



Tyre pressure monitoring system

❖ **An essential element of safety, tyres are too often neglected.** Significant advances in the geometry of the chassis have made it difficult to detect under-inflation, or a pressure drop. In partnership with one of the biggest names in tyres, Renault has developed a pressure monitoring system which warns the driver of any anomaly.



RENAULT COMMUNICATION

❖ BASIC FACTS

The tyres are the only physical link between the vehicle and the road, and have an essential impact on safety. Their grip coefficient is directly related to their inflation. The profile of a tyre is designed to “hug” the road as much as possible and provide maximum grip, at a specific pressure. Any unsuitable inflation leads to a decrease in grip and may lead to over-consumption, or even a risk of blow-out. Moreover, the configuration of current vehicle bodies, designed to offer optimal road holding, tends to mask the effects of inflation problems. For the driver, the dynamics of the car seem “normal”, until he is faced with an emergency or an incident occurs. It is therefore important to inform the driver of any anomaly, by means of a message displayed on the dashboard. The tyre pressure monitoring system fulfils this role.

IN SHORT ❖❖

Thanks to a permanent radio link with each wheel, the tyre pressure monitoring computer informs the driver of any anomaly such as under-inflation or a puncture, by means of a warning message.



HOW DOES IT WORK?

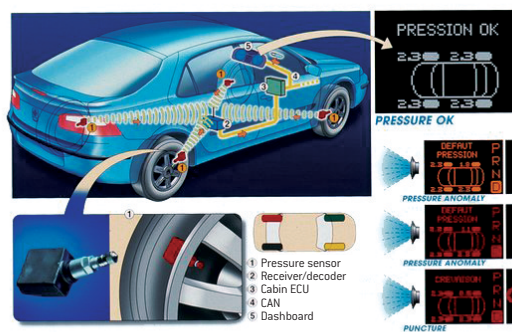
1 MASTERING TRAJECTORY

A small electronic module housed in the inflation valve of each wheel permanently monitors the tyre. It contains a pressure sensor, a temperature sensor and a radio transmitter. A lithium battery, also included in the electronic module, provides ten years of autonomy. Every minute, by means of a short radio burst, the module transmits the values from the sensors to a computer onboard the vehicle. It correlates this data with other data, such as the wheel rotation speed and acceleration,

to detect any anomaly. A loss of pressure, an imbalance in pressure between the wheels, or over- or under-inflation immediately triggers a warning which specifies the type of anomaly and the wheel concerned. Of course, the "radio dialogue" between the wheels and the onboard computer occurs in coded digital form, to eliminate any risk of interaction with any other nearby vehicle also fitted with a tyre pressure monitoring system.

2 RUNNING FLAT

Some systems, such as the PAX System, developed by Renault in partnership with Michelin, go even further. As well as warning of an anomaly, the wheels contain a flexible support on which the tyre tread can rest in the event of a total loss of pressure. This process enables the car to run on a flat tyre for 200 km, albeit at a top speed of 80 kph.



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IN SHORT

On the PAX System, developed in partnership with Michelin, a flexible support replaces the air in the event of a total loss of pressure.

For more information on the tyre pressure monitoring system: securite.renault.fr/fiche.php?id_fiche=25

For more information on the PAX System: www.michelin.fr/fr/auto/pax_2.jsp