

SMARTIRE[®]



SmarTire SmartWave External TPM Sensor Installation Guide

PN: 710.0080

Revision 1.0

Installation Guide

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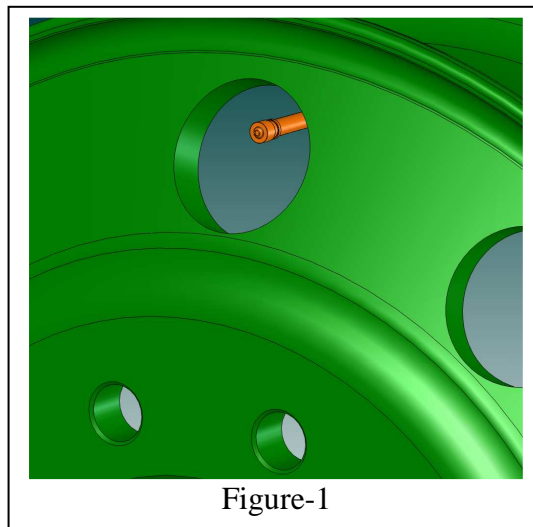
1.0 SmartWave External Tire Pressure Monitoring Sensor Installation Instructions

1.1 Important Notes

- A) This is a safety device and is designed to be robust and light. Avoid putting any extra stress on the transmitter unit or the metal stem. You may damage the sealing surfaces and cause the unit to leak.
- B) Do not use pliers to install the unit. It will damage the transmitter and the stem, voiding your warranty.
- C) There are situations that the following instruction is not applicable. This is because of the wide variety in the valves and rim designs on the market. It might be necessary to remove the wheel assembly from the vehicle in dual locations to have proper access to the valve.
- D) Some dual wheels are assembled with the valves located in the same location. This issue will restrict the installation especially on the alloy wheels with smaller opening around the valves. Furthermore it will cause difficulties programming the receiver unit since hand tool will activate both transmitters as they are side by side.
- E) Do not process with installation if unit cannot be assembled properly on the valve.
- F) It is highly recommended to use a proper torque wrench and do not exceed the specified torque. You can damage the internal gasket, damage your valve assembly on the rim or even make it loose. Unit may get unfastened after a while if installation torque is less than adequate. If a torque wrench is not handy use the supplied tool (ratcheting stubby flex wrench), bend the head 90° (to reduce the leverage) and use only one hand to tight it on the valve.

1.2 Required Steps

- 1- Remove the existing Valve Cap and make sure the valve tip and core are in good condition. Do not proceed with installation if there are any physical damages on the valve body, valve tip, or visible corrosion. (Figure 1)



- 2- Clean the valve with soapy water, a clean cotton cloth, and dry it. Make sure no residue of dirt/dust is left on it.
- 3- Clean your hands.
- 4- Remove the transmitter from its package.
- 5- Remove the transmitter from its metal core. First open the nut and then simply twist and pull it apart. (Figure 2). Do not touch the black o-rings. Place the transmitter in a protected area so dirt and dust does not get to its internal cylinder.

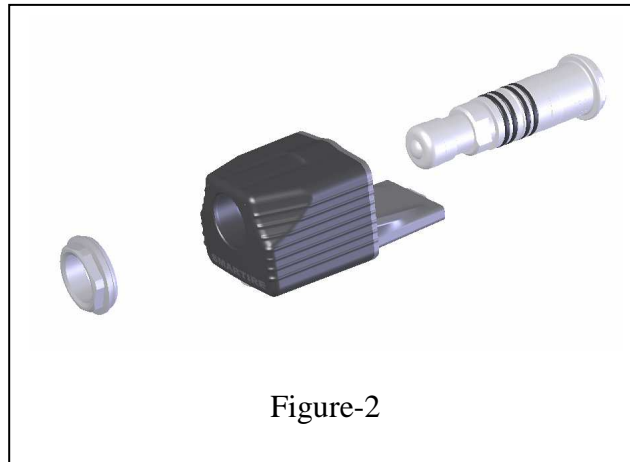


Figure-2

- 6- Inspect the stem and make sure it has four o-rings on the outside and one black gasket inside. (Figure 3)

