ACCESSORIES & EQUIPMENT

Tire Pressure Monitoring - Escalade, Suburban, Tahoe, Yukon

SPECIFICATIONS

FASTENER SPECIFICATIONS

Application	Specification	
	Metric	English
Tire Pressure Sensor Screw	1.3 N.m	11.5 lb in
Tire Valve Stem Grommet	7 N.m	62 lb in

DIAGNOSTIC INFORMATION AND PROCEDURES

DTC C0569: SYSTEM CONFIGURATION MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

DTC Descriptor

DTC C0569 00

System Configuration Malfunction

Circuit/System Description

If the tire type and pressure information is not entered during the body control module (BCM) setup, the tire pressure monitor system indicator icon on the instrument cluster will flash for 1 min and then remain illuminated after the ignition is cycled ON and the instrument cluster bulb check is complete. If equipped, the driver information center will also display a service tire monitor type message. Under these circumstances, DTC C0569 will be set and the tire type and pressure information will need to be entered for the system to function correctly.

Conditions for Running the DTC

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Ignition On/Vehicle in Service Mode.

Conditions for Setting the DTC

The tire type and pressure information is not entered into the BCM during programming and setup.

Action Taken When the DTC Sets

- The tire pressure monitor system indicator icon on the instrument cluster flashes for 1 min and then remains illuminated after the ignition switch is cycled ON and the instrument cluster bulb check is complete.
- If equipped, the driver information center displays a service tire monitor type message.

Conditions for Clearing the DTC

A current DTC will clear when the BCM has undergone the tire type and pressure selection setup procedure and one ignition cycle has occurred.

Diagnostic Aids

A newly replaced BCM will set DTC C0569 after programming on it's initial ignition ON cycle if the module setup information has not been entered.

Reference Information

Description and Operation

Tire Pressure Monitor Description and Operation

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition On/Vehicle in Service Mode.
2. Enter the tire type and pressure information into the K9 Body Control Module with a scan tool. Refer to **Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label** .
3. Ignition OFF, then Ignition On/Vehicle in Service Mode.
4. Verify DTC C0569 is not set.
    - **If the DTC is set**

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Replace the K9 Body Control Module.

- **If the DTC is not set.**

5. All OK.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

Refer to **Control Module References** for control module replacement, programming, and setup.

DTC C0750, C0755, C0760, OR C0765: TIRE PRESSURE SENSORS

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

DTC Descriptors

DTC C0750 03

Left Front Tire Pressure Sensor Low Voltage

DTC C0750 29

Left Front Tire Pressure Sensor Too Few Pulses

DTC C0750 39

Left Front Tire Pressure Sensor Internal Malfunction

DTC C0755 03

Right Front Tire Pressure Sensor Low Voltage

DTC C0755 29

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Right Front Tire Pressure Sensor Too Few Pulses

DTC C0755 39

Right Front Tire Pressure Sensor Internal Malfunction

DTC C0760 03

Left Rear Tire Pressure Sensor Low Voltage

DTC C0760 29

Left Rear Tire Pressure Sensor Too Few Pulses

DTC C0760 39

Left Rear Tire Pressure Sensor Internal Malfunction

DTC C0765 03

Right Rear Tire Pressure Sensor Low Voltage

DTC C0765 29

Right Rear Tire Pressure Sensor Too Few Pulses

DTC C0765 39

Right Rear Tire Pressure Sensor Internal Malfunction

Circuit/System Description

The tire pressure monitor system has a radio frequency (RF) transmitting pressure sensor in each wheel/tire assembly. As vehicle speed increases, centrifugal force puts the sensor into Drive mode. The sensors send the tire pressure data to the remote control door lock receiver (RCDLR) which in turn translates the received sensor data into sensor presence, sensor mode, and tire pressure before passing it onto the body control module (BCM). Once vehicle speed is greater than 40 km/h (25 MPH), the BCM waits for the first sensor to go into Drive mode, then checks if all sensors have gone into Drive mode. If one or more sensors does not go into these modes, or does not transmit at all, the BCM will set DTC C0750, C0755, C0760, or C0765 respectively.

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Conditions for Running the DTC

Vehicle speed is greater than 40 km/h (25 MPH).

Conditions for Setting the DTC

- A sensor does not transmit or transmits invalid data to the BCM.
- A sensor low battery condition.

Action Taken When the DTC Sets

- The tire pressure monitor system indicator icon on the instrument cluster flashes for 1 min and then remains illuminated after the ignition switch is cycled ON and the instrument cluster bulb check is complete.
- If equipped, the driver information center displays a service tire monitor type message.

Conditions for Clearing the DTC

A current DTC will clear when the malfunction is no longer present and one ignition cycle occurs.

