

JASO

Technical Paper

Investigation of vehicle test procedures for
TPMS (Tyre Pressure Monitoring System)

JASO TP-06002

Japanese Automobile Standards Organization
Society of Automotive Engineers of Japan, Inc.

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1. Purpose and requirement for establishment

Tyre pressure monitoring systems (hereinafter referred to as "TPMS") are currently obliged to be installed under regulation FMVSS 138 in the United States. The systems will be installed in all vehicles (passenger cars and multipurpose passenger vehicles with a gross vehicle weight of 4536 kg or less). In Europe, under regulation ECE R64, mandatory installation of Run-Flat Warning System (a type of TPMS) is being discussed. ECE R64 is also scheduled to be adopted in Japan.

In addition, ISO 21750 has been established by ISO/TC22/WG12 as an international standard. However, its descriptions of detection requirements for tyre under-inflated pressure were inappropriate. Therefore, a vote for its revision as NWIP was held aiming at harmonization with US regulations, and the revision was formally decided.

Amid this situation, it is aimed at the establishment of a JASO standard in 2007 for the vehicle test method for TPMS in order to promote standardization with international harmonization and consequently, safety improvement.

In view of the test method specified in US regulations and the test method studied in ECE R64, a TPMS vehicle test method was discussed incorporating both regulations. The results of the discussions were formulated in this technical paper to reflect opinions from Japan in the international standard.

2. Vehicle test method for TPMS

2.1 Purpose

This standard specifies the necessary requirements for a vehicle test method to check whether a TPMS satisfies requirements which are separately laid down in regulations.

2.2 Scope

This technical paper is applicable to TPMS installed passenger cars, multipurpose passenger vehicles, trucks and buses that have a gross vehicle weight of 4536 kg or less, except those vehicles with dual wheels on an axle. The technical paper is also applicable to Run-Flat Warning Systems (RFWS) installed vehicles used for transportation of passengers with 8 or less seats in addition to the driver's seat, and vehicles used for transportation of cargo, with a maximum cargo weight of less than 3.5 t.

2.3 Definition

The following definitions are applicable to this technical paper.

TPMS refers to a tyre monitoring systems that warn a driver of probable safety problem caused by a significantly under-inflated tyre pressure as specified in FMVSS 138. The system includes the RFWS studied in WP29 Regulation No.64 (proposal).

2.4 Requirements

The requirements of TPMS are based on the requirements of the TPMS in FMVSS 138 and the RFWS for run-flat tyres in WP29 Regulation No.64 (proposal).