

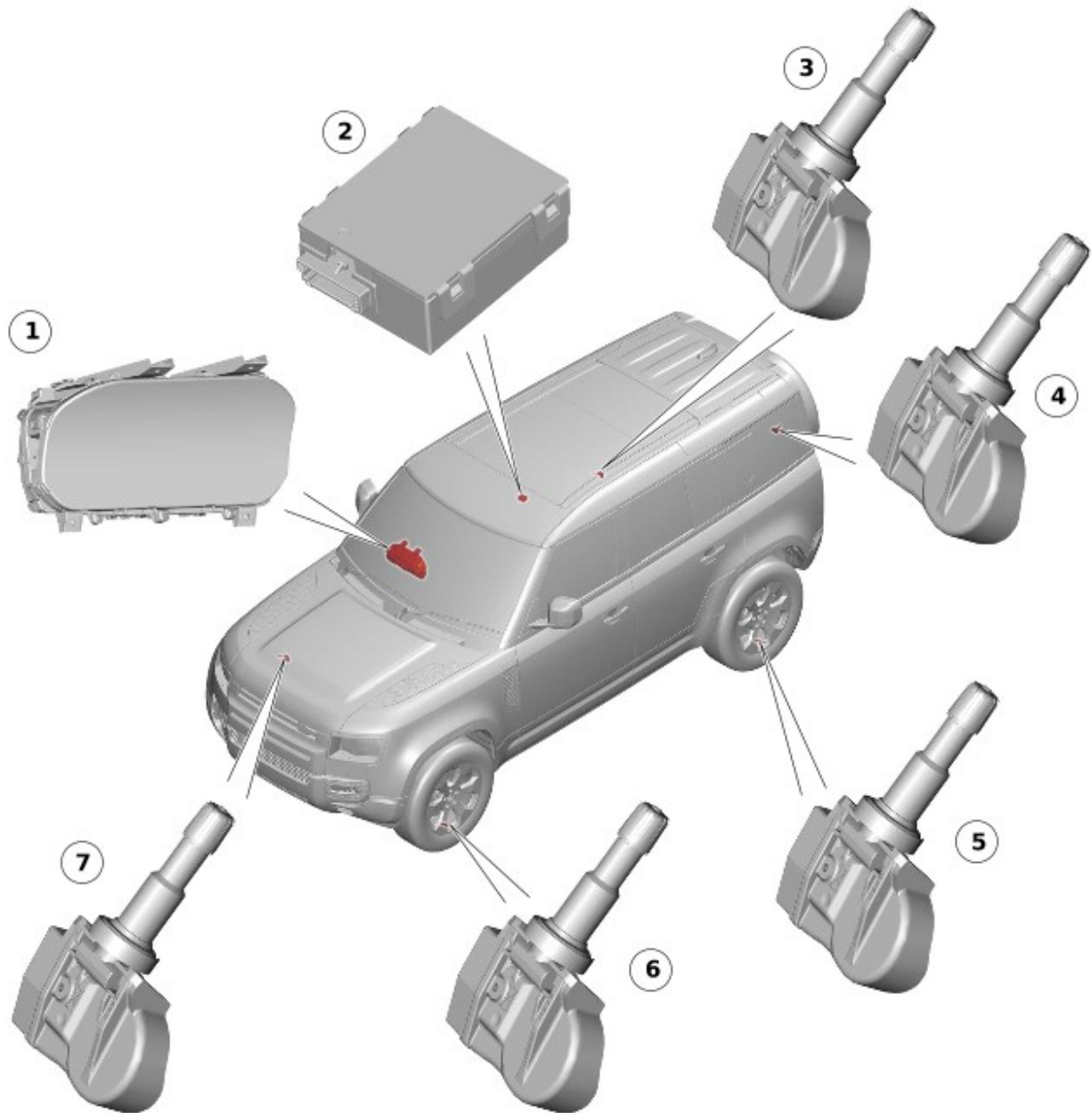
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WHEELS AND TIRES

TIRE PRESSURE MONITORING SYSTEM LOCSYNC

[G2341726]

COMPONENT LOCATION



E250043

ITEM	DESCRIPTION
1	Instrument Cluster (IC)
2	Tire Pressure Monitoring System Control Module (TPMSCM)
3	Tire pressure sensor - Rear right wheel

ITEM	DESCRIPTION
4	Tire pressure sensor - Spare wheel
5	Tire pressure sensor - Rear left wheel
6	Tire pressure sensor - Front left wheel
7	Tire pressure sensor - Front right wheel

OVERVIEW

The Tire Pressure Monitoring System (TPMS) measures the pressure in each of the tires on the vehicle. The TPMS issues warnings to the driver if any of the pressures deviate from those defined by local legislation.

For additional information, refer to: [Tire Pressure Monitoring System](#) (204-04 Wheels and Tires, Description and Operation).