Diagnostic Aids

- Some aftermarket wheel valve stem holes are located further from the wheel rim than original equipment wheels. When using the tire pressure monitor special tool to activate a sensor, ensure the tool is placed along the tire sidewall and no further than 15 cm (6 in) from the sensor and the antenna is aiming upward.
- Aftermarket wheel valve system locations can cause a sensor to not function correctly.
- A sensor may have been damaged due to a previous wheel/tire service or flat tire event.
- The use of other than GM approved tire sealants can obstruct the sensor pressure sensing port and cause inaccurate tire pressure readings. If this condition is verified, remove the sealer from the tire and replace the sensor. Refer to **Tire Pressure Indicator Sensor Replacement**.
- Occasionally sensor transmissions are not received by the BCM due to vehicle level radio frequency interference from items such as but not limited to aftermarket ignition systems, DVD players, CB radios, or metallic type window tinting.
- The sensor activation procedure may have to be repeated up to 3 times before determining a sensor is malfunctioning. In the event a particular sensor information is displayed on the special tool upon activation but the horn does not chirp, it may be necessary to rotate the wheel valve stem to a different position due to the RF signal being blocked by another component.
- Occasionally sensors can become mislocated due to previous tire rotations where the sensor learn procedure was not performed. Always learn the sensors to ensure the DTC set is for that actual physical corner of the vehicle. Refer to **Tire Pressure Indicator Sensor Learn**.
- A sensor low battery condition will set a sensor DTC but will not illuminate the low tire pressure indicator or display a message on the driver

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information center, if equipped. The sensor battery condition can be verified in the scan tool BCM data list. If a sensor low battery condition is indicated on the scan tool, the sensor will need to be replaced. Refer to **Tire Pressure Indicator Sensor Replacement**.

Reference Information

Description and Operation

Tire Pressure Monitor Description and Operation

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Verify there are no communication DTCs set along with DTC C0750, C0755, C0760, and C0765.
   - **If a communication DTC is set**

     Refer to **Diagnostic Trouble Code (DTC) List - Vehicle** .

   - **If a communication DTC is not set**
2. Verify if all 4 tire monitor pressure sensor DTCs are not set.
   - If 2 or more tire monitor pressure sensor DTCs are set, test the keyless entry antenna for proper operation, or if antenna is properly seated. Refer to **Keyless Entry System Malfunction (Passive)** **Keyless Entry System Malfunction (Active)**
3. Perform the **Tire Pressure Indicator Sensor Learn**.
4. Verify the scan tool Tire Pressure Sensor Mode parameters change to Drive while driving the vehicle above 40 km/h (25 mph) for greater than 2 min.
   - **If a Tire Pressure Sensor Mode parameter does not change to Drive**
   1. Replace the appropriate B2 Tire Pressure Sensor.
   2. Perform the **Tire Pressure Indicator Sensor Learn**.
   - **If the Tire Pressure Sensor Mode parameter changes to Drive**
5. All OK.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

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- Refer to **Tire Pressure Indicator Sensor Replacement**
- Refer to **Tire Pressure Indicator Sensor Learn**

DTC C0775: TIRE PRESSURE MONITORING SYSTEM SENSORS MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

DTC Descriptor

DTC C0775 00

Tire Pressure Monitoring System Sensors Malfunction

Circuit/System Description

If the body control module (BCM) has been reprogrammed or replaced and the tire pressure sensor learn procedure has not been performed, the tire pressure monitor system indicator icon on the instrument cluster will flash for 1 min and then remain illuminated after the power switch is cycled ON and the instrument cluster bulb check is complete. If equipped, the driver information center will also display a service tire monitor type message. Under these circumstances, DTC C0775 will be set in the BCM and the tire pressure sensor learn procedure will need to be performed for the system to function correctly.

Conditions for Running the DTC

Vehicle ON or Vehicle in Service Mode.

Conditions for Setting the DTC

The body control module (BCM) has not learned tire pressure sensor ID and location information from the tire pressure sensors.

Action Taken When the DTC Sets

- The tire pressure monitor system indicator icon on the instrument cluster will flash for 1 min and then remain illuminated after the power switch is cycled ON and the instrument cluster bulb check is complete.
- If equipped, the driver information center displays a service tire monitor type warning message.

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Conditions for Clearing the DTC

A current DTC will clear when the BCM has received tire pressure sensor ID and location after tire pressure sensor indicator learn procedure has been performed.

Reference Information

Description and Operation

Tire Pressure Monitor Description and Operation

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Perform the **Tire Pressure Indicator Sensor Learn**.
2. Verify DTC C0775 is not set.
    - **If the DTC is set**
    1. Test the keyless entry antenna for proper operation. Refer to **Keyless Entry System Malfunction (Passive)** **Keyless Entry System Malfunction (Active)** .
    2. Clear DTC.
    3. Verify DTC does not set.
        - If the DTC sets, replace the K9 Body Control Module.
        - If the DTC does not set.

          All OK.

    - **If the DTC is not set**
3. All OK.

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

Refer to **Control Module References** for control module replacement, programming, and setup.

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SYMPTOMS - TIRE PRESSURE MONITORING

1. Perform the **Diagnostic System Check - Vehicle** , before using the Symptom Tables in order to verify that all of the following are true:
   - There are no DTCs set.
   - The control modules can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to **Tire Pressure Monitor Description and Operation**.

Visual/Physical Inspection

- Inspect if tires are inflated per placard values.
- Inspect for aftermarket devices which could affect the operation of the Tire Pressure Monitoring (TPM) System. Refer to **Checking Aftermarket Accessories** .
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** .

Symptom List

Refer to **Low Tire Pressure Indicator Malfunction** in order to diagnose the symptom.

LOW TIRE PRESSURE INDICATOR MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- Refer to **Diagnostic Procedure Instructions** to provide an overview of each diagnostic category.

Circuit/System Description

The tire pressure monitor system has a radio frequency transmitting pressure sensor in each wheel/tire assembly. As vehicle speed increases, centrifugal force puts the sensor into Drive mode. The sensors send the tire pressure data to the remote control door lock receiver (RCDLR), using radio frequency (RF) transmissions. The RCDLR then decodes the RF data and passes it to the body control module (BCM). In turn, the BCM

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translates the data contained in the tire pressure sensor radio frequency transmissions into sensor presence, sensor mode, and tire pressure. Once vehicle speed is greater than 40 km/h (25 MPH), the BCM waits for the sensors to go into Drive mode.

