Component Procedures: Tire Pressure Sensor

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Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Tire Pressure Sensor > Witho?	22854866	Tire Pressure Sensor	76.06	
Tire Pressure Sensor > With ?	20964159	Tire Pressure Sensor	120.96	

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Tire Pressuring Monitoring > Tire Pressure Se?	B	0.6	0.6

Tire Pressure Indicator Sensor Replacement (Article 13628)

Single Use Fasteners and Components
- Tire Pressure Indicator Sensor Bolt
- Tire Valve Front and Rear Stem

Removal Procedure
- Raise and support the vehicle. Lifting and Jacking the Vehicle
- Remove the tire and wheel assembly. Tire and Wheel Removal and Installation
- Dismount the tire from the rim. Tire Dismounting and Mounting
- Insert an anti rotation pin through the cross-drilled hole in the valve stem (1). Click for full-size image
- Hold the valve stem (3) to prevent it from rotating, then remove and DISCARD the bolt (1) from the tire pressure indicator sensor (2). Click for full-size image
- Pull the tire pressure indicator sensor (2) straight off the valve stem (3).
- Cut the inner seal off the valve stem (3).
- Remove and DISCARD the valve stem (3) by pulling it through the rim using a valve stem removal tool.
- Clean all sealing surfaces.

Installation Procedure
- Remove the NEW bolt (3) from the tire pressure indicator sensor (2) and pull it straight off the NEW valve stem (1). Click for full-size image
- Apply lubricant to the NEW valve stem (1). Adhesives, Fluids, Lubricants, and Sealers
- Using a tire pressure valve stem mounting tool, pull the valve stem (3) through in a direction parallel to the valve hole on the rim. Click for full-size image
- Rotate the valve stem (3) by hand to align the tire pressure indicator sensor (2).
- Assemble the tire pressure indicator sensor (2) to the valve stem (3) and install the NEW bolt (1) hand tight.
- Hold the valve stem (1) to prevent it from rotating and tighten the bolt to 1.4 Nm (12.4 lb in) .
- Check the valve stem (1) to ensure that it is fully seated on the rim (2) as follows: Click for full-size image
- The rim hole edge has to be completely in the notch of the valve stem.
- The valve and the rim hole have to be concentric.
- Make sure that there is a parallel gap between the valve stem (1) and the tire pressure indicator sensor (2). Click for full-size image
- When correctly positioned there will be a parallel gap between the tire pressure indicator sensor (1) and the wheel. Click for full-size image
- Tire pressure indicator sensors are shipped in the OFF mode. The sensor will exit its OFF state when the tire is inflated.
- The tire should not have contact with the tire pressure indicator sensor during installation to prevent damage to the tire pressure indicator sensor.
- Mount the tire to the rim. Tire Dismounting and Mounting
- Install the tire and wheel assembly. Tire and Wheel Removal and Installation
- Remove the support and lower the vehicle.
- Perform the tire pressure indicator sensor learn procedure. Tire Pressure Indicator Sensor Learn

Tire Pressure Indicator Sensor Learn (Article 13627)

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 sensor s, 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.
- 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

- Apply park brake.
- Ignition On/Vehicle in Service Mode, using a scan tool or driver information center buttons (refer to owners manual), initiate the Tire Pressure Sensor s Learn mode. A double horn chirp will sound indicating the Learn mode has been enabled. The left front turn signal will also be illuminated.
- Starting with the left front tire, activate 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.
- 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:
- Right front
- Right rear
- Left rear
- 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.