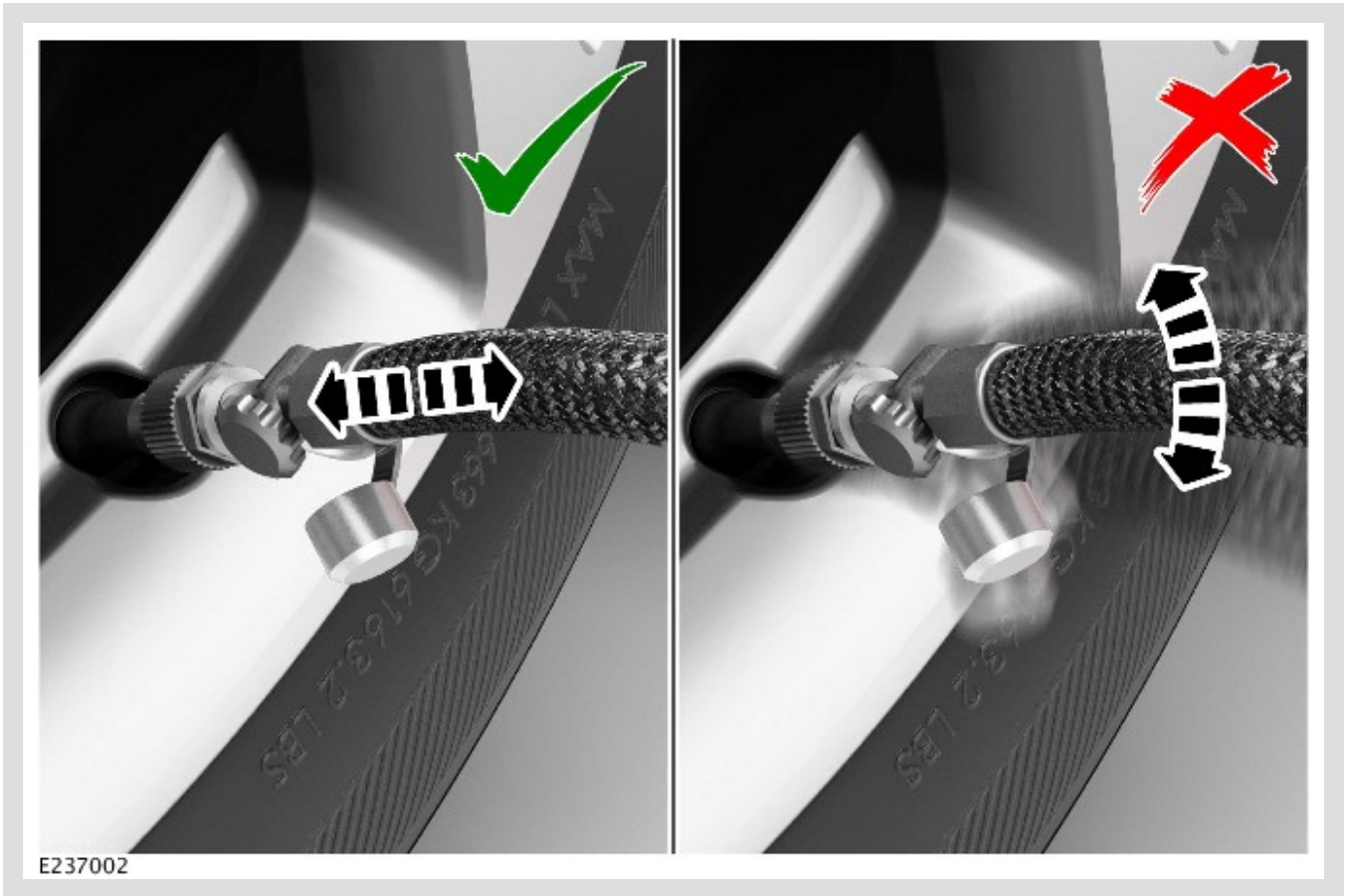
DESCRIPTION

TIRE PRESSURE MONITORING SYSTEM VALVE DAMAGE

NOTES:

- The majority of Tire Pressure Monitoring System (TPMS) faults are low tire pressure warnings indicating the tires have lost air. The TPMS amber warning indicator in the Instrument Cluster (IC) is illuminated when a tire pressure is less than the threshold.
- This document describes the fault diagnosis of Tire Pressure Monitoring System (TPMS) faults.

It is recommended that during the Pre-Delivery Inspection (PDI) (or at subsequent service intervals), advice should be given to customers. The damage to the Tire Pressure Monitoring System (TPMS) valve may occur if excessive side loading is applied during tire inflation or checking.



The TPMS valves are snapped/damaged when an excessive side load is applied as shown in the illustration.



