

# Technical Bulletin



Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
Passat, Passat Wagon, (A5) Jetta, (A5) Jetta Wagon, Rabbit/GTI, Eos	2006 - 2008	All	All	All	All

## Condition

Tire Pressure Monitoring System (TPMS), System Overview

44 07 05 Nov. 21, 2007 2010267, Supersedes T.B. Group 44 number 06-10 dated November 21, 2006 due to additional trouble shooting content.

## Technical Background

This technical bulletin / overview is designed to assist the technician in addition to the SSP, improve the understanding of the TPMS system, and to prevent repeat or unnecessary repairs.

## Production Solution

No production change required.

## Service

### BASIC COMPONENTS

Tire Pressure Monitoring Sensors:

- Mounted to valve stem of each individual wheel.
- Activated by centrifugal motion (wheel rotation) or by rapid pressure change.
- Wheel rotation of 25 km/h (16 mph) or above will start signal that includes tire pressure, tire temperature, tire acceleration and identification number.
- Even without tire rotation, a pressure increase or decrease will cause the sensor to send a signal.
- 315 MHz transmission frequency.

Antenna

- Central Locking and Anti-Theft Alarm System Antenna -R47- receives signals from tire pressure sensors.
- -R47-, located on the A-pillar, provides input to Comfort and Convenience Control Module -J393-, which is located behind the glove box.

# Technical Bulletin



## Tire Pressure Monitoring Control Module -J502-

- Is integrated in the Comfort and Convenience Control Module -J393-.
- Does not identify where sensors are, only collects information from sensors.
- Controls tire pressure warning lamp on instrument cluster.



Tip:

[There is no warning for pressure above the nominal.](#)

## Tire Pressure Warning Lamp -K230-

- Will illuminate in combination with warning message in the MFI when pressure is low.
- When tire pressure is 0.5 bar (7 psi) below nominal (0.4 bar / 6 psi for SW 391), Message in cluster reads "Tire Pressure Too Low" .
- Rapid loss of pressure of more than 0.2 bar (3 psi) per minute. Message in cluster reads "Low Tire".

## GENERAL SYSTEM FUNCTION DESCRIPTION

- As the tires turn, signals are sent from the sensors to the -R47- antenna. This antenna is connected to the Comfort and Convenience Control Module -J393-. The Tire Pressure Monitoring Control Module -J502- is integrated into -J393-.
- -J502- will determine if pressure in the tire is correct. If it is not correct, a yellow warning lamp will illuminate in the instrument cluster and a message will display in the Multi Function Indicator (no message in New Beetle and low line clusters).
- No signals are sent when the car is stationary, unless a rapid pressure loss occurs.



Tip:

[Adding pressure to a tire is not covered by warranty.](#)

## Tire Filling

- Check tire pressure using an accurate and reliable pressure gage.
- Tires must be filled when cold.
- Pressure displayed on the scan tool is delayed for up to 2 minutes while filling is completed.

# Technical Bulletin



## Adaptation

After replacing a sensor, the TPMS system must be re-learned by performing the following:

Vehicle must be parked for a minimum of 20 minutes (with ignition switched ON for SW 391, and Midtronics InCharge 940 (INC 940) battery charger/maintainer connected), before the TPMS system will go into a learn mode.

- Start and operate vehicle over 25 KM/h (16 mph) for at least 7 minutes.
- TPMS then recognizes sensor inputs.
- Warning light in cluster will go out.

## Guided Fault Finding Test Plans Available

- Measuring Value Blocks
- Coding the Tire Pressure Monitoring Control Module -J502-
- Checking adaptation values for specified pressures.
- Radio interference.
- CAN Bus malfunction

## Determining Sensor Location

Using VAS 5051/5052 diagnostic tool in Self Diagnosis, AW 65, MVB 16:

- Lower the pressure in one tire by 0.7 bar (10 psi).

The rapid pressure loss will trigger this sensor to send a signal which appears in MVB 16 within 2 minutes.

- Record the sensor ID and wheel location. Repeat for other wheels.
- If one wheel does not respond the sensor may not be recognized by the antenna. Move vehicle by ½ a tire revolution (180 degrees) and retest.
- No signal from one wheel (after re-test) indicates a faulty sensor.



