TIRE PRESSURE WARNING SYSTEM

■ GENERAL

1. Outline

- A direct-sensing type tire pressure warning system is used for some G.C.C. country models.
- A high-pressure tire pressure monitor valve sub-assembly is used. The high-pressure tire pressure monitor valve sub-assembly can measure tire pressure up to approximately 800 kPa (116 psi, 8.0 bar)[*1, *2].

HINT:
***1: This value is relative pressure.**
***2: The high-pressure tire pressure monitor valve sub-assembly is not compatible with the low-pressure tire pressure monitor valve sub-assembly for passenger vehicles. When a low-pressure tire pressure monitor valve sub-assembly has been erroneously installed, an error is detected.**

- Since tire pressure decreases over time, regular adjustments are necessary. When the tire pressure warning system detects that the pressure of a tire has dropped lower than the warning threshold, it will illuminate the tire pressure warning light to warn the driver.
- The 5 tire pressure monitor valve sub-assemblies each send the tire inflation pressure, temperature and ID code information to the tire pressure monitor receiver assembly.
- The tire pressure monitor receiver assembly, which consists of an antenna, a receiver and an ECU, monitors the tire pressure monitor valve sub-assemblies to detect low tire pressure in each of the 5 tires including the spare tire.
- The operation of the tire pressure warning system includes a warning function, initial check function, initialization function and diagnosis function.
- The transmission cycle with which the information is sent from the tire pressure monitor valve sub-assembly to the tire pressure monitor receiver assembly is determined as follows based on the travel mode and the acceleration sensor built into each tire pressure monitor valve sub-assembly. Since the acceleration sensor is used only to determine if the vehicle is being driven, the value of rotational acceleration is not sent to the tire pressure monitor receiver assembly.

Travel Mode	Transmission Cycle
While stopped*1	1 time / 1.5 min
While traveling*2	4 times / 1 min

*1: When G that is applied to the acceleration sensor is less than 8 G.
*2: When G that is applied to the acceleration sensor is 8 G or greater.

- The warning threshold changes in accordance with pressure changes caused by driving conditions during initialization. Therefore, when a decreased tire pressure warning is displayed, the warning may not stop even though the tire inflation pressure has been adjusted to the recommended pressure. At that time, initialization is necessary.

2. Precaution

- The system is disabled in the following conditions (when the condition becomes normal, the system will work properly):
  - When all of the tires and wheels that have the tire pressure monitor valve sub-assemblies registered with the tire pressure monitor receiver assembly have not been installed.
  - When all of the transmitter ID codes are not registered with the tire pressure monitor receiver assembly.
  - When the tire pressure is extremely high (relative pressure: 800 kPa (116 psi, 8.0 bar) or more).
  - When the transmitter battery is depleted (battery life: approximately 10 years).
- The system may become disabled in the following conditions (when the condition becomes normal, the system will work properly):
  - When electric devices or facilities using similar radio wave frequencies are nearby.
  - When a wireless device or other equipment operating at a similar frequency is in use in the vehicle.
  - When a window tint that affects the radio wave signals is installed.
  - When there is a lot of snow or ice on the vehicle, in particular around the wheels or wheel housings.
  - When non-genuine wheels are used.
  - When tire chains are used.
  - When a tire repair sealant is used.

- A large metallic object which can interfere with signal reception has been put in the cargo space.
- The tire pressure warning system may not function properly if a tire repair sealant has been used to repair a flat tire. If this type of sealant has been used, the tire pressure monitor valve sub-assembly should be replaced with a new one after repairing or replacing the tire.
- The tire pressure warning light may illuminate due to natural pressure loss caused by air passing through the tires or by changes in tire pressure caused by temperature fluctuations. When adjusting tire pressure, please be aware of the driving conditions and temperature conditions. The tire pressure warning light is prone to illuminate especially in late autumn and during winter.