The damage occurs at the edge of the valve, as shown in the illustration. Any valve damage is not covered by the Jaguar Land Rover (JLR) warranty and a claim will not be accepted. This is not a manufacturing defect.



Use a non 'wand' style inflator to maintain the tire pressures. This is equipped with a flexible hose to the single tire valve connector.

INSTRUMENT CLUSTER WARNINGS

NOTE:

When the ignition is ON, the Tire Pressure Monitoring System (TPMS) does a self-check.

Turn the ignition ON and check the Instrument Cluster (IC) for:

- The Tire Pressure Monitoring System (TPMS) amber warning indicator flashes for 75 seconds, and then stays ON continuously. Go to section 'Tire Pressure Monitoring System fault messages'.
- The TPMS amber warning indicator illuminated permanently on the IC. Go to section 'Low pressure warning'.
- The TPMS amber warning indicator does not illuminate. Go to section 'Tire Pressure Monitoring System fault messages':
- The TPMS amber warning indicator does not illuminate:
 - Displayed a warning TPMS message.
 - Displayed 1 or more wheels at 0 pressure. Go to section 'Low pressure warning'.
 - When the ignition is turned ON or when the engine is started, a low pressure warning is active for the spare wheel. The Tire Pressure Monitoring System (TPMS) amber warning indicator illuminates only for 20 seconds. After 20 seconds the TPMS warning message and the amber warning indicator are set OFF. The low pressure warning for spare wheel along with the amber warning indicator will be displayed on subsequent ignition ON or engine ON as well as a reminder.
 - TPMS fault message comes ON during a journey, and cleared during a drive cycle. The TPMS fault can be caused by additional accessories in the vehicle, causing radio interference to the radio signals coming from the tire pressure sensors. Remove the accessories from the vehicle and try again on the next journey.

LOW TIRE PRESSURE WARNING

NOTE:

To clear a low tire pressure warning indicator for the spare wheel, inflate the spare wheel to highest recommended cold tire pressure. The recommended cold tire pressures are shown on the tire label at the bottom of the front passenger B-pillar.

The Tire Pressure Monitoring System (TPMS) amber warning indicator is in the Instrument Cluster (IC). If the TPMS warning indicator illuminates during a journey or is ON all the time it indicates low tire pressure. The TPMS has detected that 1 or more tire pressures are less than the low tire pressure warning trigger value

The Instrument Cluster (IC) displays a vehicle graphic showing the tire pressure(s) are less than the low tire pressure warning trigger value and 'Tire pressures' screen. The IC displays the actual tire pressures and the required tire pressures in the tire pressure warnings and 'Tire pressures' screen.

NOTE:

The required tire pressures shown in the Instrument Cluster (IC) are the temperature compensated recommended cold tire pressures.

Check all the tire pressures even if only 1 tire is amber in the IC message center. Although only 1 tire pressure is less than the warning threshold other tire pressures could be close to the TPMS warning indicator threshold.

Check required tire pressures (the values are displayed in the brackets) in the 'Tire pressures' menu in the IC and inflate tires as required. The tire pressure in the IC updates when the tire is inflated. If the IC does not update, drive the vehicle for 5 minutes at speeds of greater than 25 km/h (16 mph). The TPMS should then update the tire pressures in the IC. The Instrument Cluster (IC) tire pressure displays can be configured to show the tire pressures in kPa, psi or bar.

Single Low Tire Pressure Warning



E252316

ITEM	DESCRIPTION
A	'Tire pressures' menu screen
B	Tire pressure warning screen
1	Actual tire pressure

