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## // Tire Pressure Monitoring System (TPMS) - Common Questions

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### 1. What is a Tire Pressure Monitoring System (TPMS)?

TPMS, Tire Pressure Monitoring System is an electronic system to monitor air pressure inside a tire.

### 2. Why is TPMS necessary?

The U.S. government, through the National Highway Traffic Safety Administration, requires that all passenger cars, light trucks and vans (Gross weight less than 10,000 pounds) be equipped with a TPMS starting in model year 2008. Due to a phase-in of the requirements, 20 percent of model year 2006 and 70 percent of model year 2007 vehicles are equipped with TPMS.

### 3. How Does TPMS Work?

There are two different types of systems being used today: Direct TPMS and Indirect TPMS. Direct TPMS uses a sensor that's mounted in the wheel and measures air pressure in each tire. When air pressure drops 25% below the manufacturer's recommended level, the sensor transmits that information to your car's computer system and triggers your dashboard indicator light.

Indirect TPMS works with your car's Antilock Braking Systems (ABS) wheel speed sensors. If a tire's pressure is low it will roll at a different wheel speed than the other tires. This information is detected by your car's computer system, which triggers the dashboard indicator light.

### 4. What are the benefits of TPMS?

TPMS notifies you when your vehicle's tire pressure is low or is going flat. By helping you maintain proper tire pressure, TPMS can increase your safety on the road by improving your vehicle's handling, decreasing tire wear, reducing braking distance and bettering fuel economy.

### 5. What does the TPMS warning lamp look like?

There are two different low tire pressure warning indicators allowed by the federal standard. One icon is the cross-section of a tire with an exclamation mark inside. The other is a top view of a car with all 4 tires exposed.



### 6. Is my vehicle equipped with TPMS?

Your vehicle has TPMS if the "low tire pressure" warning indicator/light appears on your dash when the key is turned to the "on" position.

### 7. What does it mean if the TPMS warning lamp illuminates?

When the TPMS warning lamp on the instrument panel illuminates while driving, it means that the system has detected at least one tire with a pressure below the accepted minimum psi for the vehicle. The tires should be inspected and the tire pressure checked as soon as possible. The lamp will extinguish after the tires are properly inflated.

### 8. What does it mean if the warning lamp goes on and off?

On cold mornings, the warning lamp may illuminate for a short period of time and then extinguish. This type of warning lamp response is likely caused by marginally low tire pressure that dips below the warning threshold over night but rises to an acceptable level as the tires heat up through vehicle operation or an increase in ambient temperature. The tires should be inspected and the tire pressure should be checked. The lamp should not illuminate when the tires are properly inflated.

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### 9. What does it mean if the warning lamp flashes on and off and then remains illuminated?

All TPMS installed on 2008 model year vehicles and beyond are required to detect and warn the driver when the system is not functioning properly (malfunction indicator). For some TPMS, a system malfunction is indicated by a flashing of the low tire pressure warning lamp for a period 60 to 90 seconds with the warning lamp remaining illuminated after the flash sequence. The flashing sequence followed by continuous illumination of the warning lamp will repeat at each subsequent vehicle start-up until the malfunction is corrected. A vehicle dealer should be contacted for a system inspection.

### 10. What should I do if my warning indicator comes on?

Check the air pressure in your tires and inflate any tire that is low according to the vehicle manufacturer's recommendation as displayed on the tire placard on the driver's side door. When the tire is at the appropriate pressure, the indicator light should go off as you drive. If not, seek resolution from a trained technician.

### 11. Why Does Tire Maintenance With Direct TPMS Cost More?

Direct TPMS equipped tires cost slightly more to maintain than non-equipped tires because proper care requires extra parts and labor. The TPMS service kit, which includes the nickel plated valve core, cap, nut and o-ring (seal) and/or stem must always be replaced per industry's recommendation when a tire is dismantled for service, replaced and/or when a sensor is removed from the wheel. A special TPMS tool and additional time are also needed to check and reset the sensor system. TPMS service kits are inexpensive and will likely save an early sensor failure due to valve failure.

### 12. Why is it important to install a TPMS Service Kit when the Sensor is removed from the rim?

The components that provide a seal have a "memory" of where it was placed and the amount of clamping force. When the old seal is taken off the rim, it is deformed and will not properly reseal when retightened. The installation of a "New" service kit will provide the sealing components for each applicable sensor (clamp-in or snap-in).

### 13. What is the approximate cost to the consumer to service TPMS?

The service kit costs \$5-\$10 per wheel on most vehicles. A special TPMS tool and additional time are also needed to check and reset the sensor system. In the event that a pressure sensor need to be replaced, the cost ranges from \$50-\$250 each depending on vehicle type.

### 14. How long do batteries last in sensors?

Typically these last a very long time. Technology has improved since the early versions so that signals are cycled and inactivity allows the battery to sleep. Current versions should last 7 to 10 years provided they are not exposed to corrosive environments or severe abuse.

### 15. What should the torque value be set at?

Every manufacturer has a specified torque specification for the components of the metal valve service kits. Follow the specification that is specific to the service kits being sourced. Today, most all service kits provide those specs on the individual bag these kits are packaged in. A full set of adjustable service tools should be used in the various components including the base nut and the valve core!

### 16. What is the leading cause of TPMS sensor failure?

Corrosion! Metal stems can be damaged by road salts, moisture, missing valve caps or galvanic corrosion. TPMS service kits are made with dissimilar metals. It is especially important to utilize all the items in the kit including the valve cap! Always follow the exact torque specifications for the components being installed. Never reuse any of the old seals or metal parts when servicing TPMS valves. Many OE manufacturers have converted over to the rubber stem as part of the TPMS system; these too require replacement when deterioration has been detected.