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| **Model Year:** 2013 | **Model:** RAV4 | **Prod Date Range:** [12/2012 - ] |
| **Title:** TIRE PRESSURE MONITORING: TIRE PRESSURE WARNING SYSTEM: GENERAL; 2013 MY RAV4 [12/2012 - ] | | |

# GENERAL

## 1. OUTLINE

(a) A direct-sensing type tire pressure warning system is used for some models.

(b) 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.

(c) The 5 tire pressure warning valve and transmitters each send the tire inflation pressure, temperature and ID code information to the tire pressure warning ECU and receiver.*

*: Models with full size spare tire (models with compact size spare tire or puncture repair kit have 4 tire pressure warning valve and transmitters.)

(d) The tire pressure warning ECU and receiver, which consists of a receiver and an ECU, monitors the tire pressure warning valve and transmitters to detect low tire pressure in each of the 5 tires including the spare tire*.

**HINT:**

*: The spare tire is not included on models without full size spare tire.

(e) The operation of the tire pressure warning system includes a warning function, initial check function, initialization function and diagnosis function.

(f) The transmission cycle with which the information is sent from the tire pressure warning valve and transmitter to the tire pressure warning ECU and receiver is determined as follows based on the travel mode and the acceleration sensor built into each tire pressure warning valve and transmitter. 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 warning ECU and receiver.

| SUPPLIER | TRAVEL MODE | TRANSMISSION CYCLE |
|---|---|---|
| Pacific Industrial Co., Ltd | While stopping*1 | 1 time / 1.5 min |
| | While traveling*2 | 4 times / 1 min |
| TRW Automotive | - | 4 times / 3 min |

**HINT:**

*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.

## 2. PRECAUTION

(a) Ignition Switch Expressions

(1) The type of ignition switch used on this model differs depending on the specifications of the vehicle. The expressions listed in the table below are used in this section:

| EXPRESSION | IGNITION SWITCH (POSITION) | ENGINE SWITCH (CONDITION) |
|---|---|---|
| Ignition Switch Off | LOCK | Off (Lock) |
| Ignition Switch ACC | ACC | On (ACC) |
| Ignition Switch ON | ON | On (IG) |
| Engine Start | START | On (Start) |

(b) The system is disabled in the following conditions (when the condition becomes normal, the system will work properly):

(1) When all of the tires and wheels that have tire pressure warning valve and transmitters registered with the tire pressure warning ECU and receiver have not been installed.

(2) When all of the transmitter ID codes are not registered with the tire pressure warning ECU and receiver.

(3) When the tire pressure is extremely high [380 kPa (55 psi, 3.9 bar) or more].

(4) When the transmitter battery is depleted (battery life: approximately 10 years).

(c) The system may become disabled in the following conditions (when the condition becomes normal, the system will work properly):

(1) When electric devices or facilities using similar radio wave frequencies are nearby.

(2) When a wireless device or other equipment operating at a similar frequency is in use in the vehicle.

(3) When a window tint that affects the radio wave signals is installed.

(4) When there is a lot of snow or ice on the vehicle, in particular around the wheels or wheel housings.

(5) When non-genuine wheels are used.

(6) When tire chains are used.

(7) When a tire repair sealant is used.

(8) The spare tire is not within the receivable range of the tire pressure warning ECU and receiver.*

(9) A large metallic object which can interfere with signal reception has been put in the luggage compartment.*

*: Models with full size spare tire

(d) 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 warning valve and transmitter should be replaced with a new one after repairing or replacing the tire.

(e) 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 fall and during winter.