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WT13-006a

Reference:

ITB13-039a

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Date:

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LOW TIRE PRESSURE WARNING SYSTEM BULLETINS SUMMARY

This bulletin has been amended. Changes were made to several sections.
Please discard previous versions of this bulletin.

APPLIED VEHICLES: All vehicles equipped with:
Tire Pressure Monitor System (TPMS)
or
Low Tire Pressure Warning System (LTPWS)

SERVICE INFORMATION

This bulletin has compiled Tire Pressure Monitor System (TPMS) and Low Tire Pressure Warning System (LTPWS) information for:

- Basic diagnosing of TPMS/LTPWS systems
- Radio frequency interference causing a "No Data" (C1708, C1709, C1710, C1711) condition
- Sensor leaks
- Moving TPMS/LTPWS wheel assemblies from one vehicle to another and TPMS/LTPWS sensor registration
- Air pressure changes with altitude and ambient temperatures
- Aftermarket tire sealers
- Aftermarket wheels
- Inflating/deflating tires with TPMS/LTPWS sensors

Infiniti Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Infiniti dealer to determine if this applies to your vehicle.

BASIC DIAGNOSING OF TPMS/LTPWS SYSTEMS

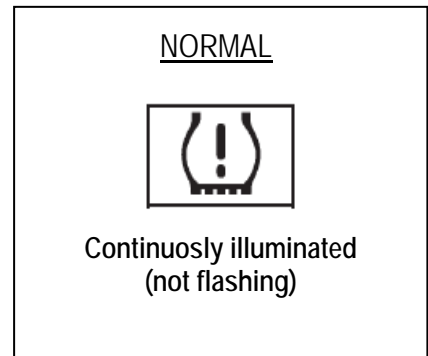
The TPMS/LTPWS system can be diagnosed by turning the ignition to the "OFF" and then to the "ON" position (engine is not required to be running).

If the TPMS/LTPWS warning light is illuminated (continuously or flashing)

Normal Operation

If the TPMS/LTPWS warning light is continuously illuminated (not flashing), the TPMS/LTPWS is operating normally and has detected low tire pressure in one of the tires.

- Leave the ignition in the "ON" position* (engine is not required to be running) and set the tire pressure to the recommended pressure shown on the vehicle's tire pressure placard.
- Leaving the ignition in the ON position may allow the TPMS/LTPWS to detect the corrected tire pressure more quickly on 2009 and newer models (WITHOUT having to drive the vehicle).



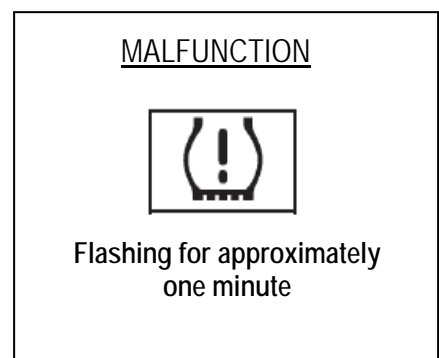
NOTE:

- Normal tire pressure maintenance is not covered under warranty.
- Some 2011 and newer models will display an alert in the Vehicle information display near the speedometer. The alert will read "Check Tire Pressure", or similar, and will accompany the illuminated TPMS/LTPWS light.



Malfunction Present

If the TPMS/LTPWS warning light is flashing for approximately one minute, there is a TPMS/LTPWS system malfunction. Some models will also display a message in the meter indicating a malfunction. Check the DTC and refer to the Service Manual for repair instructions.



RADIO FREQUENCY INTERFERENCE CAUSING A “NO DATA” (C1708, C1709, C1710, C1711) CONDITION

Radio Frequency (RF) interference can cause a No Data condition and may be caused by any device that is transmitting RF on the same or similar frequency that the TPMS/LTPWS sensors are on and is not covered under warranty.

Cell phone chargers (Figure 1), aftermarket DVD players, etc. should be removed from the vehicle first and then the vehicle retested before further diagnostic is performed.



Figure 1

SENSOR LEAKS

Sensor leaks can be caused by irregularities of the wheel TPMS/LTPWS sensor sealing surface or damaged TPMS/LTPWS sensor seals.

