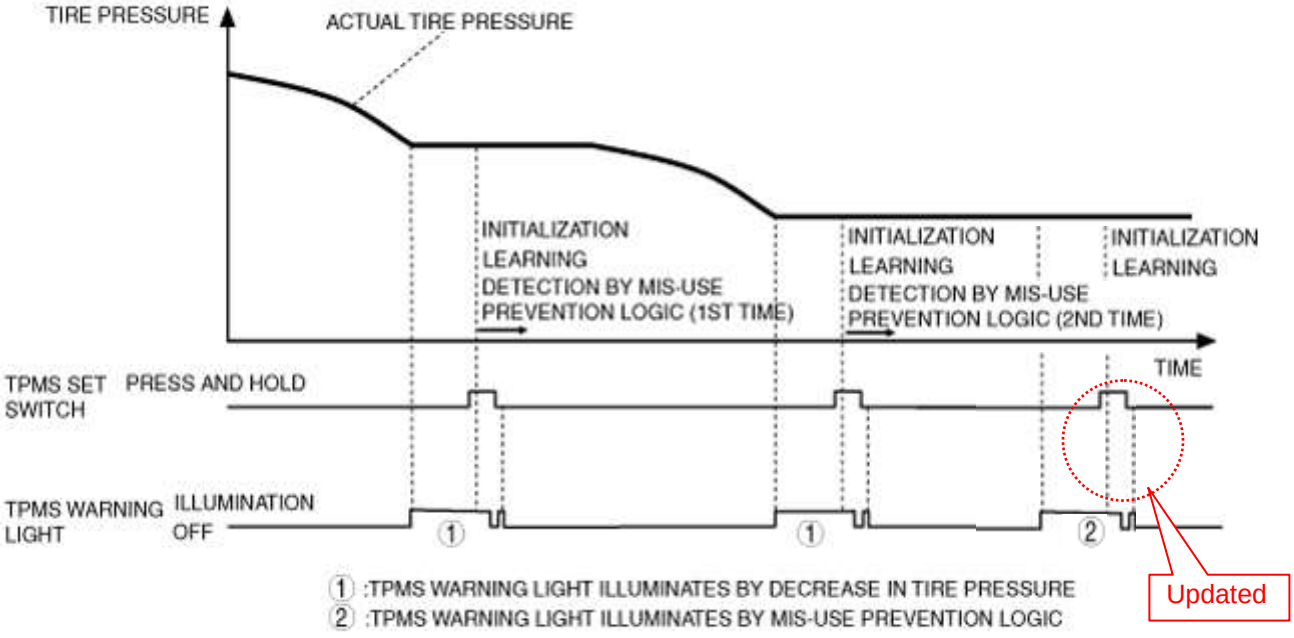
• The mis-use prevention logic operates two times and the warning light illuminates each time as shown in the following figure.



1 TPMS WARNING LIGHT ILLUMINATES BY DECREASE IN TIRE PRESSURE
2 TPMS WARNING LIGHT ILLUMINATES (FIRST TIME) BY MIS-USE PREVENTION LOGIC
3 TPMS WARNING LIGHT ILLUMINATES (SECOND TIME) BY MIS-USE PREVENTION LOGIC

<TYPE B> - For CX-5 with DSC/ HU CM part number KJ11 or KJY1 and all Mazda6 (GJ)

• If the detection is the first time, the tire pressure monitoring system warning light is not illuminated.
• If the detection is the second time, the tire pressure monitoring system warning light is illuminated.



1 :TPMS WARNING LIGHT ILLUMINATES BY DECREASE IN TIRE PRESSURE
2 :TPMS WARNING LIGHT ILLUMINATES BY MIS-USE PREVENTION LOGIC

MEASURES TO BE TAKEN

When you encounter the cases mentioned above, inspect and measure according to the following procedure.

Possible reasons why TPMS warning light is illuminated even with correct tire pressures
When the TPMS warning light was illuminated even though the tire pressures were within specification, the following reasons are possible.

(**REASON A**) – The TPMS detected the tire pressures decreased.
For instance:
• The above EXAMPLE 1 applies to this case. (Tire pressures were adjusted to the specified value but the initialization was not performed at dealer PDI.)
• Previously the tire pressures were adjusted to higher value than the specified, the tire pressures decreased and the warning light was illuminated.

