

TIRE PRESSURE MONITOR SYSTEMS

GM - Cadillac - CTS & CT6 - 2014-19

MODEL COVERAGE

Models Covered

Model	Year(s)
CTS	2014-19
CT6	2016-19

DESCRIPTION & OPERATION

NOTE: For 2014-15 models, this article only applies to the 4-door Sedan.

NOTE: If a tire pressure sensor is replaced, or if wheels have been rotated, tire pressure sensors must be relearned. See [RESET PROCEDURES](#).

TIRE PRESSURE MONITOR (TPM) SYSTEM

The Tire Pressure Monitor (TPM) system alerts the driver of a large tire pressure change in any of the 4 tires, while vehicle is being driven. The system will also display individual tire pressures and their locations on the Driver Information Center (DIC).

The TPM system uses the Body Control Module (BCM), Instrument Panel Cluster (IPC), Driver Information Center (DIC), a Radio Frequency (RF) transmitting pressure sensor in each wheel/tire assembly, and the serial data circuit to perform the system functions.

When vehicle is stationary, the sensors go into stationary mode. In this mode, the sensors sample the tire pressure once every 30 seconds and only transmit if the tire pressure changes, to minimize sensor battery consumption. As vehicle speed increases, the sensors go into drive mode, in which they transmit once every 60 seconds. Each sensor takes a pressure measurement sample continuously; if the tire pressure increases or decreases by more than 1.2 psi (8.3 kPa), the sensor will transmit in re-measure mode in stationary mode or drive mode.

TIRE PRESSURE MONITOR WARNING INDICATORS

When TPM system detects a significant loss or gain of tire pressure, a "CHECK TIRE PRESSURE" message will appear on the DIC (if equipped), and the low tire pressure warning indicator is displayed on the IPC.

Any malfunctions detected will cause the DIC to display a "SERVICE TIRE MONITOR" warning message.

When the tire pressure warning light illuminates and warning message appears, immediately check air pressure of all tires and adjust to the specified pressure. Drive vehicle above 25 mph (40 km/h) for a few minutes. Ensure warning indicators go out. If warning indicators are still on or display shows dashes instead of a value, there is a problem in the TPM system. See appropriate manufacturer service information.

TPMS RESET PROCEDURES

NOTE: If a tire pressure sensor is replaced, or if wheels have been rotated, tire pressure sensor must be relearned. The relearn be can be performed using either the Driver Information Center (DIC), or a scan tool. See [Using Scan Tool](#) or [Using Driver Information Center \(DIC\)](#) .

When the tire pressure warning light illuminates and warning message appears, immediately check air pressure of all tires and adjust to the specified pressure. Drive vehicle above 25 mph (40 km/h) for a few minutes. Ensure warning indicators go out.

TIRE PRESSURE SENSOR LEARN

NOTE: The tire pressure monitor system uses the instrument cluster, body control module (BCM), 4 radio frequency transmitting pressure sensors, and the serial data circuit to perform the tire pressure monitor learn mode functions. 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.

NOTE: Before proceeding with the steps below, ensure that no other sensor learn procedure is being performed simultaneously, or that no tire pressures are being adjusted on another TPM equipped vehicle within close proximity.

NOTE: In the following procedures, a TPM Sensor Activation Tool (J-46079) may be used in place of increasing/decreasing pressures to enable sensor. To use, place activator antenna against the tire sidewall close to the wheel rim at the valve stem location, then press and release the ACTIVATE button.

NOTE: If TPM Sensor Activation Tool (J-46079) is used, and vehicle is having trouble entering relearn mode, check batteries in activation tool. Low batteries may allow some functions to work, but not allow vehicle to perform learn function. When the internal battery is fresh (fully charged), the indicator is "full" or all dark. When the battery is depleted, the indicator shows "empty" or all light.

Using Scan Tool

NOTE: Before proceeding with the steps below, ensure that no other sensor learn procedure is being performed simultaneously, or that no tire pressures are being adjusted on another TPM equipped vehicle within close proximity.

1. Connect scan tool. Turn ignition switch to RUN position. Apply parking brake.
2. Using scan tool, select "SPECIAL FUNCTIONS".
3. Select "SENSOR LEARN MODE ENABLE", and press ENTER key.
4. Press ON soft key. A double horn chirp will sound, indicating the learn mode has been enabled.

NOTE: The left front turn signal will also illuminate to indicated the learn mode has been enabled.