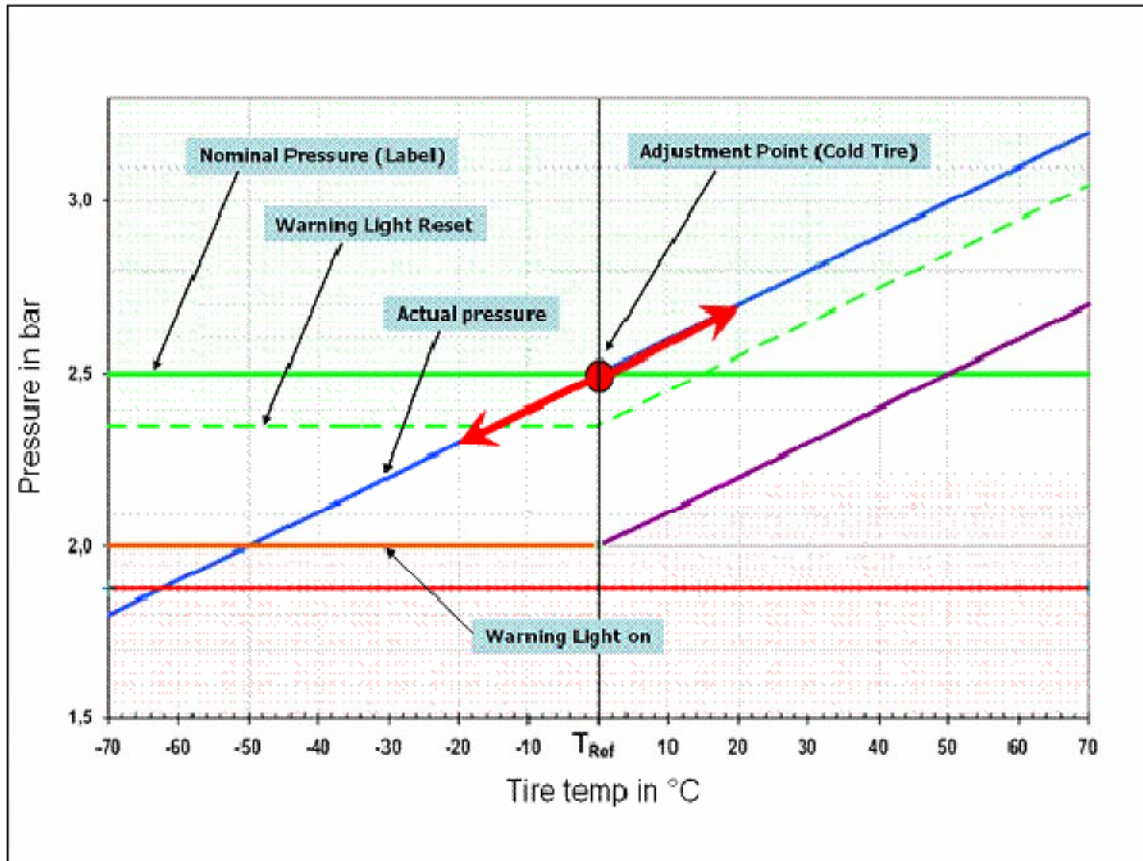
Tip:

All values in MVB 1 thru 12 are erased every time the ignition is switched OFF after driving. 'Not recognized' will be displayed in those MVB's until a new signal is received during regular operation.