Each sensor has its own unique identification (ID) code, which it transmits as part of each RF message, that must be learned into the BCM memory. Once all 4 IDs have been learned and vehicle speed is greater than 40 km/h (25 mph), the BCM continuously compares IDs and pressure data in the received transmissions to the learned IDs and vehicle placard pressures to determine if all 4 sensors are present and if one or more tires are low. If the BCM detects a low tire pressure condition or a malfunction in the system, it will send a serial data message to the instrument cluster requesting the appropriate tire pressure monitor indicator illumination and also to display the appropriate data message on the driver information center, if equipped.

Diagnostic Aids

- If unsure about the condition, cycle the ignition and observe the tire pressure monitor indicator icon. If the tire pressure monitor indicator icon is continuously illuminated after the instrument cluster bulb check is completed, a low tire pressure condition is present. Check the tires for damage or leaks and inflate to the tire placard specifications. Refer to **Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label** . If the tire pressure monitor indicator icon flashes for 1 min after the instrument cluster bulb check is completed and then remains illuminated, a tire pressure monitor system DTC is set. Perform the **Diagnostic System Check - Vehicle** to proceed with the proper diagnosis.
- Temperature can greatly effect tire pressures. Low tire pressure on a cold morning may cause the tire pressure monitor indicator icon to turn ON. The air pressure in the tire increases as the ambient temperature rises or as the tire warms up while the vehicle is driven. The pressure may increase enough to exceed the predetermined low pressure threshold which will turn OFF the tire pressure monitor indicator icon.
- Some aftermarket wheel valve stem holes are located further from the wheel rim than original equipment wheels. When using the tire pressure monitor special tool to activate a sensor, ensure the tool antenna is no further than 15 cm (6 in) from the sensor and is aiming upward.
- Aftermarket wheel value stem locations can cause a sensor to not function correctly.
- A sensor may have been damaged due to a previous wheel/tire service or flat tire event. This is a courtesy item as it is not covered by warranty.
- The use of other than GM approved tire sealants can obstruct the sensor pressure sensing port and cause inaccurate tire pressure readings. If this condition is verified, remove the sealer from the tire and replace the sensor. Refer to **Tire Pressure Indicator Sensor Replacement**.
- The sensor activation procedure may have to be repeated up to 3 times before determining a sensor is malfunctioning. In the event a particular sensor's information is displayed on the special tool upon activation but the horn does not chirp, it may be necessary to rotate the wheel valve stem to a different position due to the RF signal is being blocked by another component.
- Occasionally sensor transmissions are not received by the BCM due to vehicle level RF interference from items such as but not limited to aftermarket ignition systems, DVD players, CB radios, or metallic type window tinting.
- The Hit Rate of the sensor will help confirm the success rate at which the sensor transmission is being received. A low Hit Rate will signal that there may be interference from aftermarket items.

Reference Information

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Description and Operation

Tire Pressure Monitor Description and Operation

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

NOTE: **Low tire pressure in one or more tires is indicated by a continuously illuminated tire pressure monitor indicator icon after the instrument cluster bulb check is completed. If equipped with a driver information center, a check tire pressure type message will also be displayed.**

When a tire pressure monitor DTC is set, the tire pressure monitor indicator icon will flash for 1 min after the instrument cluster bulb check is completed and then remains illuminated. If equipped with a driver information center, a service tire monitor type message will also be displayed.

1. Adjust all tire pressures to the correct pressure. Refer to **Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label** .
2. Drive the vehicle over 40 km/h (25 mph) for greater than 2 min.
3. Verify the low tire pressure indicator is OFF.
    - **If the low tire pressure indicator is ON**
    1. Perform the **Tire Pressure Indicator Sensor Learn**.
    2. Record all 4 Tire Pressure Parameters values from the scan tool.
    3. Check and record the tire pressures with a known accurate hand held tire pressure gauge.
    4. Verify that the scan tool Tire Pressure parameters do not differ more than 27.6 kPa (4 psi) from the actual tire pressure readings.
        - If the scan tool Tire Pressure parameters differ more than 27.6 kPa (4 psi), replace the appropriate B2 Tire Pressure Sensor then perform the **Tire Pressure Indicator Sensor Learn**.
        - If the scan tool Tire Pressure parameters do not differ more than 27.6 kPa (4 psi)
    5. Verify the BCM Tire Type and Pressure selections are setup correctly with a scan tool. Refer to the **Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label** .
        - If the BCM Tire Type and Pressure selections are incorrect, input the proper placard values for the vehicle with the scan tool then drive the vehicle over 40 km/h (25 mph) for greater than 2 min.
        - If the BCM Tire Type and Pressure selections are correct

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6. Ignition On/Vehicle in Service Mode.
7. Verify the low tire pressure monitor indicator icon turns ON and OFF when commanding All Indicators ON and OFF with a scan tool.
    - If the low tire pressure monitor icon does not turn ON and OFF, replace the P16 Instrument Cluster.
    - If the low tire pressure monitor icon turns ON and OFF
8. All OK

- **If the tire pressure indicator is OFF**

4. All OK

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

- Refer to **Tire Pressure Indicator Sensor Replacement**
- Refer to **Tire Pressure Indicator Sensor Learn**
- Refer to **Control Module References** for control module replacement, programming, and setup.