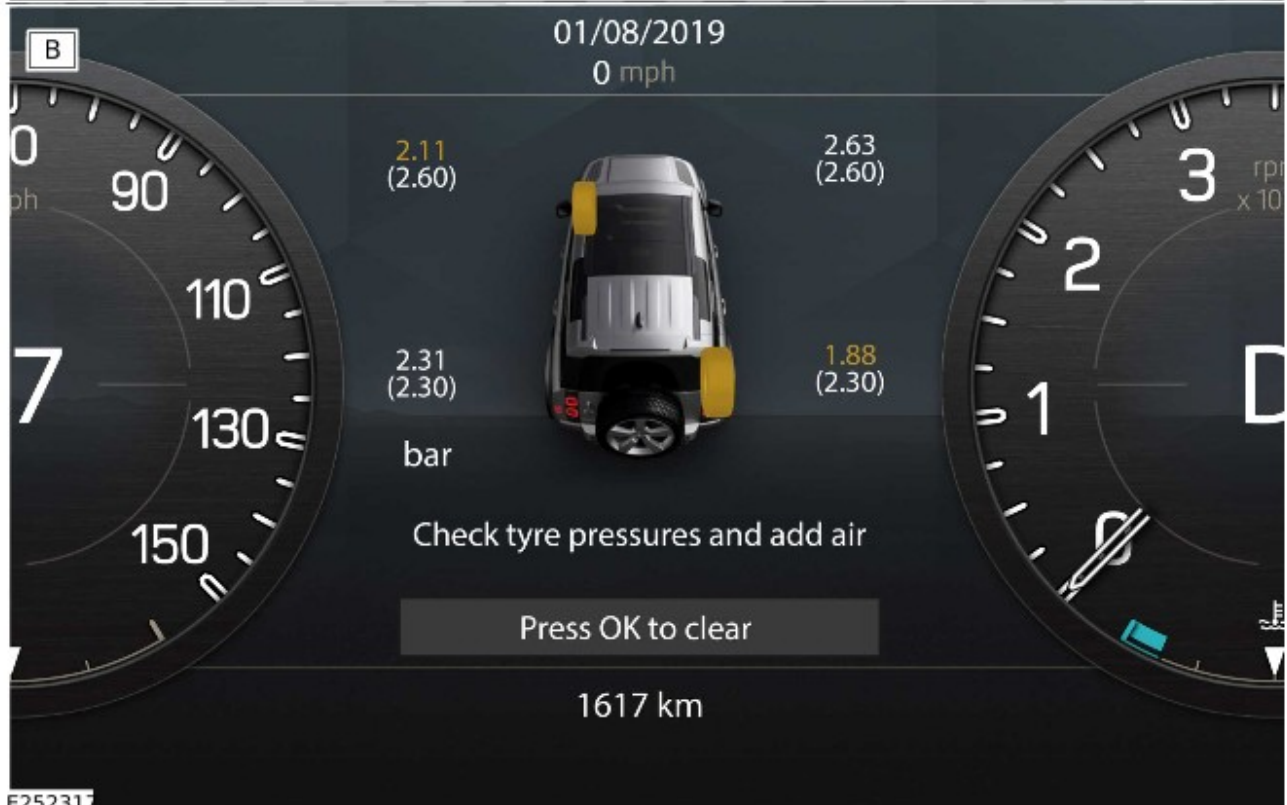
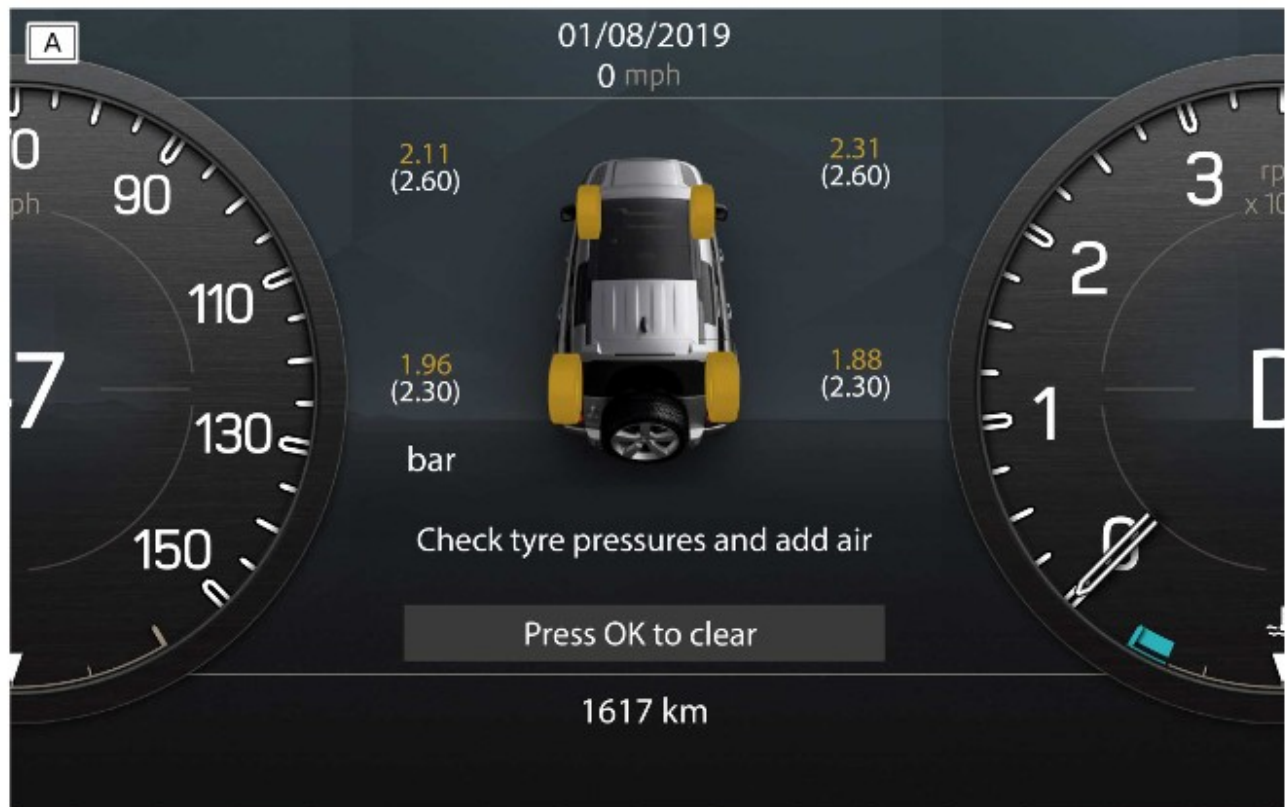
ITEM	DESCRIPTION
2	Advised tire pressure (temperature compensated recommended cold pressures)