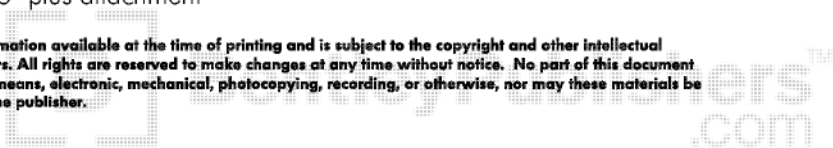
# Technical Bulletin



## Temperature Compensation



- The system measures the ambient temperature once a day and creates a median reference temperature ( $T_{Ref}$ ) from the last two weeks. This reference is the basis for the above diagram.
- As temperature goes up (to the right of  $T_{Ref}$ ), the nominal tire pressure has to be set accordingly. Example: Cold tire nominal of 2.5 bar has to be set to 2.7 bar, if the tire temperature is 20°C above  $T_{Ref}$ .
- The same applies to the warning light reset line. The light normally goes out, when the pressure gets within 0.15 bar (2.2PSI) of the nominal, here 2.35 bar. At 20°C above  $T_{Ref}$  however, it will take 2.6 bar, for the light to go out.
- It is always a good idea to overfill the tire generously (not to exceed max. tire pressure rating printed on tire) to ensure, that neither an incorrect gage, a warm tire, or a combination of both, prevent the light from going out.
- If the ambient temperature outside the workshop where the vehicle is operated is lower, add pressure to the nominal (see tire pressure label) to compensate. Add approximately 0.1bar per 10°C (1.5 PSI for every 20°F) difference. This also applies to warm tire vs. cold tire conditions.



# Technical Bulletin



## Troubleshooting

- Does the TPMS light blink (SW 420 and later) for 65 seconds when the car is started, before staying on solid?

NO – low pressure issue

YES – TPM system issue

## Light NOT blinking:

For highline cluster only – accompanied by Warning message:

- “Tire pressure low” – appears after a slow pressure loss in one or more tires
- “Low Tire” – appears after a rapid pressure loss.
- Solution – adjust pressure and/or repair/replace damaged tire



Tip:

Exception: Some (A5) Jetta's with ABS/ESP 4 digit coding such as 4738; if the warning light does not go out after a low pressure condition has been found and corrected, recode ABS/ESP using GFF.

## Light is blinking:

- Use GFF or check for DTC's (see flow chart attachment)

## Warranty

Information only.

## Required Parts and Tools

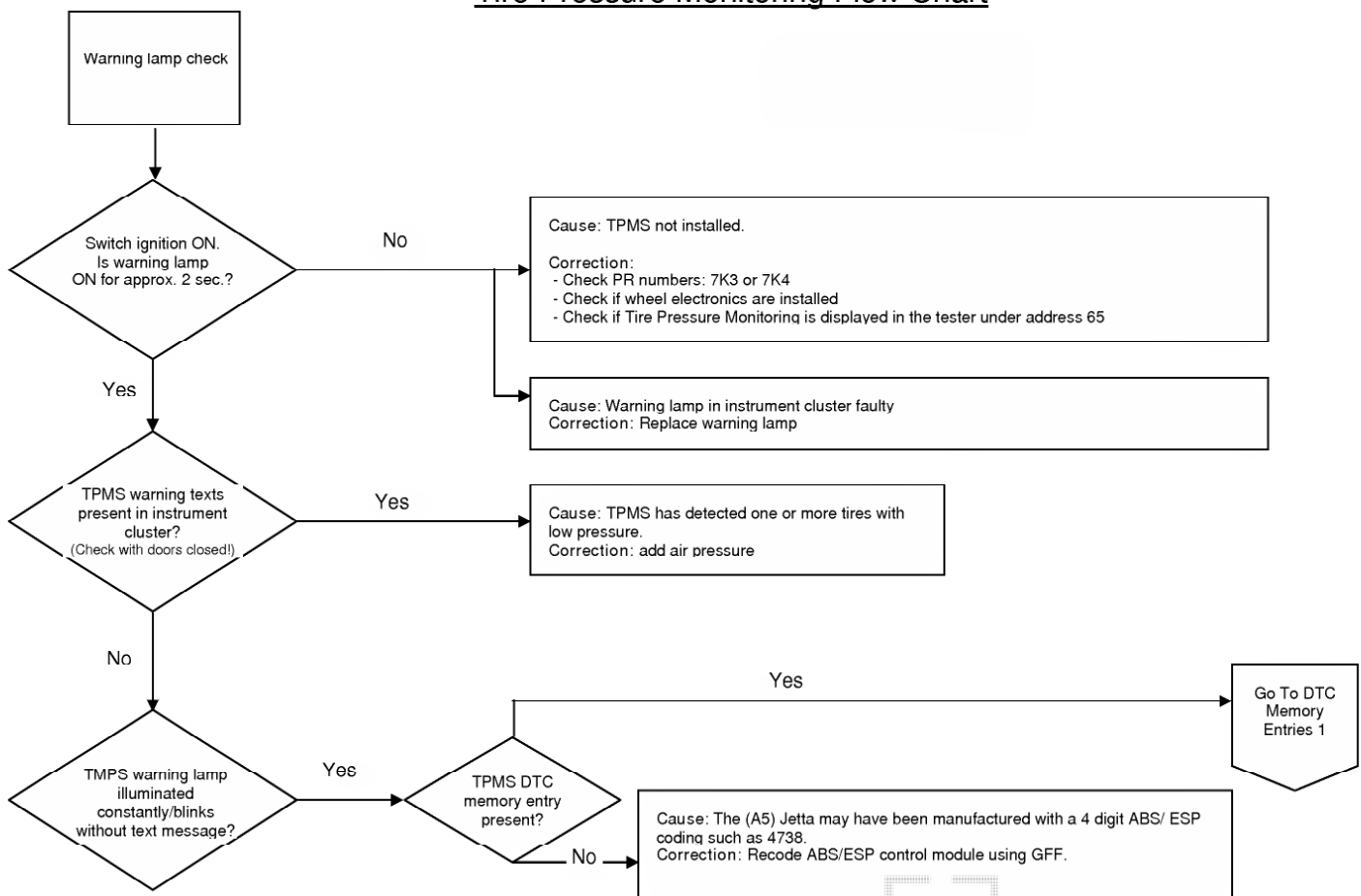
No Special Tools required.