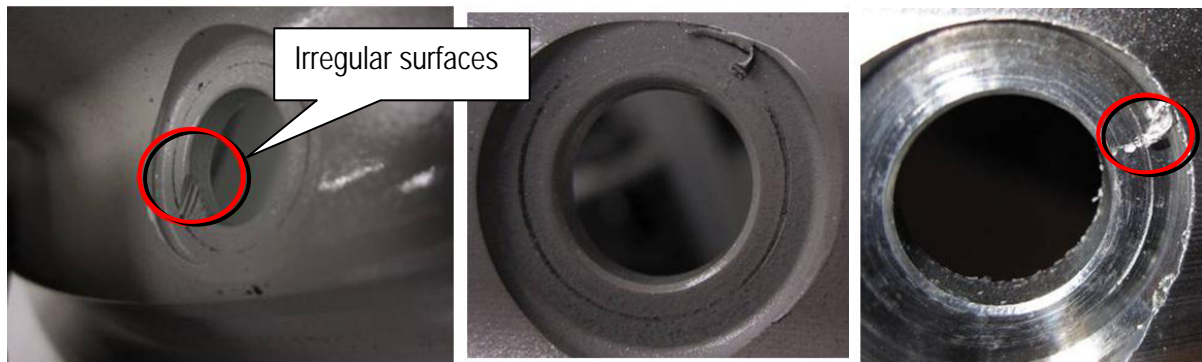
Always confirm suspected leaks with a soapy water solution.



Figure 2

Irregularities of TPMS/LTPWS Sensor Sealing Surface

Irregular sealing surfaces, contamination oil, etc., may allow an air leak to form between the wheel and TPMS/LTPWS sensors.



Figures 3-5

TPMS/LTPWS Seals

Do Not replace the TPMS/LTPWS sensor assembly for a leak. Replace the seal or repair the wheel as needed.

NOTE: Figure 6 is for reference only and may appear to be different depending on the model and year that is being serviced.

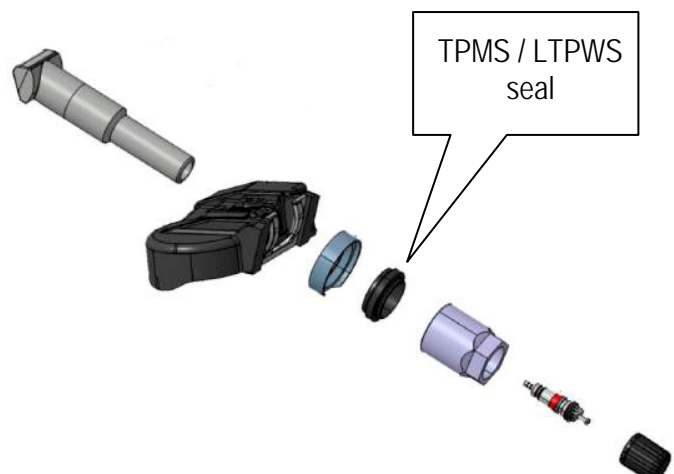


Figure 6

MOVING TPMS/LTPWS WHEEL ASSEMBLIES FROM ONE VEHICLE TO ANOTHER AND TPMS/LTPWS SENSOR REGISTRATION

Moving TPMS/LTPWS Wheel Assemblies

TPMS/LTPWS sensors can have different part numbers from model to model and may not operate correctly or operate at all.

CAUTION:

- New style and old style TPMS components are not compatible and cannot be interchanged.
- Swapping of new style and old style components will cause the TPMS to stop operating correctly.
- If further confirmation of the TPMS sensor part number is required, review the part number of the originally installed equipment before replacement.