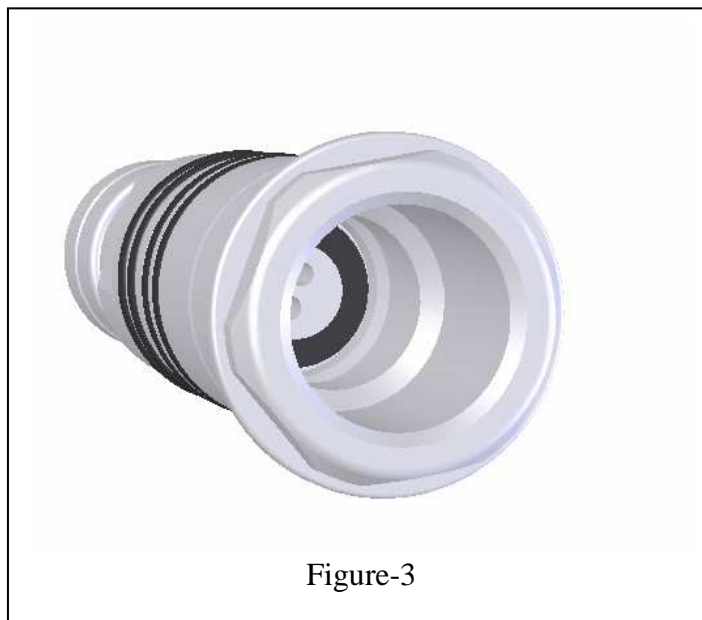


Figure-3

- 7- Install the metal stem on the valve by turning it slowly. Stop as soon as you heard a leak. Open the stem by rotating it back wards for about half-turn until leak stops. Do not touch the o-rings.
- 8- Assemble the transmitter unit on the stem by just pushing it in place. Make sure it is all the way down.
- 9- If there is enough room, reach the flat area on the stem and tight the unit using a 9mm short handle spanner wrench to 1.5N.m (-0 / +0.5). If there is not enough room go to step 10.
- 10- Reach the hex at the back of the stem and use a 12mm wrench to tight it on the valve to 1.5N.m (-0 / +0.5). If there is not enough room go to step 11.
- 11- Assemble the nut. Make sure its Hex side is facing out. Hand tight the nut in place.
- 12- Use a 12mm wrench and tight the hex nut 1.5N.m (-0 / +0.5). Unit initiates a slow leak but it will stop leaking after couple turns.
- 13- You can adjust the transmitter after by rotating it to have maximum clearance against the brake assembly.
- 14- Adjust the pressure on all the tires. Refer to your vehicle's manual for proper inflation pressures for each axle/tire position.
- 15- Make sure units are not leaking by applying some foam around them while the tires are pressurized.

2.0 System Scope of Use and Warnings

This tire monitoring system does not in any way replace the need for regular maintenance of the tire pressures and visual inspection of tires for damages.

2.1 System Installation and Usage

Warranty of the SmarTire system requires that it has been properly installed and programmed by qualified personnel according to SmarTire Systems Inc. documentation. This includes all manuals and any supplementary installation instructions included with system components.

2.2 Use of Chemicals

Use of temporary resealing or re-inflation products containing internal sealers or propellants in any tire/wheel assembly may adversely affect the operation of the Sensor/Transmitters and void the warranty.

2.3 Reacting to Alerts

When an alert or warning condition is detected, reduce vehicle speed to an appropriate, safe level and proceed to a safe stopping location or facility where the tire can be inspected and serviced.

3.0 SmarTire Product & Service Part Warranty

EFFECTIVE NOVEMBER 15, 2005

This warranty is effective as of November 15, 2005 and supersedes all past warranties expressed by SmarTire Systems Inc. Warranty subject to change by SmarTire Systems Inc. at any time without notice.

Warranty claims must be processed with the Authorized SmarTire Dealer of purchase and not SmarTire Systems Inc.

WARRANTY POLICY

Subject to the conditions stated herein, SmarTire Systems Inc. ("SmarTire") warrants that its Products and service parts, when properly installed in approved applications, will conform to Product specifications and will be free from defects in material and workmanship under normal use and service. The term of SmarTire's warranty for its Products is 24 months and unlimited mileage commencing on the date of retail sale. Dated proof of purchase and claimed parts for return are required. The term of SmarTire's warranty for its service parts is 12 months and unlimited mileage commencing on the date of retail sale. Dated proof of purchase and claimed parts for return are required. The SmarTire warranty will be honored by the authorized SmarTire dealer from which the Product or service part was purchased.

Subject to warranty approval, SmarTire shall, at its discretion, cover the following:

- Products: replacement parts and cost of labor;
- Service Parts: replacement parts only.

SmarTire's obligation to satisfy a warranty claim is subject to, yet not limited to the following conditions:

- a. dated proof of purchase is provided;
- b. all Product involved must, unless otherwise indicated by SmarTire, be returned to the Authorized SmarTire Dealer of purchase; and
- c. SmarTire's examination of the Product must disclose to SmarTire's satisfaction that none of the Warranty Exclusions described herein apply. In all cases, SmarTire shall make the final determination as to the warrantability of the Product.

Products replaced under warranty are covered hereunder by whichever is greater, the remaining portion of the original warranty period or 12 months.

