

# TPMS REFERENCE

## CHRYSLER



Chrysler uses a Schrader Electronics or VDO system on just about every late-model vehicle. Chrysler never used a band sensor in any of its platforms. On some 2004 and 2005 models, Chrysler may have used two different TPMS systems on a vehicle platform depending on if the vehicle was equipped with AWD or if the system was optional or standard.

On early TPMS equipped models, the static relearn process requires a relearn procedure to be initiated on the vehicle's information center display followed by activating each TPMS in turns to enable each of the TPMS sensors' unique ID numbers to be loaded into the Wireless Control Module.



The TPMS tool should be held on the tire adjacent to the valve stem and not directly over the TPMS when activating the sensor. Each time a code has been successfully loaded, the horn acknowledges.

The best way to reprogram the Chrysler systems is with a scan tool or TPMS specific tool. Not only is it faster, but having the ability to confirm that the system has been reset can save your shop comebacks. Also, using a scan tool or TPMS tool can diagnose faulty sensors and weak batteries.

The technician should always refer to manufacturer's specifications for proper torque require-

ments when replacing nuts and valve cores; use new grommets, nuts, plastic or nickel-plated valve caps and electro-less,

nickel-plated valve cores when performing any tire service; never use a brass valve core or unplated brass cap with an aluminum TPMS sensor stem. Contact between dissimilar metals can cause galvanic corrosion, which can lead to loss of air pressure.

- 2004-08 Chrysler Pacifica AWD
- 2005-2011 300/300C
- 2007-2009 Aspen
- 2008-2011 PT Cruiser
- 2009-2011 Sebring Sedan
- 2005-2007 Town & Country
- 2008-2011 Avenger
- 2007-2010 Caliber
- 2009-2010 Challenger SRT8
- 2006-2011 Charger
- 2007-2011 Ram/Durango Trucks
- 2007-2010 Nitro
- 2007-2009 Sprinter

**1. Inflate all tires to correct pressure specification as indicated on the Vehicle Tire Placard.**

**2. Park vehicle with the ignition switch set to the off position for 20 minutes.**

**3. Drive the vehicle faster than 15 mph for at least 20 minutes. The sensor locations and ID numbers will be automatically registered during drive cycle.**

During this reset period, the instrument panel TPMS indicator may be illuminated. This is normal unless the indicator is flashing. It will turn off after a period of driving at a sufficient speed, usually 1-20 minutes at speeds more than 15-20

mph. If your initial drive is too short, the process will reinitiate the next time the vehicle is driven.

**ALTERNATE METHOD: Perform the TPMS sensor initialization procedure using a scan tool. This will turn off the instrument panel TPMS light.**

**2002 - 2004 300M (Option)**

**2004 - 2008 Crossfire (incl. SRT6)**

**2002 - 2003 Caravan 4X4**

**1.** Inflate all tires to correct pressure specification as indicated on the Vehicle Tire Placard. Calculate for air temperature.

**2.** Press MENU key on the electronic vehicle information center until RETRAIN TIRE SENSORS-NO is displayed.

**3.** Press STEP button until YES appears.

**4.** Press MENU button to select YES, causing display to read TRAIN LEFT FRONT TIRE.

**5.** Place activation tool on the left front tire valve stem. The tool should remain in place for approximately five seconds until the horn sounds.

**6.** Repeat procedure for the remaining sensors in this sequence: right front, right rear, left front and spare.

**7.** After all four or five sensors have been reset, the electronic vehicle information center will display: TRAINING COMPLETE. If TRAINING ABORTED appears on the electronic vehicle information center at any time, move the vehicle ahead at least one foot and restart procedure.

**8.** Press either MENU, RESET, STEP or C/T on the electronic driver information center to exit the reset procedure.

Learn mode will cancel if the system is not re-trained within the allotted time and the procedure will have to be repeated for all tires.





GM TPMS systems on Buick, Pontiac, C h e v y (Chevrolet), GMC Cadillac and Hummer

models are some of the easiest to service if you have the right tools and knowledge. Starting in 2007, most vehicles use a Schrader- or VDO-manufactured system that shares the same relearn procedures and behaviors. **There are exceptions, like the Pontiac Vibe.**

- A GM TPMS sensor has pressure, temperature and acceleration sensors. The unit also has a radio transmitter, receiver and battery. **Sensors have a 10 year /150,000 mile (240,000 km) battery life.**

- The antenna and receiver are the same ones that are used for the keyless-entry system. The antenna is typically sandwiched between the layers of glass in the front or rear glass. But,

some vehicles have dedicated antenna mounted in various places.

- The keyless entry module communicates with the TPMS sensors and relays the information with the Body Control Module (BCM) on the CAN BUS. **If the keyless entry module is replaced, the sensors must be relearned, same with the key fobs.**

- When the TPMS 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.

- **It is best to perform the TPMS relearn procedure away from the shop in the parking lot.** This decreases the chance of other radio signals interfering with the relearn process.

- If you can not get a sensor to initialize, try pushing the vehicle forward a foot or two. **The signals can be blocked by components like rotors, calipers and knuckles.** By repositioning the sensor, it may unblock the sensor. This is far more common on the front wheels.

### TPMS Sensor Matching

1. Set the parking brake.
2. Turn the ignition switch to ON/RUN with the engine off.
3. Press and hold the keyless Entry fob transmitter's LOCK and UNLOCK buttons, at the same time, for about five seconds to start the TPMS learn mode. The horn sounds twice indicating the TPMS receiver is ready and in learn mode.
4. Starting with the left front tire, activate the sensor by holding the TPMS tool aimed upward against the tire sidewall close to the wheel rim at the valve stem location. Press and release the activate button and wait for a horn chirp.
5. Once the horn chirp has sounded, the sensor information is learned

and the turn signal in the next location to be learned will illuminate. On most models, the driver-side front turn signal also comes on to indicate that corner's sensor is ready to be learned. Once the learn mode has been enabled, each of the sensors unique identification codes can be learned.