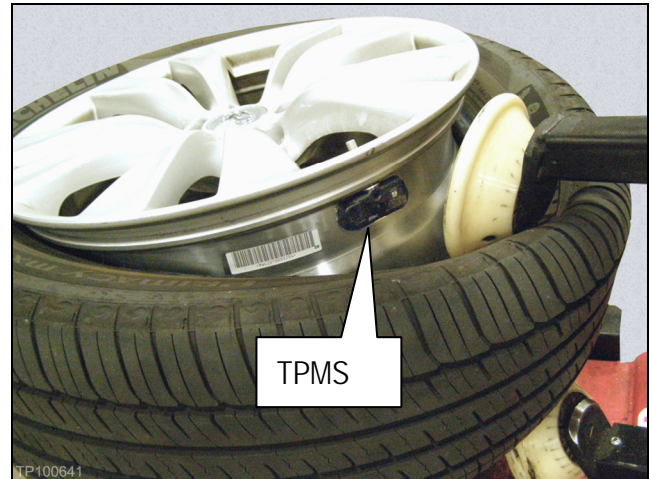


Figure 7

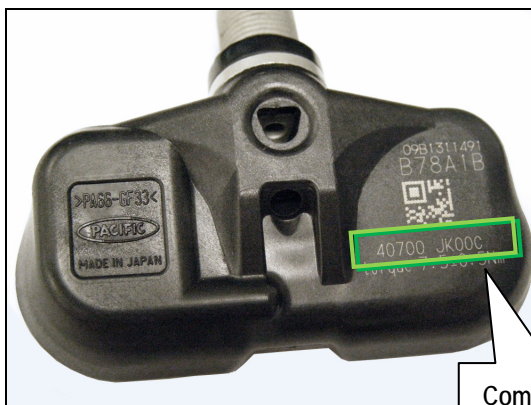


Figure 8



Figure 9

To confirm the latest part numbers, always consult the appropriate parts catalog when replacing or exchanging TPMS sensors, receivers, or control modules.

TPMS/LTPWS Sensors Must Be Registered To Each Vehicle Every Time the Wheels Are Swapped

TPMS/LTPWS wheel sensors must be registered each time the wheels are rotated, swapped or replaced so that the sensors operate correctly and send the correct tire pressure from the new wheel location.

If tires are rotated or service is required on a vehicle's Tire Pressure Monitor System/Low Tire Pressure Warning System (TPMS/LTPWS), the Signal Tech II (special tool J-50190), Tire Pressure Sensor Activation Tool J-45295, or Transmitter Activation tool (J-45295-A) can be used to register TPMS/LTPWS sensors.

NOTE: Failure to update Signal Tech II may lead to misdiagnosis of vehicles.

- The latest software is available on the CONSULT III PC at: ASIST > Specialty Tools > Signal Tech II.
- If you should encounter problems with updating, contact Techmate at 1-800-662-2001.
- Future updates will be released as needed. Check ASIST frequently for this information.

NOTE:

- Refer to the appropriate chapter and section of the Electronic Service Manual (ESM) for the model specific procedure to register and diagnose TPMS/LTPWS systems.
- Tire Pressure Sensor Activation Tool **J-45295** will not work on some vehicles.

Instead use:

- Transmitter Activation tool (J-45295-A) with C-III plus
or
- Signal Tech II (J-50190) with C-III plus



AIR PRESSURE CHANGES WITH ALTITUDE AND AMBIENT TEMPERATURES

The air pressure inside a tire can change due to several factors, such as:

- Seasonal temperature change
- Tire temperature change due to driving
- Natural pressure loss over time

Compensate for the above temperature factors when adjusting and setting tire pressure.

Each vehicle is equipped from the factory with a TIRE AND LOADING INFORMATION label.

Example

TIRE AND LOADING INFORMATION PNEU ET INFORMATION DE CHARGEMENT				
SEATING CAPACITY NOMBRE DE PLACES	TOTAL TOTAL	FRONT AVANT	REAR ARRIERE	
THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED LE POIDS COMBINÉ D'OCCUPANTS ET DE CARGAISON NE DEVRAIT JAMAIS EXCÉDER		842 lb 382 lb	OR OU	450 kg 470 kg
TIRE PNEU	ORIGINAL TIRE SIZE TAILLE DU PNEU D'ORIGINE	COLD TIRE PRESSURE PRESSION DE GONFLAGE À FROID	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. POUR D'AUTRES DÉTAILS, SE REPORTER AU MANUEL DU CONDUCTEUR.	
FRONT AVANT	xxxx/xxxx	xxx kPa (xx psi)		
REAR ARRIERE	xxxx/xxxx	xxx kPa (xx psi)		
SPARE TIRE ROUE DE SECOURS	xxxx/xxxx	xxx kPa (xx psi)		

TP080074

Figure 10

This label lists the COLD tire pressure setting for the original tires on the specific vehicle.

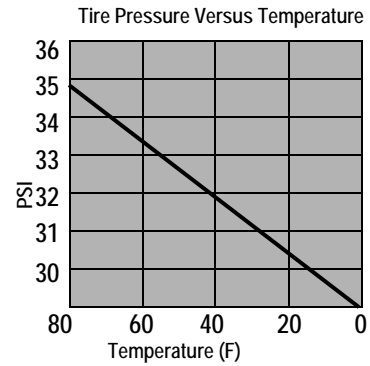
NOTE: Tires are considered COLD after the vehicle has been parked for 3 or more hours, or driven less than 1 mile at moderate speeds.