No Special Parts required.

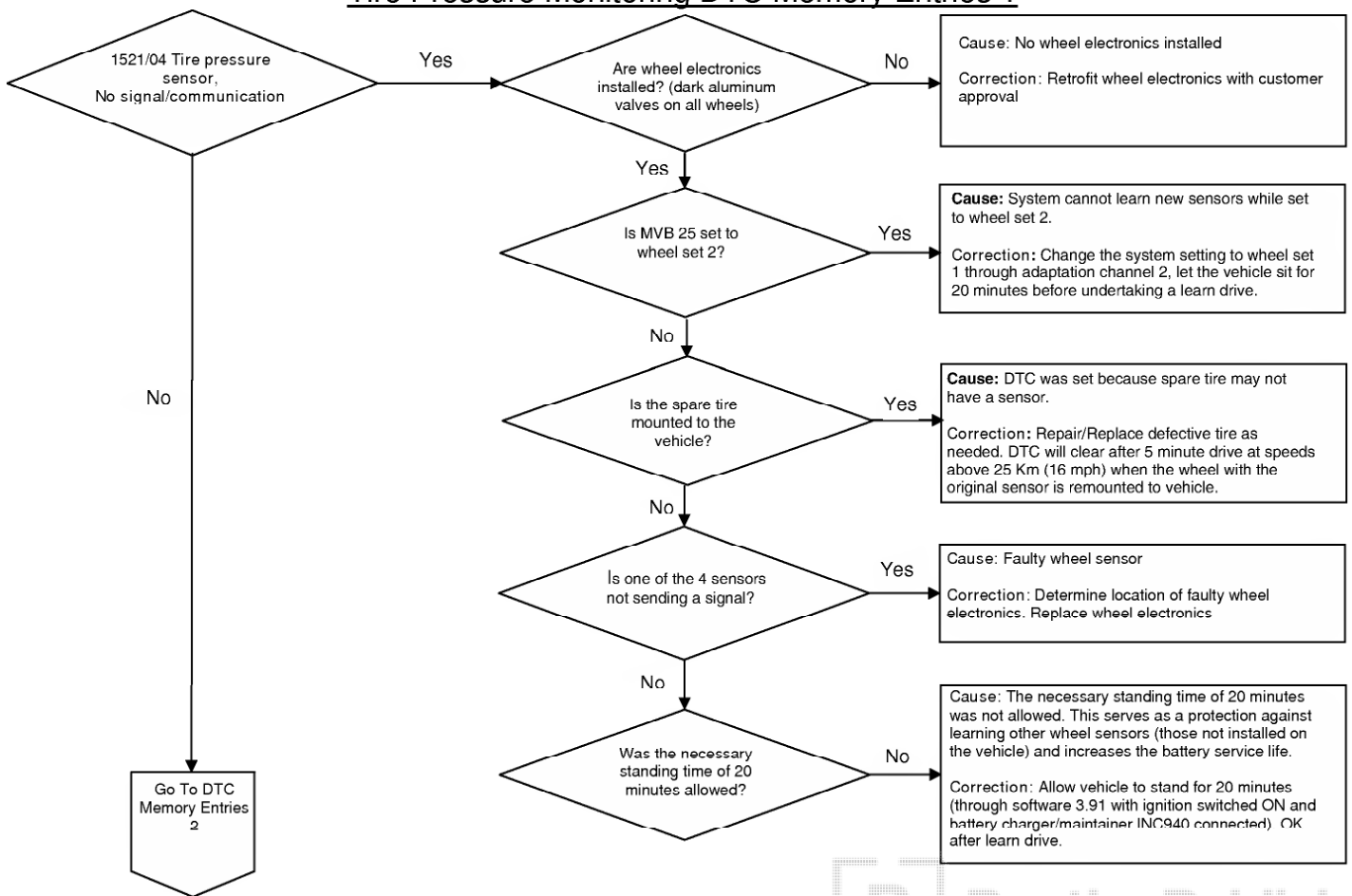
## Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.

