TIRE PRESSURE WARNING SYSTEM

■ DESCRIPTION

- The tire pressure warning system has been adopted on all models.
- While the vehicle is in motion, this system monitors the fluctuations in the wheel speed signals that are output by the speed sensor for the brake control system. It informs the driver if it detects a low tire pressure.

■ DETECTION METHOD

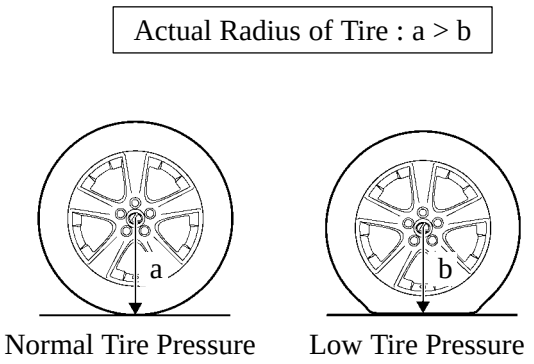
1. General

This system uses two methods: a relative wheel speed difference system that determines a low tire pressure according to the condition of each wheel, and a resonance frequency method that determines a low tire pressure from all four wheels.

When the system determines a low tire pressure through one of these methods, the system informs the driver of it by turning ON the low tire pressure warning light in the combination meter.

2. Relative Wheel Speed Difference Method

The relative wheel speed method utilizes the changes in the wheel speeds that occur when the actual radius of a tire decreases due to a low tire pressure. Based on the wheel speed signals that are output by the speed sensors, the system calculates the four-wheel average wheel speed within a prescribed length of time and the average wheel speed of each wheel. Then, the system determines the presence of a low tire pressure based on the relative difference between the speed of each wheel and the average speed of the four wheels.



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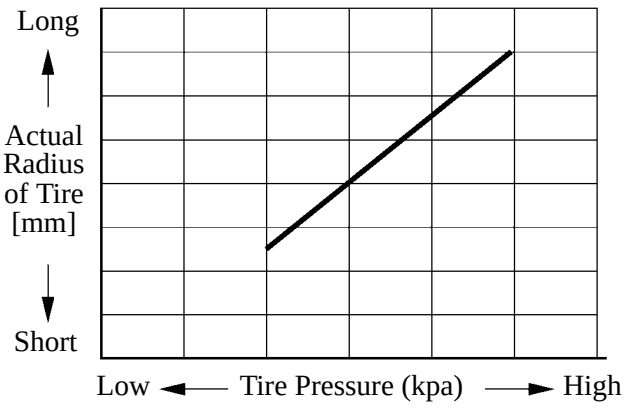

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3. Resonance Frequency Method

The tire's torsional spring constant changes due to the change in tire inflation pressure.
Based on the wheel speed signal that is detected while the vehicle is in motion, the changes in the tire's resonance frequency are estimated as the changes in the spring constant, thus detecting as the changes in the tire inflation pressure.