When setting / adjusting tire pressure, make sure to use an accurate tire pressure gauge.

Use the following information for reference:

Temperature

- Tire pressure changes approximately **0.8 psi for every 10°F of temperature change**. As temperature decreases, pressure decreases.
- Tire pressure may change 3 - 5 psi between a Cold reading and a reading taken just after the vehicle has been driven for several miles.
- Seasonal temperature change can result in tire pressure that is low enough to turn on the Low Tire Pressure Warning Light.



Example 1 – Seasonal Temperature Change

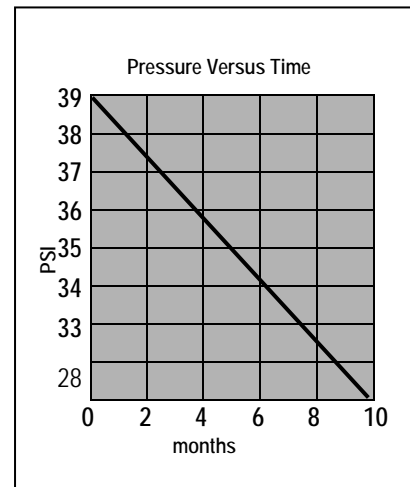
- The temperature of the vehicle is 70°F after sitting in the shop.
- Ambient temperature outside the shop is 30°F or will soon fall to 30°F due to seasonal change.
- Recommended pressure on the TIRE AND LOADING INFORMATION label is 35 psi.
- The tire pressure should be compensated an additional +3 psi and adjusted to 38 psi to avoid dropping below the label value when the vehicle experiences cooler ambient air temperature.
- Compensation should also be used in the PDI process as needed.

Example 2 – WARM Tires

- A vehicle arrives to the dealer after being driven across town.
- The WARM tire pressure reading is 32 psi.
- Recommended COLD tire pressure on the TIRE AND LOADING INFORMATION label is 35 psi.
- The tire pressure should be compensated an additional +3 psi and adjusted to 38 psi to avoid dropping below the label value when the tires cool.

Natural Tire Pressure Loss Over Time

- Vehicle tire pressure can naturally decrease by approximately 1.0 - 1.5 psi per month. This will vary due to seasonal temperature change.
- After 6 to 8 months tire pressure may be low enough to turn ON the Low Tire Pressure Warning Light.

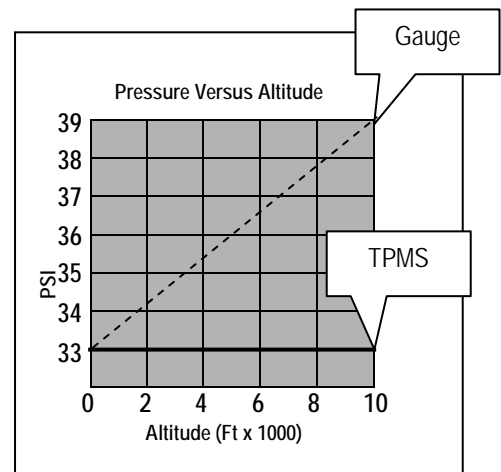


Graph 2 – Example

High Altitude

- At high altitude locations, a standard tire pressure gauge may show the tire pressure higher than the TPMS system. If the gauge reading is not accounted for, this could result in turning ON the Low Tire Pressure Warning Light.
- Standard tire pressure gauge readings increase about 1.0 psi for every 2,200 ft of altitude increase above sea level (up to 10,000 ft). See Graph 3.
- For example, if the TIRE AND LOADING INFORMATION label reads 33 psi, then at an elevation of 5,280 ft, the cold inflation pressure using a gauge should be increased 2.5 psi to 35.5 psi."

NOTE: In Graph 3, C-III, Signal Tech II, or the vehicle information display (if equipped) would show a tire pressure of 33 psi. If needed, use C-III or Signal Tech-II to confirm tire pressure.



Graph 3 - Example

NOTE:

- After correcting the tire pressure, the vehicle may need to be driven at speeds above 16 mph to activate the TPMS and turn off the low tire pressure warning light.
- If pressure compensation for temperature is used, the pressure should be re-checked and adjusted at a later time when the tires are cold.

AFTERMARKET TIRE SEALERS

We do not recommend use of aftermarket tire sealants and/or aerosol repair kits (refer to the vehicle's Owner's Manual).