5. Starting with left front tire, follow either of these 2 procedures:
 - **Increase/Decrease Method:** Increase or decrease tire pressure for 8-10 seconds, then wait for the horn to make a chirp sound. The horn chirp may occur before the 8-10 second pressure increase/decrease time period has been reached, or up to 30 seconds after the 8-10 second pressure increase/decrease time period has been reached
 - **Sensor Activation Tool Method:** Starting with the left front tire, hold the activation tool against the tire wall aiming upward with the antenna. Press the activate button and wait for a horn chirp.

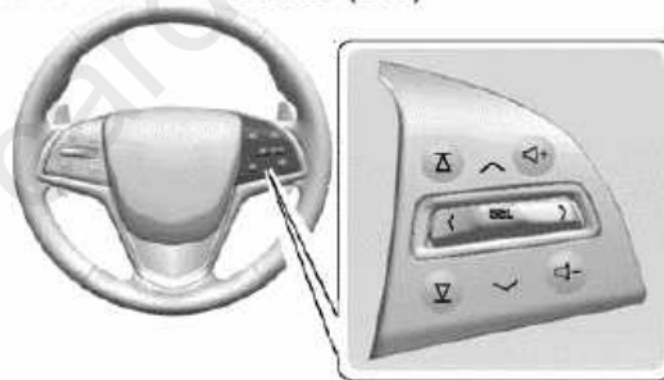
6. After horn chirp has sounded, repeat procedure for the next 3 sensors in the following order: Right Front, Right Rear And Left Rear.
7. After left rear sensor has been learned, a double horn chirp will sound, indicating all 4 sensor IDs have been learned. Turn ignition switch to OFF position. Adjust all tire pressures to specification.

Using Driver Information Center (DIC)

NOTE: Before proceeding with the steps below, ensure that no other sensor learn procedure is being performed simultaneously and that no tire pressures are being adjusted on another TPM equipped vehicle within close proximity.

1. Place the vehicle power mode in ON/RUN/START. Apply parking brake.
2. Make sure the Tire Pressure info display option is turned on. The info displays on the DIC can be turned on and off through the Settings menu.
3. Under the Settings menu select Display Options and then Tire Pressure using the five-way DIC control on the right side of the steering wheel. See [Fig. 1](#).
4. Press and hold the SEL button. The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARNING ACTIVE message displays on the DIC screen.
5. Starting with left front tire, follow either of these 2 procedures:
 - **Increase/Decrease Method:** Increase or decrease tire pressure for 8-10 seconds, then wait for the horn to make a chirp sound. The horn chirp may occur before the 8-10 second pressure increase/decrease time period has been reached, or up to 30 seconds after the 8-10 second pressure increase/decrease time period has been reached
 - **Sensor Activation Tool Method:** Starting with the left front tire, hold the activation tool against the tire wall aiming upward with the antenna. Press the activate button and wait for a horn chirp.
6. After horn chirp has sounded and the right turn signal has illuminated, repeat procedure for the next 3 sensors in the following order: Right Front, Right Rear, Left Rear.
7. After left rear sensor has been learned, a double horn chirp will sound, indicating all 4 sensor IDs have been learned. Turn ignition switch to OFF position. Adjust all tire pressures to specification.

Driver Information Center (DIC)



▲ or ▼ : Press the five-way control to move up or down in a list.

< or > : Press the five-way control to move between the interactive display zones in the cluster. Press < to go back to the previous menu.

SEL (Select): Press the center to open a menu or select a menu item. Press and hold to reset values on certain screens.

Fig. 1: Identifying Driver Information Center (DIC) Controls (Typical)
Courtesy of GENERAL MOTORS CORP.

DISMOUNTING/MOUNTING PROCEDURES

CAUTION: The tire should be dismounted from the wheel using the tire changer manufacturer's instructions. Use the following information to avoid damage during the dismounting/mounting procedures.

NOTE: If vehicle's tires are replaced with those not having a TPC Spec number, the TPM system may give an inaccurate low pressure warning. Non-TPC Spec tires may give a low pressure warning that is higher or lower than the proper warning level achieved by TPC Spec numbered tires.

NOTE: If a tire pressure sensor or the RCDLR is replaced, or if wheels have been rotated, tire pressure sensors must be relearned. See [RESET PROCEDURES](#).