 **NOTE:**

The Instrument Cluster (IC) will show advised tire pressure (temperature compensated recommended cold pressure) in the 'tire pressures' menu. The advised tire pressure is calculated upon the warming of the tires through use and correspond to the correct inflation pressure when the tire is cold. The advised tire pressure does not align with the tire label due to the warming of the tires through driving.

Only 1 tire is on amber. The actual and the required tire pressures are displayed.

Multiple Low Tire Pressure Warnings



E252317

ITEM	DESCRIPTION
A	Warning screen (All 4 tires are on amber)
B	'Tyre pressures' menu screen (The low tyre pressures for front left tyre and rear right tyre are on amber)

All 4 tires are shown in amber in the warning screen, when more than 1 tire has low tire pressure. Only the tires that have low tire pressures are amber in the 'Tire pressures' screen in the Instrument Cluster (IC).

If the low tire pressures for 3 tires are on amber in the 'Tire pressures' screen, all 4 tires are on amber in the warning screen.

The actual and the required tire pressure are displayed.

Tires At 0 pressure In The Instrument Cluster



If the Instrument Cluster (IC) is showing tires at 0 pressure in the 'Tire pressures' menu, the tire pressures can be updated with the correct pressures.

The tire pressures can be updated by 1 of following:

- Drive for 1 minute above 32 km/h (20 mph), or deflation or inflation with 0.34 bar (5 psi or 34 kPa) the tires showing '0'.
- Read the tire pressure sensor with a low frequency Tire Pressure Monitoring System (TPMS) tool.

TIRE PRESSURE WARNINGS

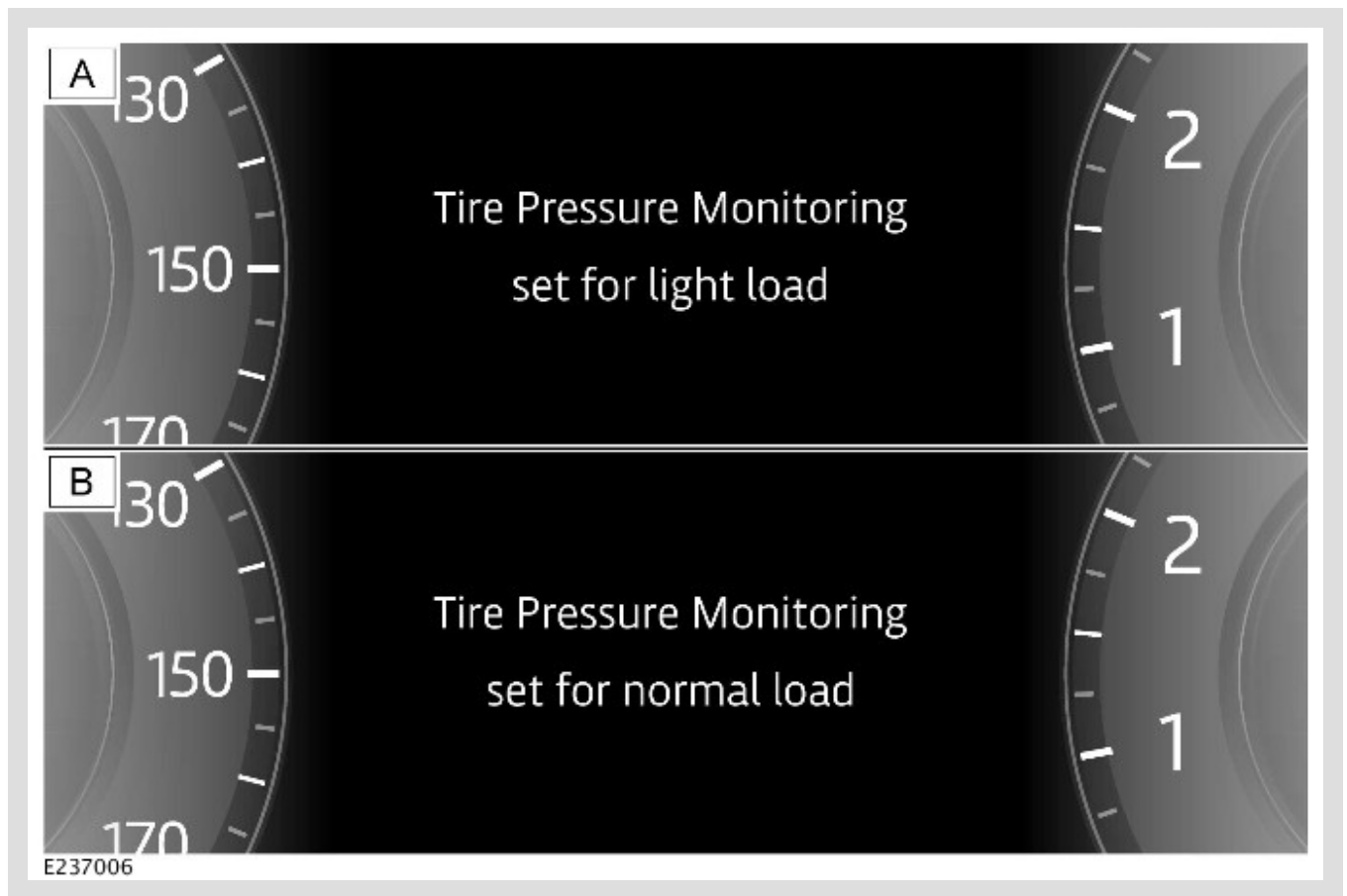
Non European or Non North American Specification Markets