REPAIR INSTRUCTIONS

TIRE PRESSURE INDICATOR SENSOR REPLACEMENT

Removal Procedure

1. Raise and support the vehicle. **Lifting and Jacking the Vehicle**
2. Remove the tire and wheel assembly. **Tire and Wheel Removal and Installation (6-Lug Wheel)** **Tire and Wheel Removal and Installation (8-Lug Wheel)**
3. Use the tire changer in order to remove the tire from the wheel.

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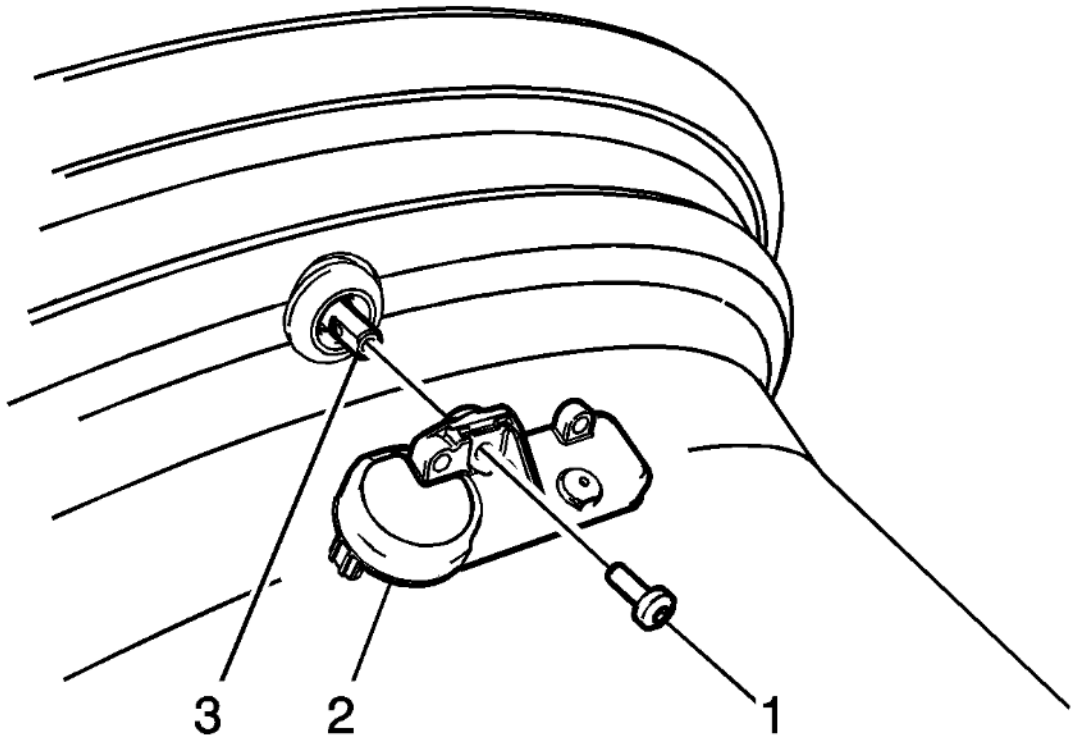

Fig. 1: Tire Pressure Indicator Sensor Components
Courtesy of GENERAL MOTORS COMPANY

CAUTION: **Do not scratch or damage the clear coating on aluminum wheels with the tire changing equipment. Scratching the clear coating could cause the aluminum wheel to corrode and the clear coating to peel from the wheel.**

NOTE: **When servicing the tire pressure sensor always use a NEW valve stem and NEW TORX screw during**

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installation.

4. Remove the TORX screw (1) from the tire pressure sensor (2) and pull it straight off the valve stem (3).
5. Remove the tire valve stem by pulling it through the rim.