TIRE PRESSURE SENSOR

CAUTION: DO NOT inject any tire liquid or aerosol tire sealant into tires, as this may cause a malfunction of the tire pressure sensors. If any tire sealant is noted upon tire dismounting, replace the sensor. Also remove all residual liquid sealant from the inside of the tire and wheel surfaces.

There are currently two different kinds of Tire Pressure Monitor sensors in use on this vehicle. Identification of which sensor is in use can easily be made after the tire has been removed from the wheel by referring to [Fig. 2](#) and [Fig. 3](#).

Removal & Installation

1. Raise vehicle on a suitable support. Remove tire/wheel assembly from vehicle.
2. Dismount tire from wheel following tire changer manufacturer's instructions while paying special attention to the following to avoid damaging tire pressure sensor:
 - Place the sensor's cap and valve on a dry, clean surface after removal. The cap is aluminum and the valve is nickel-plated to prevent corrosion. DO NOT substitute a cap or valve made of any other material.
 - Position the bead breaking fixture 90 degrees from valve stem when separating tire bead from wheel.
 - Position the mounting/dismounting head so tire iron (or pry bar) can be inserted slightly clockwise of sensor body when prying tire bead up and over the mounting/dismounting head.
 - Using tire machine, rotate tire/wheel assembly clockwise when transferring the tire bead to the outside of the wheel rim.
 - Repeat items for inner bead.
3. If the TPM sensor is the Clamp-in style (see [Fig. 2](#)), follow Clamp-In style Removal as follows. If it is a Snap-in style (see [Fig. 3](#)), follow the Snap-in Style Removal below.

Clamp-in Style Sensor Removal

1. Remove tire pressure sensor nut. See [Fig. 2](#).
2. Remove sensor from wheel hole.
3. Remove sensor grommet from valve stem.
4. Follow [Clamp-In Sensor Installation](#) below, to replace the sensor.

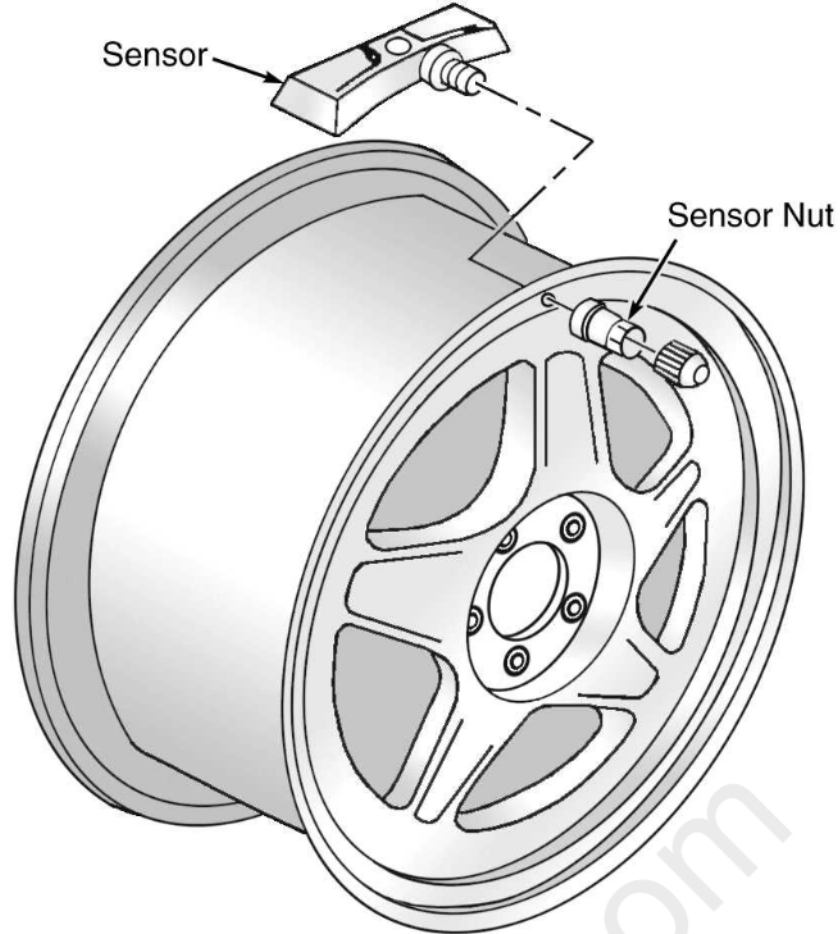


Fig. 2: Exploded View Of Clamp-In Style Tire Pressure Sensor
Courtesy of GENERAL MOTORS CORP.