When rubber valves are installed on all 4 road tires, the Tire Pressure Monitoring System (TPMS) displays a warning message. The 'Tire Pressure Monitoring not available' warning message displayed in the Instrument Cluster (IC) after 10 minutes of driving above 25 km/h (16 mph). The IC message 'Tire Pressure Monitoring not available' comes on every subsequent ignition cycle, until the tire pressure sensors are installed.

LOAD MESSAGES

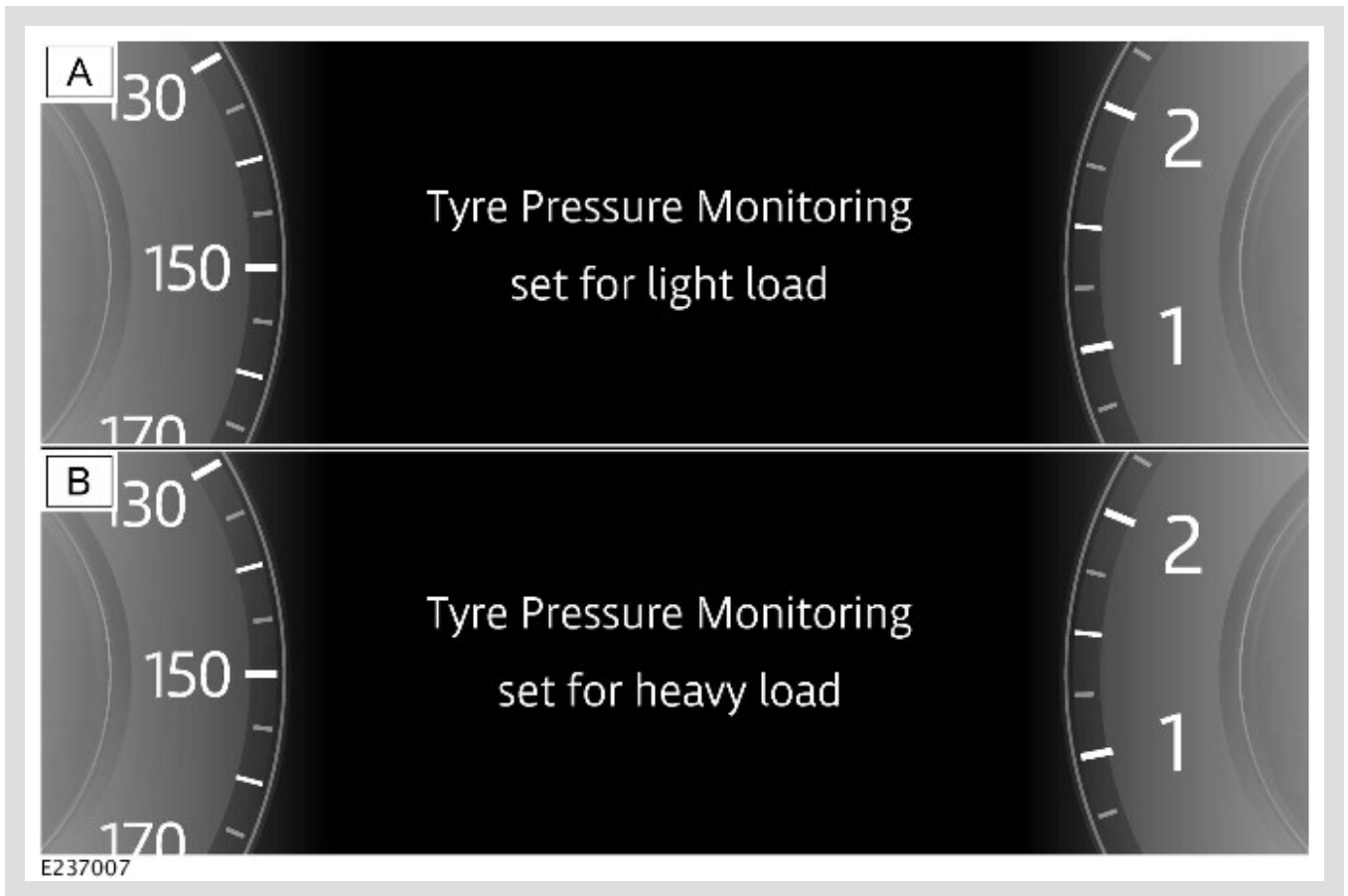
The load setting of the vehicle may be changed in the 'Tire Pressure Monitoring load setting' menu in the Instrument Cluster (IC).