6. When a sensor ID has been learned, the module sends a serial data message to the BCM to sound a horn chirp. This verifies the sensor has transmitted its ID and has received and learned it. The module must learn the sensor IDs in the proper sequence to determine sensor's 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. On most models, the turn signals will individually illuminate indicating which location is to be learned in the proper sequence.

### Trouble Shooting

The learn mode will cancel if the ignition is cycled to OFF or if more than two minutes has elapsed for any sensor that has not been learned. If the learn mode is cancelled before the first sensor is learned, the original sensor IDs will be maintained. If the learn mode is canceled after the first sensor is learned, the following will occur:

- All stored sensor IDs will be invalidated in the RCDLR memory.

If equipped, the DIC will display dashes instead of tire pressures. If the learn mode is canceled after the first sensor is learned, the following will occur:

- All stored sensor IDs will be invalidated in the module memory.
- If equipped, the DIC 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.





*From 2006-2009, Ford used banded sensors that are mounted in the center of the rim, 180° from the valve stem. In 2010, Ford reverted to the valve stem mounted sensors.*

### 2002-2005 Direct Systems (2006 Expedition)

Ford systems use the unique ID numbers of the sensors that have to be registered along with their position on the car with the tire pressure monitor ECU.

This process requires the activation of the TPMS sensor using a low frequency radio signal tool or magnet to excite the sensor so UHF data is transmitted. The transmitted data includes the TPMS ID, the pressure and temperature.

If a TPM sensor or its position on the car is changed without reregistering the IDs, the TPMS warning light will turn on and stay on until the IDs are reregistered.

### Sensor Training

**NOTE:** The tire pressure sensor training procedure must be done in an area without radio frequency (RF) noise. RF noise is generated by electrical motor and appliance operation, cellular telephones and remote transmitters.

1. Turn the ignition switch to the OFF position.
2. Turn the ignition switch to the RUN position three times, ending in the RUN position. Do not wait more than two minutes between each key cycle.
3. Press and hold the brake pedal.
4. Turn the ignition switch to the OFF position.
5. Turn the ignition switch to the RUN position three times, ending in the RUN position. Do not wait more than two minutes between each key cycle.
6. When the message center displays "TRAIN LEFT FRONT TIRE," place the magnet on the valve stem

of the LF tire pressure sensor. The horn will sound briefly to indicate that the tire pressure sensor has been recognized by the TPMS module.

7. Within two minutes after the horn sounds, place the magnet on the valve stem of the RF tire pressure sensor.

**NOTE:** If the TPMS module does not recognize any one of the five tire pressure sensors during the tire training procedure, the horn will sound twice and the message center will display "TIRE TRAINING MODE INCOMPLETE" and the procedure must be repeated.

8. Repeat Step 7 for the RR, LR and spare tire.

When the tire training procedure is complete, the horn will sound twice and the message center will display "TIRE TRAINING MODE COMPLETE."

### 2006-2011 (2005 Escape, Edge and Mariner)

TPMS was standard for the 2007 model year. 2007-2009 models have banded sensors, while most 2010-2011 models have sensors mounted behind the valve stem.

If the vehicle has been stationary for more than 30 minutes, the sensors will go into a "sleep mode" to conserve battery power. It will be necessary to wake them up so they will transmit the latest tire pressure information to the Smart Junction Box (SJB).

### Activation

1. Turn the ignition switch to the ON position.
2. Position the TPMS tool against the LF tire sidewall, 180 degrees from the tire valve stem. The TPMS tool must remain in place 180 degrees from the valve stem for 2007-2009 models with banded sensors and directly below the valve stem on the sidewall for 2010-2011 models with the valve stem mounted TPMS sensors.
3. **NOTE:** The TPMS tool will provide feedback in the form of a flashing green light and a beep sound for each successful response from a tire pressure sensor. Press the test button on the TPMS tool to activate the sensor.

Activate the sensor at least two times.

4. Repeat Steps 2 and 3 for the remaining tires.

### Relearn

1. Turn the ignition switch to the OFF position. Then, press and release the brake pedal.

2. Cycle the ignition switch from the OFF position to the RUN position three times, ending in the RUN position.

3. Press and release the brake pedal.

4. Turn the ignition switch to the OFF position.

5. Turn the ignition switch from the OFF to the RUN position three times, ending in the RUN position.

The horn will sound once and the indicator will flash if the training mode has been entered successfully. If equipped, the message center will display "TRAIN LF TIRE."

6. It may take up to six seconds to activate a tire pressure sensor.

Press and release the test button on the TPMS tool. The horn will sound briefly to indicate that the tire pressure sensor has been recognized by the vehicle.

7. Within two minutes of the horn sounding, place the TPMS tool on the correct position for the sensor and release the test button to train the right front tire pressure sensor.

8. Do not wait more than two minutes between training each sensor or the Smart Junction Box (SJB) will time out and the entire procedure must be repeated. Repeat Step 7 for the right rear and then left rear.

The procedure is completed after the last tire has been trained. When the training procedure is complete, the message center (if equipped) will display "TIRE TRAINING COMPLETE."

For vehicles not equipped with a message center, successful completion of the training procedure will be verified by turning the ignition switch to the OFF position without the horn sounding. If the horn sounds twice when the switch is turned to the OFF position, the training procedure was not successful. ■