Snap-in Style Sensor Removal

1. Remove the TORX screw (3) from the tire pressure sensor (2) and pull it straight off the tire pressure valve stem (1) (see [Fig. 3](#)).
2. Remove the tire pressure valve stem by pulling it through the rim.
3. Follow [Snap-in Style Sensor Installation](#) below, to replace the sensor.

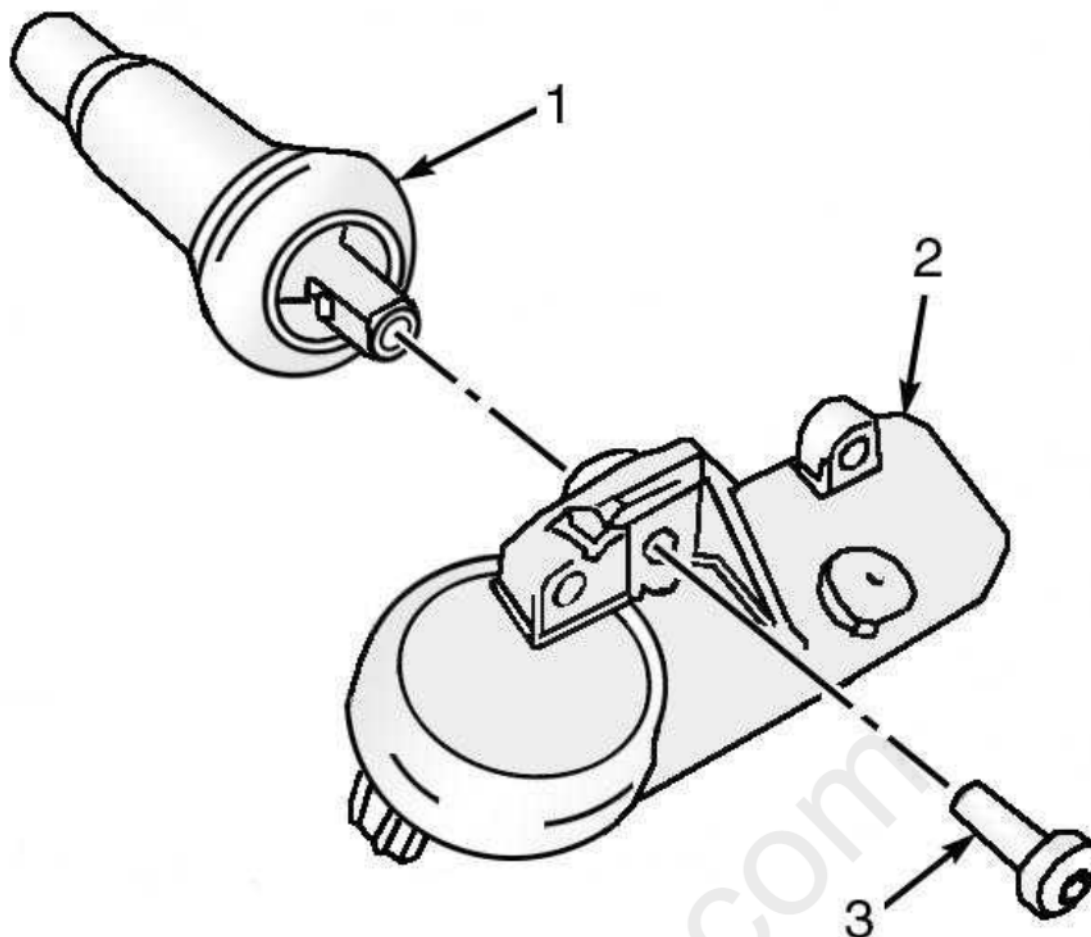


Fig. 3: Exploded View Of Snap-In Style Tire Pressure Sensor
 Courtesy of GENERAL MOTORS CORP.

Clamp-In Sensor Installation

1. Clean any dirt or debris from grommet sealing areas. Install grommet on sensor valve stem.
2. Insert sensor in wheel hole with the air passage facing away from the wheel.
3. Install sensor nut, and position sensor body parallel to inside wheel surface while tightening nut to 62 INCH lbs. (7 N.m).
4. Before installing tire on the wheel, note the following items to avoid tire pressure sensor damage upon tire mounting:
 - Position the mounting/dismounting head 180 degrees from valve stem.
 - Position the bead transition area 45 degrees counterclockwise of valve stem.
 - Using tire machine, rotate tire/wheel assembly clockwise when transferring tire bead to the inside of the wheel rim.
 - Repeat items for outer bead.
5. Install tire on wheel. Install tire/wheel assembly on vehicle. Retrain tire pressure sensor. See **RESET PROCEDURES**.