Installation Procedure

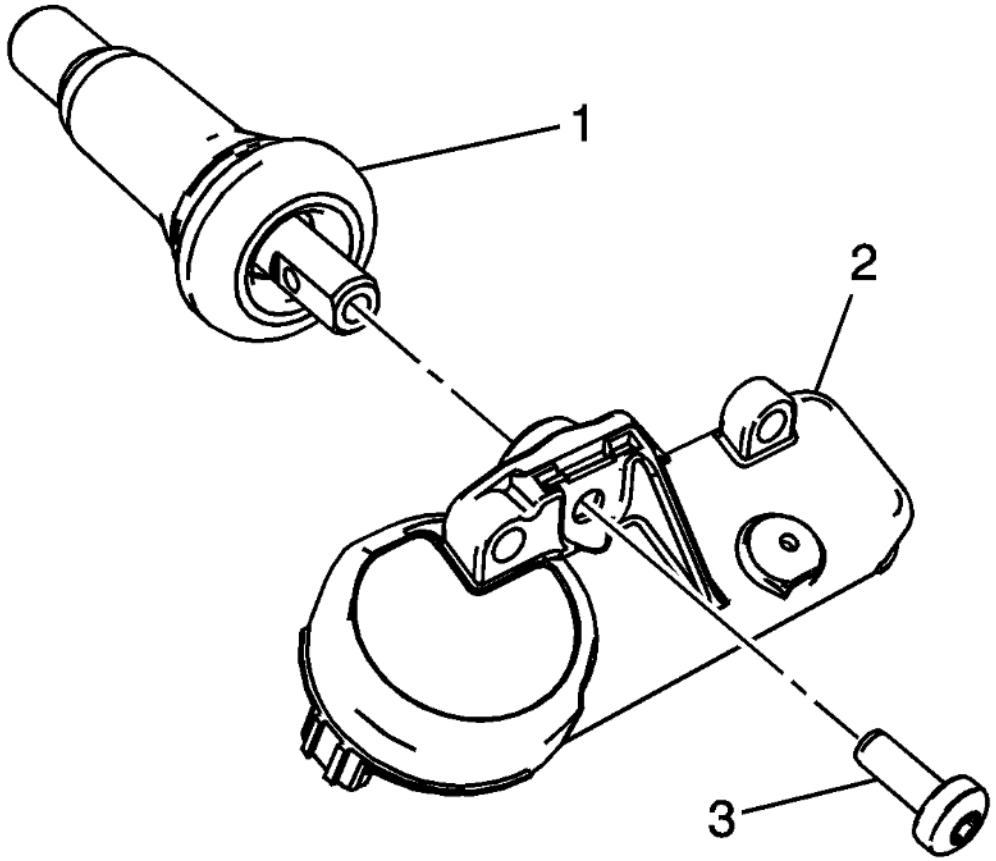

Fig. 2: Tire Pressure Indicator Sensor Components

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CAUTION: **Refer to Fastener Caution**

NOTE:

- **Ensure the flat of the valve, lines up with the flats of the snap in the enclosure.**
- **When servicing the tire pressure sensor always use a NEW valve stem and NEW TORX screw during installation.**

1. Install the tire pressure sensor (2) to the NEW valve stem (1) with a NEW TORX screw (3) and tighten to 10 N.m (89 lb in).

CAUTION: **When mounting the tires, use an approved tire mounting lubricant. DO NOT use silicon or corrosive base compounds to lubricate the tire bead and the wheel rim. A silicon base compound can cause the tire to slip on the rim. A corrosive type compound can cause tire or rim deterioration.**

2. Apply tire soap to the rubber portion of the valve stem (1).

NOTE: **Snap Fit TPM sensors are still shipped in the OFF mode. However, the TPM no longer needs to be spun to remove it from the OFF mode. The sensor will exit its OFF state when the tire is inflated. The technician can then program the vehicle as normal.**

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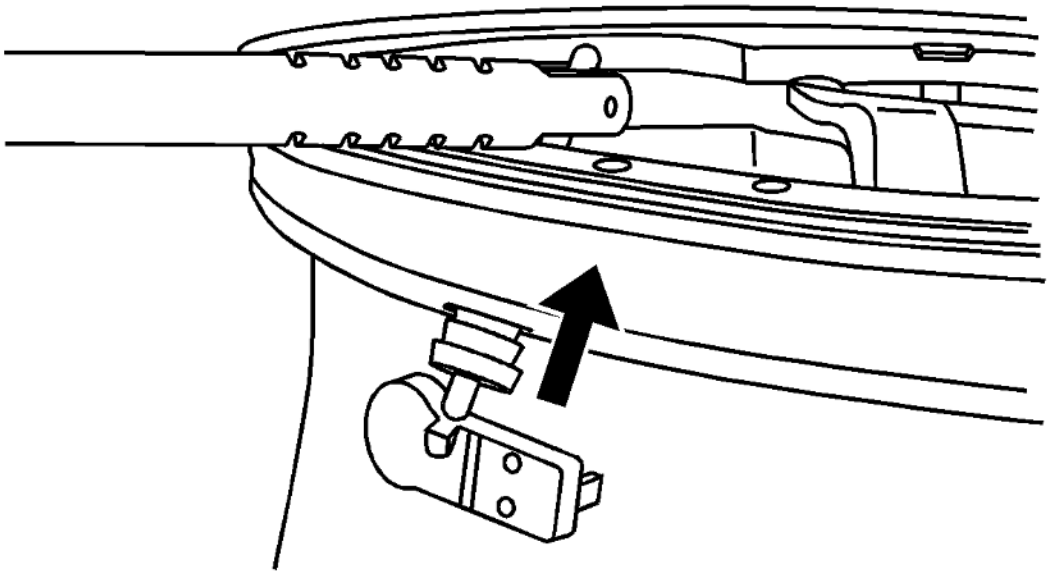

Fig. 3: Tire Valve Stem Mounting Tool
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3. Using a tire valve stem mounting tool, pull the valve stem through in a direction parallel to the valve hole on the rim.
4. Mount the tire to the rim.
5. Install the tire and wheel assembly. **Tire and Wheel Removal and Installation (6-Lug Wheel)** **Tire and Wheel Removal and Installation (8-Lug Wheel)**

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6. Remove the supports and lower the vehicle.
7. Program the tire pressure sensors. Refer to **Tire Pressure Indicator Sensor Learn**

TIRE PRESSURE INDICATOR SENSOR LEARN

Special Tools

- **EL-46079** Tire Pressure Monitor Diagnostic Tool
- **EL-50448** Tire Pressure Monitor Sensor Activation Tool

For equivalent regional tools, refer to **Special Tools**.