GENERAL LIMITS AND EXCLUSIONS

Coverage is not provided for the following failures or expenses:

- a. Towing;
- b. Downtime, lodging, meals, and travel time or transportation;
- c. Troubleshooting / Diagnostics - except where allowed as indicated in the SmarTire approved guidelines;
- d. Freight for expedited or rush parts shipments (Parts will be shipped by the most economical means possible);
- e. Non-genuine replacement parts void the component warranty when used to make a repair;
- f. Component damage due to failure of other chassis or vehicle components;
- g. Undefined or unidentifiable miscellaneous changes;
- h. Failures due to product mis-application or SmarTire unapproved application;
- i. Failures due to unapproved alterations or modifications to the vehicle or the SmarTire component;
- j. Failures caused by improper installation or improper prior repair including damage to Product by tire (tyre) removal or installation;
- k. Corrosion and rust;
 - l. Tires (tyres)
- m. Failures due to dirt, snow, or ice build-up;
- n. Accident, damage, negligence, abuse or misuse.

All returned Products become the property of SmarTire and will not be returned. SmarTire's determination of warranty coverage shall be final in all cases.

SmarTire reserves the right to reject warranty claims for any or all of (but not limited to) the following reasons:

- a. Proof of purchase was not provided;
- b. Failure occurred beyond applicable warranty period;
- c. Claim information is insufficient;
- d. Product was not returned for inspection as requested;
- e. Product inspection does not substantiate claim or indicate a failure.

WARRANTY DISCLAIMER

SMARTIRE'S EXPRESS WARRANTY AND PURCHASER'S REMEDIES THEREUNDER ARE EXCLUSIVE AND GIVEN IN PLACE OF (a) ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, WHETHER WRITTEN OR ORAL, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR IMPLIED WARRANTY ARISING FROM PERFORMANCE, COURSE OF DEALING OR USAGE OF TRADE, AND (b) ALL OTHER OBLIGATIONS, LIABILITIES, RIGHTS, CLAIMS OR REMEDIES, INCLUDING ANY RIGHT IN CONTRACT, TORT, EXTRA-CONTRACTUALLY, STRICT LIABILITY OR ANY RIGHT ARISING FROM SMARTIRE'S NEGLIGENCE, ACTUAL OR IMPUTED. YOUR STATUTORY RIGHTS ARE NOT AFFECTED.

LIMITATION OF LIABILITY

SMARTIRE'S OBLIGATIONS AND PURCHASER'S REMEDIES UNDER SMARTIRE'S EXPRESS WARRANTY ARE LIMITED TO SMARTIRE'S CHOICE OF REPAIR, CREDIT OR REPLACEMENT AND EXCLUDE LIABILITY FOR INCIDENTAL, SPECIAL, CONSEQUENTIAL OR ANY OTHER DAMAGES, INCLUDING, WITHOUT LIMITATION, REPLACEMENT COSTS, ECONOMIC LOSS, LOST REVENUE, LOST PROFITS, OR LOSS OF USE OR DAMAGE TO OTHER PROPERTY.

PRODUCTS ARE CONSIDERED TO BE MONITORING DEVICES, AND ARE NOT TO BE CONSIDERED AS SAFETY DEVICES.

FCC NOTICE

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION. THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS B DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE IN A RESIDENTIAL INSTALLATION. THIS EQUIPMENT GENERATES, USES AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTIONS, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. HOWEVER, THERE IS NO GUARANTEE THAT INTERFERENCE WILL NOT OCCUR IN A PARTICULAR INSTALLATION.

IF THIS EQUIPMENT DOES CAUSE HARMFUL INTERFERENCE TO RADIO OR TELEVISION RECEPTION, WHICH CAN BE DETERMINED BY TURNING THE EQUIPMENT OFF AND ON, THE USER IS ENCOURAGED TO TRY TO CORRECT THE INTERFERENCE BY ONE OR MORE OF THE FOLLOWING MEASURES:

- ***REORIENT OR RELOCATE THE RECEIVING ANTENNA***
- ***INCREASE THE SEPARATION BETWEEN THE EQUIPMENT AND RECEIVER.***
- ***CONNECT THE EQUIPMENT INTO AN OUTLET ON A CIRCUIT DIFFERENT FROM THAT TO WHICH THE RECEIVER IS CONNECTED***
- ***CONSULT THE DEALER OR AN EXPERIENCED RADIO/TV TECHNICIAN FOR HELP***
- ***CHANGES OR MODIFICATIONS TO THIS DEVICE WITHOUT THE EXPRESS APPROVAL OF SMARTIRE SYSTEMS INC. MAY VOID THE USER'S AUTHORITY TO USE THIS DEVICE***