(**REASON B**) – The TPMS mis-use prevention logic worked.
For instance:
• The above EXAMPLE 2 applies to this case.
• The customer pressed the TPMS set switch without adjusting the tire pressures.

In order to help your diagnosis to distinguish between REASON A and B, connect M-MDS, go to the screen “OPERATION RECORD of TPMS” and confirm odometer, elapsed days, vehicle speed and etc. when the TPMS set button was pushed and the warning light was illuminated. For more details of OPERATION RECORD, refer to Technical Guide “TIRE PRESSURE MONITORING SYSTEM OPERATION RECORD”.

NOTE:
• The TPMS initialization at the plant may not be recorded.
• Even if the TPMS set switch was pushed at PDI, the TPMS initialization might not have been performed if the battery was disconnected after pushing TPMS set switch and before the learning process.

Measures
Measures are different depending on which type of mis-use prevention logic is adopted on the vehicle in repair.

Measure 1 for TYPE A (for CX-5 with DSC HU/CM with part number K011 or K0Y1)

Take one of the following three measures if the TPMS warning light was illuminated even if the tire pressures were within the specification.

Measure 1-1
Initialize the TPMS by pressing the TPMS set switch leaving the tire pressures as they are and deliver the vehicle. Explain to the customer’s understanding that the TPMS warning light will be illuminated one or two more times because the mis-use prevention logic will work, and instruct the customer to push the TPMS set switch to initialize the TPMS each time when the TPMS warning light is illuminated.
Advise the customer that TPMS warning light only can be ignored in case the mis-use prevention logic is working. All other incidents of TPMS warning light illumination require attention.

Measure 1-2
In order to stop the mis-use prevention logic, once increase tire pressures by 50kPa (specified value + 50kPa) and perform the TPMS initialization to let the system learn this tire pressure.

① Adjust 4 tires pressure to the specified value + 50kPa.
② Push the TPMS set switch.
③ Drive the vehicle at the speed between 40 - 100 Km/h to initiate the learning.
NOTE:
• The learning is suspended when braking or turning steering wheel so drive the vehicle on a straight road as much as possible.
• Pay special attention to the changed driving behavior of the vehicle at increased tire pressure and drive carefully.
• Drive the vehicle for 20-30 minutes at one of the following constant speed ranges then the learning will be completed at higher rate.
Low speed range: 50±10 Km/h
Middle speed range: 70±10 Km/h
High speed range: 90±10 Km/h
④ Using M-MDS, check the PID “DDS-MODE” and if the reading is “Learned”, the TPMS learning has been completed.
NOTE:
• For data processing in the TPMS unit to change the status from “Learning” to “Learned”, you have to turn the ignition OFF, close the door and leave the car for more than 5 minutes.
⑤ If the learning has not been completed, repeat from the Measure 1-2-③.
⑥ If the learning has been completed, adjust the tire pressures to the specified and press the TPMS set switch.

Measure 1-3
Leaving the tire pressures as they are, press the TPMS set switch and drive the vehicle to let the warning light illuminate. Repeat this step until the mis-use prevention logic is stopped (until the TPMS warning light is not illuminated).
NOTE:
• Connect M-MDS, go to the screen “Operation Record of TPMS” and confirm the vehicle speed when the TPMS warning light was previously illuminated. Drive the vehicle at around the same speed, then the TPMS warning light will be illuminated easily.
• For other notes for the learning procedure, refer to the Measure1- 2-③.

Measure 2 for TYPE B (for CX-5 with part number KJ11 or KJY1 and all Mazda6 (GJ))

Perform the TPMS initialization using the M-MDS. This way will initialize TPMS and at the same time disable the mis-use prevention logic.

① Park the vehicle on safe, level ground.
② Adjust all four tire pressures to the specification while the tires are cold. (See workshop manual WHEEL AND TIRE SPECIFICATION.)
CAUTION:
• Cold tires means leaving the vehicle for 1 h or, if the vehicle is driven, do so within 1.6 km {0.99 mile}.
③ Connect the M-MDS (IDS) to DLC-2.
④ After the vehicle is identified, select the following items from the initial screen of the IDS.
(1) Select “Chassis”
(2) Select “ABS/DSC”
(3) Select “TPMS Reset”

NOTE:

• When the tire pressure monitoring system initialization is performed, learning initiates. Learning is completed by driving the vehicle for approx. 20 min.

• While the tire pressure monitoring system is undergoing learning, its primary functions do not operate.

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