Learn Mode Description

The tire pressure monitor system uses the instrument cluster, body control module (BCM), 4 radio frequency transmitting pressure sensors, remote control door lock receiver (RCDLR) and the serial data circuit to perform the tire pressure monitor learn mode functions. The sensor learn procedure must be performed after every tire rotation, BCM replacement, or sensor replacement. Once the Learn mode has been enabled, each of the sensors unique identification codes can be learned into the BCM memory. When a sensor ID has been learned, the BCM sounds a horn chirp indicating the sensor has transmitted its ID and the BCM has received and learned it. The BCM must learn the sensor IDs in the proper sequence to determine correct sensor location. The first learned ID is assigned to the left front location, the second to right front, the third to right rear and the fourth to left rear. The turn signals will individually illuminate indicating which location is to be learned in the proper sequence.

Sensor Functions Using EL-46079, EL-50448, or Equivalent

Each sensor has an internal low frequency coil. When the tire pressure monitor special tool is used in activate mode, it produces a low frequency transmission that activates the sensor. The sensor responds to a low frequency activation by transmitting in Learn Mode-Remotely Triggered. When the BCM receives a learn mode transmission while in Learn mode, it will assign that sensors ID to the location on the vehicle relative to the order in which it was learned.

Learn Mode Cancellation

The Learn mode will cancel if the ignition is cycled to OFF or if more than 2 minutes has elapsed for any sensor or 5 min overall has elapsed to match all four sensors. If the relearn mode is cancelled before the first sensor is learned, the original sensor IDs will be maintained. If the relearn mode is canceled after the first sensor is learned, the following will occur:

- All stored sensor IDs will be invalidated in the BCM memory.
- If equipped, the driver information center will display dashes instead of tire pressures.

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- DTC C0775 will be set.

These conditions will now require the Learn procedure to be repeated for the system to function properly.

Tire Pressure Monitor Learn Procedure

NOTE: **In the event a particular sensor is activated and the horn does not chirp, it may be necessary to rotate the wheel so that the valve stem is in a different position due to the sensor signal is being blocked by another component. Make sure the TPM tool battery is sufficient to complete TPM learn process. Do not place the TPM tool directly on the valve stem. The TPM tool should be placed against the tire sidewall near the valve stem. The TPM sensor learn activation procedure may have to be repeated up to 3 times before determining a sensor is malfunctioning.**

1. Apply park brake (manual transmission only).
2. Ignition On/Vehicle in Service Mode, using a scan tool or driver information center buttons (refer to owners manual), initiate the Tire Pressure Sensors Learn mode. A double horn chirp will sound indicating the Learn mode has been enabled. The left front turn signal will also be illuminated.
3. Starting with the left front tire, active the sensor by holding the antenna of the tire pressure monitor special tool aimed upward against the tire sidewall close to the wheel rim at the valve stem location. Press and release the activate button. Ensure that the transmit indicator on the special tool indicates that the sensor activation signal is being transmitted. Wait for a horn chirp. If the horn does not chirp, repeat the sensor activation sequence with the tool. Once the horn chirp has sounded, the sensor information is learned and the turn signal in the next location to be learned will illuminate.
4. After the horn chirp has sounded and the right front turn signal is illuminated, repeat step 3 for the remaining 3 sensors in the following order:
    1. Right front
    2. Right rear
    3. Left rear
5. When the left rear sensor has been learned and a double horn chirp has sounded, the learn process is complete and the BCM exits the Learn mode.

DESCRIPTION AND OPERATION

TIRE PRESSURE MONITOR DESCRIPTION AND OPERATION

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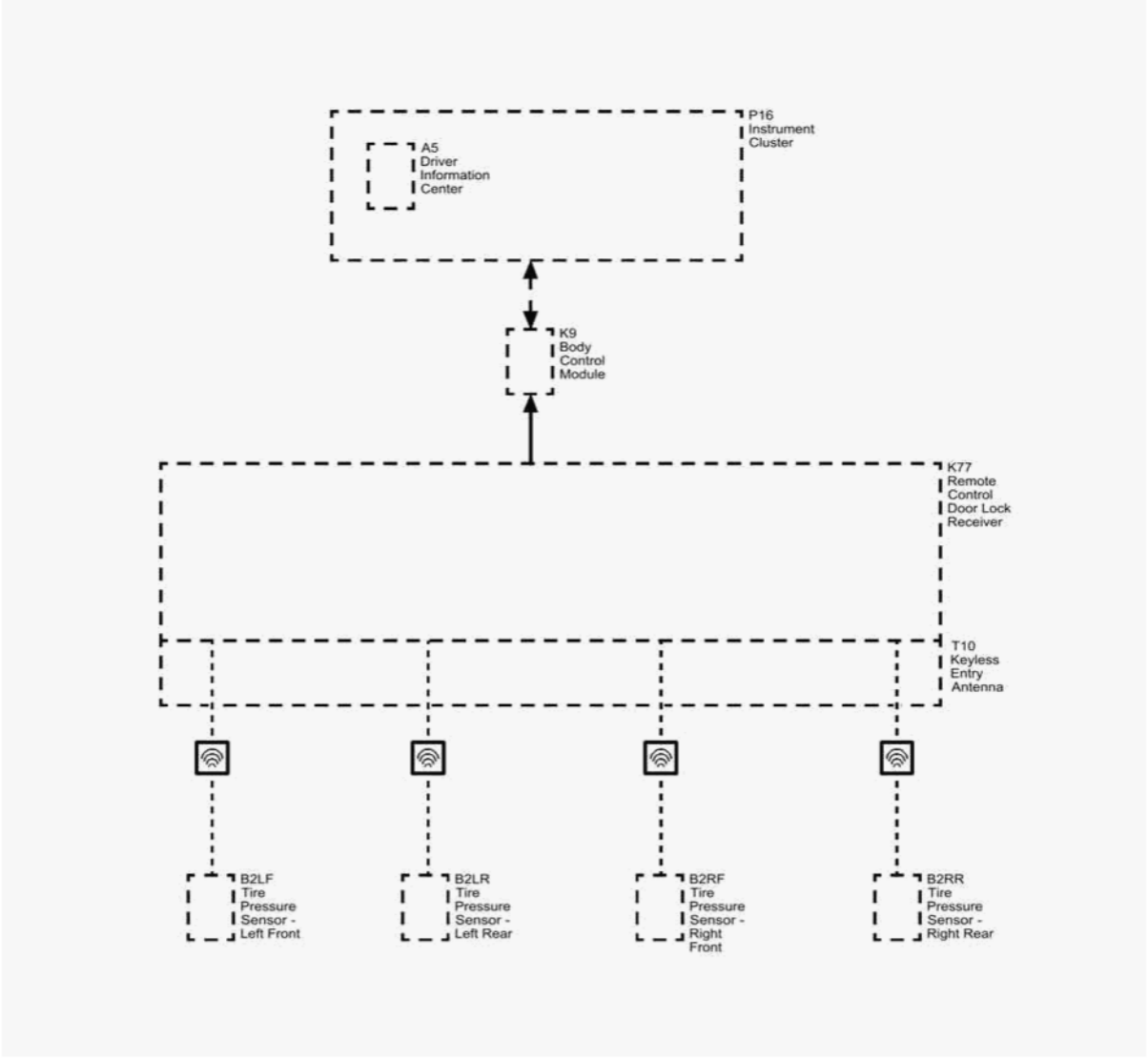

