

BEST PRACTICES



**MOTORIST
ASSURANCE
PROGRAM**
STANDARDS FOR AUTOMOTIVE REPAIR



Tire Pressure Monitoring System (TPMS) Services

A. Safety/Environmental

All persons working in or around a shop environment and/or performing automotive repair or maintenance services must comply with all applicable environmental, health and safety laws and regulations, company policy and accepted safe work practices. Always use personal protective equipment and engineering controls appropriate to the task. Follow all instructions and safe operating procedures when utilizing any tools or equipment.

- The FCC authorizes and licenses devices, transmitters and facilities that generate RF radiation. Refer to The Federal Code Of Regulation (CFR) FCC Part 15 for complete information.
- Each TPM sensor contains a battery that should be disposed/recycled properly.
- Discarded sensors must be kept away from the service area to minimize RF interference with active TPMS sensors.
- The disposal process may require full hazardous waste disposal/recycling chain of custody documentation.

B. Education/Training

- Identify TPM system type:
 - Direct, Indirect, Hybrid
- Indicator light diagnosis (MIL vs. Telltale)
- Identifying sensors and service kits by:
 - Clamp-in, Rubber Snap-in, Banded
 - OE and Aftermarket
 - Technologies (Direct Replacement, Programmable, and Multi-Application)
- Tire de-mounting/mounting procedures to avoid sensor damage
- Sensor and service kit installation procedures
- Visual component inspection
- Sensor condition inspection
- TPMS tools and Equipment
 - TPMS system diagnosis and troubleshooting
 - TPMS sensor activation, programming and vehicle relearn procedures
- Federal requirements/industry standards and motorist safety benefits

C. Tools/Equipment

1) Hand Tools:

- Valve core, stem, washer and grommet removal/re-seating tools
- in.lb./ N.m. Torque tools for:
 - Stem to sensor fastener
 - Valve stem nut
 - Valve core

2) Diagnostic Tool(s)/Accessory Options include:

- **Activation-only Tools** - As the name implies, this type of TPMS service tool activates the TPMS sensors. In most cases, the activation tool will also decode sensor output and provide critical information such as sensor ID and pressure; and whether or not it is the proper sensor for the vehicle application.
- **Diagnostic Scan Tools** – (OE and/or Aftermarket) Scan tools communicate to the vehicle's control module(s) via the OBDII connection and can complete the TPMS ID writing process, however in most cases, an activation tool is also required to accomplish this task.
- **Activation/Diagnostic Combination Tools** – Offer features of both and are an efficient way of servicing TPMS since the same tool can test for sensor fit and function, diagnose system problems and complete the relearn step.
- **Accessories** - Including data cables, cradle, pad or other holding device to enable or provide a method of programming.

IMPORTANT: Perform software updates on all electronic diagnostic tools regularly.

D. Pre-Service Inspection

(Includes spare tire and loose tire/wheel assemblies)

- Instrument panel - proper operation of all TPMS dashboard and information center indicators.



After start-up, a **solid light** is a low air pressure indicator

After start-up, a **flashing light** is a Malfunction Indicator Lamp

- Visual (*at-wheel*) Inspection – Identify potential concerns such as corrosion, damage, dry-rot, missing components, etc. before performing any tire/wheel service on the vehicle.
- Test the operation of the sensors prior to performing any tire/wheel service on the vehicle.
- Process (*inspection/diagnosis/repairing*) - “Technician focused”

E. Vehicle Service

- Identify TPM system type and proper service procedures
- Identify component mounting type and proper service procedures for:
 - Clamp-in, Rubber Snap-in, Banded sensors
- Deflate tire(s) by removing valve core and discard the old valve core
- If clamp-in sensors, remove attaching hardware and allow sensor to drop into wheel
- When de-mounting tire, position TPMS assembly to avoid damage by de-mount process
- Inspect TPMS sensor for listed Motorist Assurance Program (MAP) **e-UICS** conditions
- If reusing sensor, install applicable service kit/sealing components
- If replacing sensor, ensure correct application before mounting tire
- Torque all components to proper specifications
- When mounting tire, position TPMS assembly to avoid damage by mounting process
- Inflate tires to DOT placard cold inflation specification(s)
- Perform OEM relearn procedures
 - Test remote key fob for frequency output and battery life if the vehicle requires fob to complete relearn process.
 - Relearn may need to be performed on vehicle if one or more of the following have taken place:
Tire rotation, tire pressure adjustment, wheel change, tire change, service kit replacement, or sensor replacement.
- Confirm relearn procedure was successful according to OEM procedure.

F. Customer Service

- NO Acronyms – simplify the process for the customer so acronyms are not used during the educating or informing process, i.e. (TPMS should be called Tire Pressure Monitoring System.)
- Inform customer that their vehicle is equipped with a Tire Pressure Monitoring System
- Offer Motorist Assurance Program (MAP) Information Bulletin explaining Tire Pressure Monitoring Systems
- Educate regarding the consequences of using tire puncture sealants with Tire Pressure Monitoring Systems
- Advise that Tire Pressure Monitoring System sensors contain batteries and that the batteries will eventually fail
- Inform consumer of any non-functioning/malfunctioning Tire Pressure Monitoring System component or other Tire Pressure Monitoring System warning indicators prior to ANY type of vehicle service.

FAQs

- *What does the TPMS dashboard light/warning indicate?*

There are two commonly found lights on the dashboard indicating a TPMS concern:

- After starting a vehicle, a TPMS icon will illuminate for approximately a few seconds. If the light stays on (solid), it indicates that one or more of the tires on the vehicle (possibly the spare tire) has an inflation pressure at least 25% below as shown on the vehicle's driver door placard.
- If the light flashes continuously (for at least 60 - 90 seconds), it indicates a TPMS system malfunction. A TPMS system malfunction could be caused by a number of concerns and further diagnosis is required.

- *Why must a relearn procedure be performed?*

A relearn allows the vehicle to see the ID of the sensors in each wheel and on some applications, the wheel's location. Completing the relearn procedure clears TPMS diagnostic fault codes and allows the vehicle's TPMS to function properly.

- *Why should a Service Kit(s) be installed?*

Valve sealing components are not designed to be reused if they are removed. Additionally, over time, valve sealing components wear, crack, break or corrode due to climate, road elements and driving conditions, potentially causing air loss or system malfunction.

- *What if the TPMS sensor or valve stem breaks while servicing the vehicle?*

Federal TPMS regulation requirements state that, if you knowingly disable a functioning TPMS system, you must ensure it is restored to proper working order before the vehicle leaves your repair facility.

- *Can I use ANY 315 MHz sensor on a 315 MHz vehicle?*

NO. Refer to a TPMS data guide for accurate part numbers and replacement procedures.

- *Do spare tires have TPMS Sensors?*

Some vehicles do have sensors in their spare tires. Refer to your TPMS data guide for accurate information. Some TPMS scan tools contain this vehicle specific information in their data set.

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