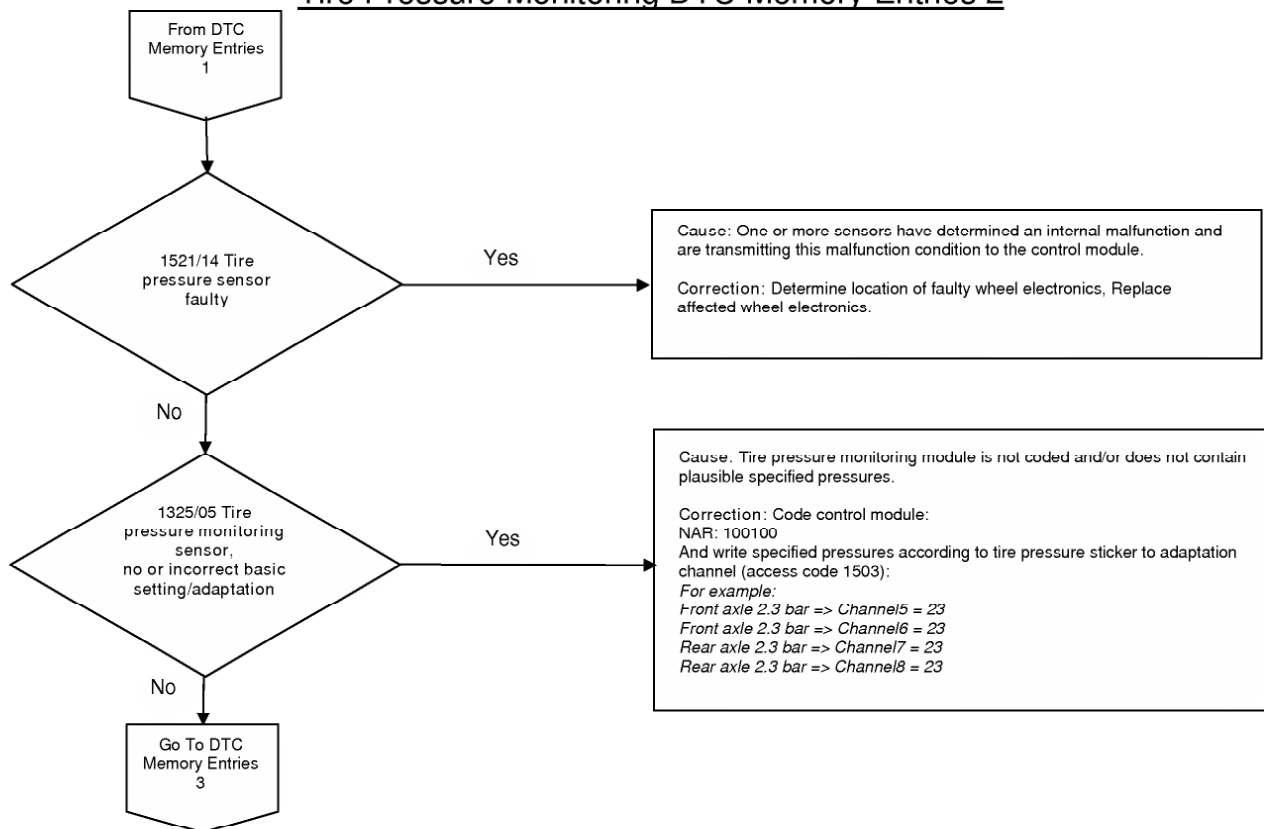
## Tire Pressure Monitoring Flow Chart



## Tire Pressure Monitoring DTC Memory Entries 1

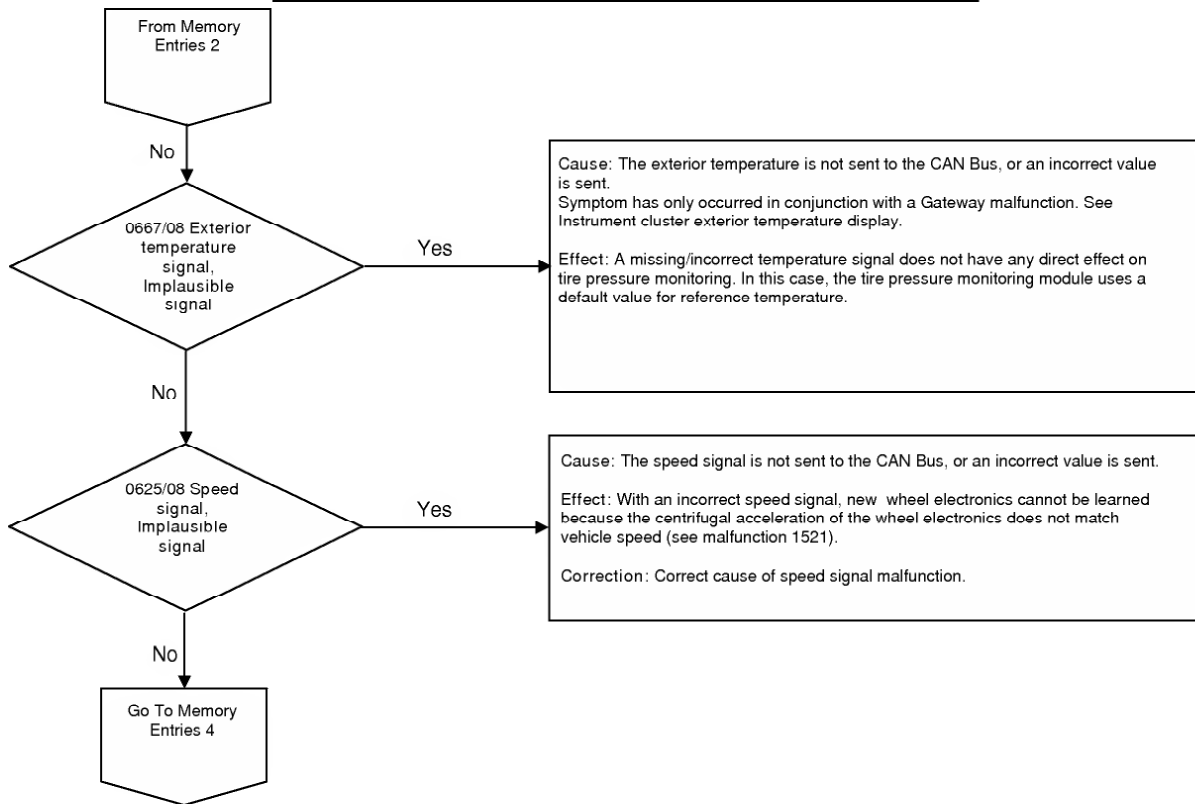


## Tire Pressure Monitoring DTC Memory Entries 2





### Tire Pressure Monitoring DTC Memory Entries 3



## Tire Pressure Monitoring DTC Memory Entries 4