Fig. 4: Tire Pressure Monitoring System Block Diagram
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
P16	P16 Instrument Cluster
P9	P9 Driver Information Center Display
K9	K9 Body Control Module

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Callout	Component Name
K77	K77 Remote Control Door Lock Receiver
T10	T10 Keyless Entry Antenna
B2LF	B2LF Tire Pressure Sensor - Left Front
B2LR	B2LR Tire Pressure Sensor - Left Rear
B2RF	B2RF Tire Pressure Sensor - Right Front
B2RR	B2RR Tire Pressure Sensor - Right Rear

Special Tools

- **EL-46079/J-46079** Tire Pressure Monitor Diagnostic Tool
- **EL-50448** Tire Pressure Monitor Sensor Activation Tool

For equivalent regional tools, refer to **Special Tools**.

The tire pressure monitor system warns the driver when a significant loss of tire pressure occurs in any of the 4 tires and allows the driver to display the individual tire pressures and their locations on the driver information center.

The system uses the body control module (BCM), driver information center, instrument cluster, remote control door lock receiver (RCDLR), and a radio frequency (RF) transmitting pressure sensor in each wheel/tire assembly, and the serial data circuit to perform the system functions. Each sensor has an internal power supply with an approximate 10 year service life.

When the vehicle is stationary, the sensor's internal accelerometer is inactive, which puts the sensors into a Stationary state. In this state the sensors sample tire pressure once every 30 seconds and do not transmit at all if the tire pressure does not change. As vehicle speed increases, centrifugal force activates the sensors internal accelerometer causing the sensors to go into Wake and then Drive mode. In Drive mode, the sensors sample tire pressure once every 30 seconds and transmit in Drive mode once every 60 seconds. The RCDLR receives and translates the data contained in each sensors RF transmission into sensor presence, sensor mode, and tire pressure and passes it to the BCM. In turn, the BCM sends the tire pressure and tire location data to the driver information center via the serial data circuit where they are displayed.

The sensors continuously compare their last pressure sample to their current pressure sample and will transmit in Learn Mode-Pressure Triggered if a 8.3 kPa (1.2 psi) change in tire pressure has been detected in either a Stationary or Drive state. When the tire pressure monitor system detects a significant loss of tire pressure, the tire pressure monitor indicator icon is illuminated on the instrument cluster and if equipped, a tire pressure low, add air to tire type message is displayed on the driver information center. Both the indicator icon and driver information center message can be cleared by adjusting the tire pressures to the recommended pressures and driving the vehicle above 40 km/h (25 mph) for at least 2 minutes.

If power is disconnected from the BCM or if the vehicle battery is disconnected, each tire pressure monitor sensor ID is retained but all of the tire

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pressure information is lost. Under these circumstances the BCM cannot assume that the tire pressures were maintained over an unknown period of time. If equipped, the driver information center will display all dashes and the scan tool will indicate a default tire pressure value of 1020 kPa (148 psi) for each tire. Driving the vehicle above 40 km/h (25 mph) for at least 2 minutes will activate the sensors causing the driver information center to display the current tire pressures. The **EL-46079/J-46079** tire pressure monitor diagnostic tool, **EL-50448** tire pressure monitor sensor activation tool, or equivalent may also be used to activate the sensors as well.

The BCM has the ability to detect malfunctions within the tire pressure monitor system. In the event a DTC is set, the tire pressure monitor indicator icon on the instrument cluster, if equipped will flash for 1 minute and then remain illuminated after the ignition is turned ON and the instrument cluster bulb check has been completed. Any malfunction detected will cause the driver information center to display a service tire monitor system type message. For more information on other functions of the BCM, refer to **Keyless Entry System Description and Operation (Without ATH)** **Keyless Entry System Description and Operation (With ATH)** .