- Some aftermarket tire sealers and/or aerosol repair kits may contain chemicals and propellants that can cause damage to TPMS/LTPWS sensors.

NOTE: Damage caused by use of aftermarket tire sealants contrary to recommendations in the vehicle Owner's Manual is not covered under the Infiniti New Vehicle Limited Warranty.

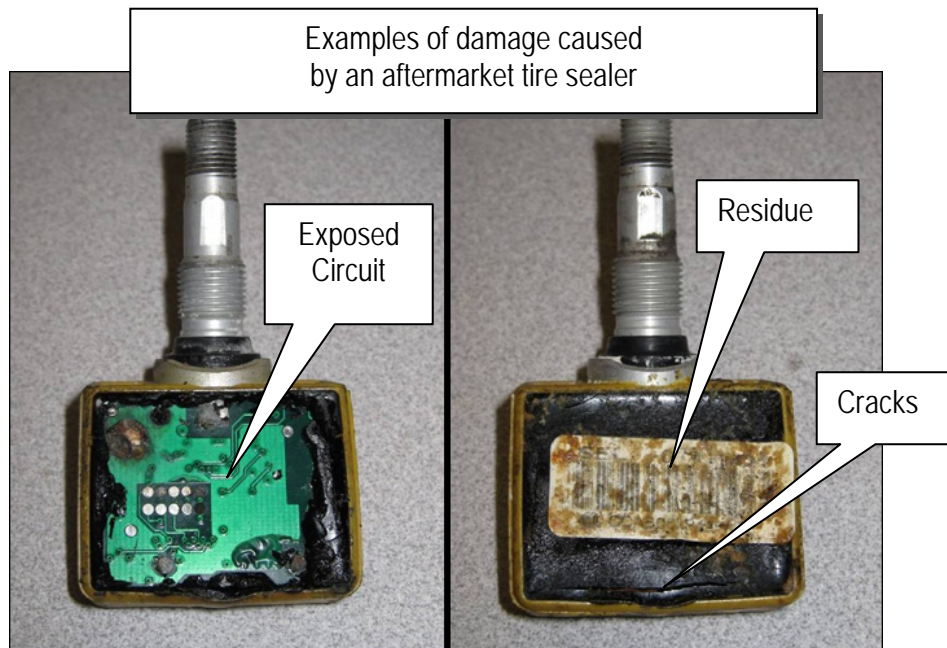


Figure 11

AFTERMARKET WHEELS

Aftermarket accessory wheels may also have the sensor stem in the incorrect orientation (Figure 12). This may cause the sensor to not transmit "data" when the wheel starts to rotate or may prevent the transmitted data from reaching the TPMS/LTPWS antenna.



Figure 12

INFLATING/DEFLATING TIRES WITH TPMS/LTPWS SENSORS

Filling Tires with Nitrogen

The TPMS/LTPWS sensors can be damaged if the sensors are at the 6 O'clock position (closest to the ground) when the tires are deflated.

- When filling the tires with nitrogen, the vehicle should either be raised off the ground on a lift, or the wheels individually removed from the vehicle to prevent damaging the TPMS/LTPWS wheel sensors.

IMPORTANT: The vehicle should be raised or individual wheels removed to prevent the rims from contacting the ground when deflated.

- Improper use of tire inflator tools can break the stem of a Tire Pressure Monitor System (TPMS) sensor.
- The type of stem breakage shown in Figure 13 is not considered a warrantable repair.

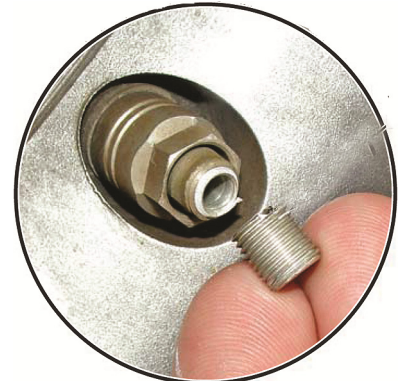


Figure 13

Please refer to the examples of recommended and not recommended tire pressure filling tools, below.

Recommended Tire Inflating Tools



Shallow well air chucks



Air chucks with flexible hose (no extensions)

Not Recommended Tire Inflating Tools



Long heavy hose with Lock-on air chuck or wheel at 6 O'clock position



Deep well or dual head air chucks



Air chucks with handles or extensions