NOTE: A service replacement tire pressure sensor is shipped in OFF mode. In this mode, the sensor's unique identification code cannot be learned into the RCDLR's memory. The sensor must be taken out of OFF mode by spinning the tire/wheel assembly above 25 mph (40 km/h) for at least 10 seconds in order to close the sensor's internal roll switch.

Snap-in Style Sensor Installation

1. Assemble the tire pressure sensor (2) to the valve stem and install the new TORX screw (3). See **Fig. 3**.
2. Apply tire soap to the rubber portion of the valve stem.

3. Using a tire valve stem mounting tool, pull the valve stem through in a direction parallel to the valve hole on the rim. See [Fig. 4](#).
4. Before installing tire on the wheel, note the following items to avoid tire pressure sensor damage upon tire mounting:
 - Position the mounting/dismounting head 180 degrees from valve stem.
 - Position the bead transition area 45 degrees counterclockwise of valve stem.
 - Using tire machine, rotate tire/wheel assembly clockwise when transferring tire bead to the inside of the wheel rim.
 - Repeat items for outer bead.
5. Install tire on wheel. Install tire/wheel assembly on vehicle. Retrain tire pressure sensor. See [RESET PROCEDURES](#).

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.

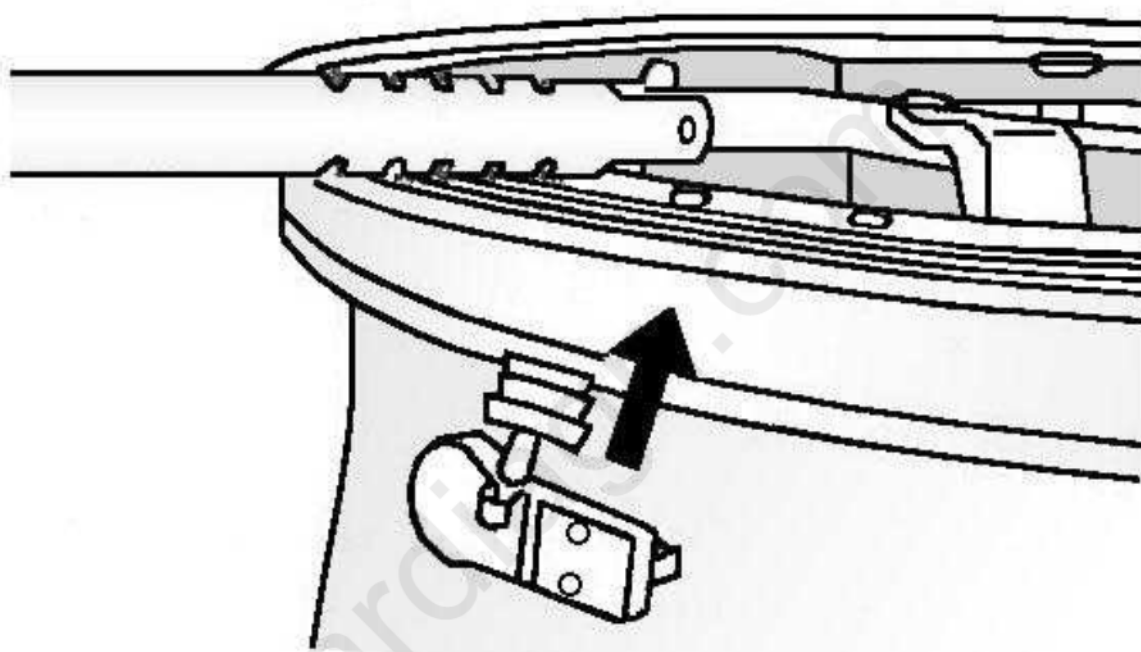


Fig. 4: Installation Of Snap-In Sensor/Valve Assembly
Courtesy of GENERAL MOTORS CORP.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Component	Ft. Lbs. (N.m)
Wheel Nut (CT6)	111 (150)
Wheel Nut (CTS)	140 (190)
	INCH Lbs. (N.m)
Clamp-in Sensor Nut	62 (7)
Snap-in Sensor TORX Screw	35 (4)