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/Description

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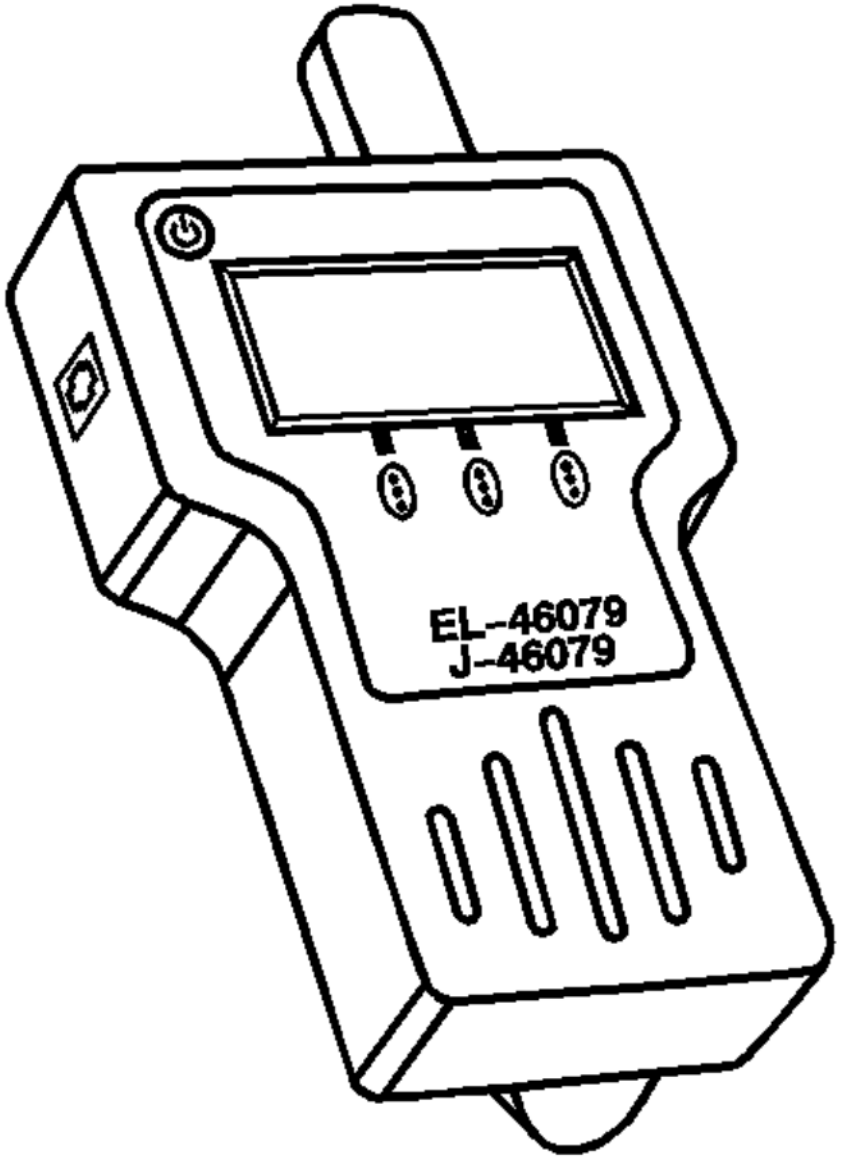
Illustration	Tool Number/Description
	EL 46079 Tire Pressure Monitor Diagnostic Tool

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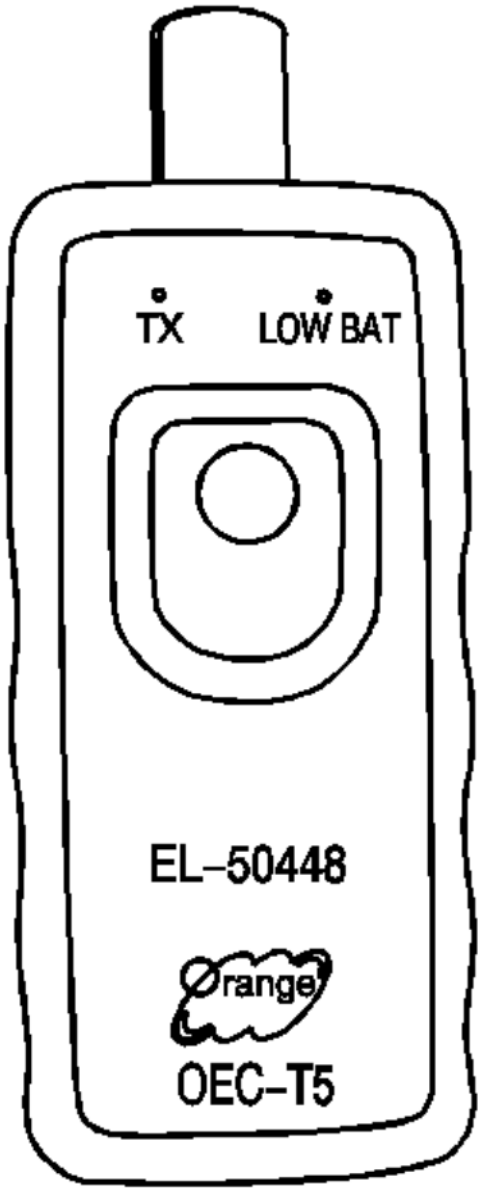
Illustration	Tool Number/Description
	EL 50448 Tire Pressure Monitor Sensor Activation Tool

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