North American Specification Market



ITEM	DESCRIPTION
A	Load message - Light load
B	Load message - Normal load

European Market



E237007

ITEM	DESCRIPTION
A	Load message - Light load
B	Load message - Heavy load

The load mode can be selected from the 'Tyre Pressure Monitoring load setting' menu in the IC.

The IC displays 'Tyre Pressure Monitoring set for Light Load', which means the light load mode has been set, and lower tire pressure is recommended.

The IC displays the following message:

- The 'Tyre Pressure Monitoring set for Normal Load' (North American Specification (NAS) market only).
- The 'Tyre Pressure Monitoring set for Heavy Load' (European market only).

It is a reminder that the heavy/normal load mode has been set, and the higher tire pressure is recommended.

WHEEL CANNOT BE DETECTED

With the ignition ON (Power Mode 6) and the vehicle stationary, the Instrument Cluster (IC) shows 1 or more wheels with an amber cross highlighted above the wheel.

Possible causes:

- If a rubber valve is installed, replace the rubber valve with a tire pressure sensor.
- If the mounted tire pressure sensor is an original spare part, it may be in 'Ship' mode and does not transmit signal to the Tire Pressure Monitoring System Control Module (TPMSCM).
- The installed tire pressure sensor uses the wrong frequency. For example, 315 MHz instead of 433 MHz. Ask the customer, where the tire pressure sensor was acquired.
- The mounted tire pressure sensor identification number does not match with the identification number, stored in the Tire Pressure Monitoring System Control Module (TPMSCM). This can be read using the JLR approved diagnostic equipment.
- The embedded battery within the tire pressure sensor has reached the end of its life cycle. In this case the identification numbers are matching in the tire pressure sensor and the TPSCM, as read by the JLR approved diagnostic equipment.

These claims are not covered by JLR warranty.

OPERATION

A single Tire Pressure Monitoring System (TPMS) hardware configuration is used. The TPMS status information is relayed to the driver with a message, displayed in the Instrument Cluster (IC) message center and an amber warning indicator.

For additional information, refer to: [Tire Pressure Monitoring System](#) (204-04 Wheels and Tires, Description and Operation).

TIRE PRESSURE MONITORING SYSTEM FAULT MESSAGES

Connect the Jaguar Land Rover (JLR) approved diagnostic equipment and read the Diagnostic Trouble Codes (DTCs) from the Tire Pressure Monitoring System (TPMS) sensor.

Circuit voltage above threshold:

- B1182-17 - Battery/charging system fault - Test the battery and charging system.

Tire Pressure Monitor Module internal failure:

- B1182-96 - Tire Pressure Monitor Module (TPM) internal failure - Replace the TPM.

Tire pressure sensor signals not received at the start of a drive cycle:

- C1A56-31 (Left Front Tire Pressure Sensor and Transmitter Assembly - Mute from start of drive cycle).
- C1A58-31 (Right Front Tire Pressure Sensor and Transmitter Assembly - Mute from start of drive cycle).
- C1A60-31 (Left Rear Tire Pressure Sensor and Transmitter Assembly - Mute from start of drive cycle).
- C1A62-31 (Right Rear Tire Pressure Sensor and Transmitter Assembly - Mute from start of drive cycle).

Possible causes:

- A spare wheel with a rubber valve is used in place of a road wheel.
- A rubber valve is mounted to the wheel.
- The tire pressure sensor is in 'Ship' mode and it does not transmit signal.
- The embedded battery within the tire pressure sensor has reached the end of its life cycle (Approximately 6 years).

Tire pressure sensors not recognized during a drive cycle:

- C1A56-93 (Left Front Tire Pressure Sensor and Transmitter assembly no operation (During Tire Pressure Monitoring System (TPMS) drive cycle)).
- C1A58-93 (Right Front Tire Pressure Sensor and Transmitter assembly no operation (During TPMS drive cycle)).
- C1A60-93 (Left Rear Tire Pressure Sensor and Transmitter assembly no operation (During TPMS drive cycle)).
- C1A62-93 (Right Rear Tire Pressure Sensor and Transmitter assembly no operation (During TPMS drive cycle)).

Possible causes:

- When 1 or more wheels swapped over in less than 15 minutes (winter wheel warehouse replacement).
- Radio Frequency (RF) interference of the Tire Pressure Monitoring System (TPMS) signal from the tire pressure sensors to the receiver.
- The tire pressure sensor damaged.
- The tire pressure sensor battery low (Tire pressure sensor greater than 6 years old).

Incorrect tire pressure sensor installed:

- C1A56-4A (Left Front Tire Pressure Sensor and Transmitter assembly - Incorrect component installed).
- C1A58-4A (Right Front Tire Pressure Sensor and Transmitter assembly - Incorrect component installed).
- C1A60-4A (Left Rear Tire Pressure Sensor and Transmitter assembly - Incorrect component installed).
- C1A62-4A (Right Rear Tire Pressure Sensor and Transmitter assembly - Incorrect component installed).

The vehicle has been installed with tire pressure sensors that are not compatible with the Tire Pressure Monitoring System (TPMS), installed on the vehicle. New TPMS TG1C sensors are required to be installed. This claim is not covered by Jaguar Land Rover (JLR) warranty.

Wheel localization:

- C1D18-00 Wheel localization failed.

Check for wheel speed sensor faults.

Invalid Controller Area Network signal received:

- U0001-81 Invalid Controller Area Network (CAN) signal received.

The signals received are vehicle speed from the Anti-lock Brake System (ABS) control module, Ambient Air Temperature (AAT) and ambient air pressure from the Powertrain Control Module (PCM). Read local snapshot data 0xD020 and the 4 byte code identifies the control module at fault.

Implausible Controller Area Network signal received:

- U0001-86 Implausible CAN systems bus signal received from the following control module:
 - Anti-Lock Brake System (ABS) control module
 - Powertrain Control Module (PCM)
 - Instrument Cluster (IC)
 - Body Control Module/Gateway Module (BCM/GWM).

Read local snapshot data 0xD020 and the 4 byte code identifies the control module at fault.

Controller Area Network communication bus missing message:

- U0001-87 CAN communication missing message.

If 1 or more CAN frames have not been received from the following control module:

- Powertrain Control Module (PCM)
- Anti-Lock Brake System (ABS) control module
- Body Control Module/Gateway Module (BCM/GWM)
- Instrument Cluster (IC).

Check the CAN network, and other modules Diagnostic Trouble Codes (DTCs) to find which module has the fault.

Controller Area Network Bus OFF:

- U0001-88 CAN bus OFF.

Check the CAN bus voltages.

Controller Area Network Alive/sequence counter incorrect/not updated:

- U0046-82 Invalid data received from another control module.

Check the snapshot data to determine the invalid data source control module.

Internal Control Module Software Incompatibility:

- U0300-00 Tire pressure monitoring system control module is not configured correctly.

Using the Jaguar Land Rover (JLR) approved diagnostic equipment, reconfigure the Tire Pressure Monitoring System Control Module (TPMSCM) with the latest level software.

Car configuration problems:

- U2300-54 Central configuration – Missing calibration.
- U2300-55 Central configuration – Not configured.
- U2300-56 Central configuration invalid/incompatible.
- U2300-64 Central configuration – Signal plausibility failure.

Do a software update on the Body Control Module/Gateway Module (BCM/GWM), and check the configuration for the vehicle is correct.

Missing local configuration file:

- U3000-51 Missing Local Configuration File (LCF).

Do a software update on the Tire Pressure Monitoring System Control Module (TPMSCM) selecting the correct Local Configuration File (LCF).

TIRE PRESSURE SENSOR INVESTIGATION

When the Tire Pressure Monitoring System (TPMS) warning indicator illuminates in the Instrument Cluster (IC), indicating a TPMS system fault, or 1 of the tires has a cross over the tire in the cluster image, then ask the customer if the following additional accessories are in the vehicle:

- USB chargers
- Insurance cameras
- Direct Current to Direct Current converter (DC/DC)
- Cool boxes
- Navigation
- Radar detectors.

If yes, ask the customer to remove the items, and check if the TPMS warning indicator does not illuminate in the IC.

If the tire pressure sensor is not detected, then ask the customer where the tire pressure sensor was purchased. If the tire pressure sensor is in ship mode, it needs to be put into park mode with a low frequency TPMS tool. This claim is not covered by Jaguar Land Rover (JLR) warranty, this is not a manufacturing defect.