# Installation Instructions



# SMARTIRE® BY BENDIX CVS TIRE SENSOR INSTALLATION



Figure 1 – SmarTire<sup>®</sup> by Bendix CVS Tire Sensor Installation

A IMPORTANT NOTICE: PLEASE READ these instructions carefully and follow each step precisely to ensure that you DO NOT DAMAGE A SENSOR and that the SENSORS ARE INSTALLED IN THE CORRECT, PRE-PROGRAMMED LOCATIONS.

SmarTire<sup>®</sup> by Bendix CVS system tire sensors can be broken when mounting or dismounting a tire unless specific instructions are followed. If tire work is done by an unauthorized facility, please let them know that a tire pressure monitoring system is installed on the vehicle before they remove a tire from a wheel.



Exercise caution and take precautions when cutting the steel strap. Beware of potential sharp edges.

- 1. Remove the wheel from the vehicle and the tire from the rim.
- Wrap and <u>center</u> the mounting strap in the lowest point of the drop center well of the rim and mark it 1 inch (25 mm) past the worm gear. Cut the mounting strap at the mark. Any excess strap material must be removed or it will potentially break-off and damage the tire.



DEVIATION FROM THE ASSEMBLY PROCEDURE WILL RESULT IN STRAP/TRANSMITTER FAILURE.

## GENERAL SAFETY GUIDELINES WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed AT ALL TIMES:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, EXTREME CAUTION should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically-charged components.
- ▲Do not attempt to install, remove, disassemble or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with a Bendix<sup>®</sup> AD-IS<sup>®</sup> air dryer system, a Bendix<sup>®</sup> DRM<sup>™</sup> dryer reservoir module, a Bendix<sup>®</sup> AD-9si<sup>®</sup>, AD-HF<sup>®</sup>, or AD-HF<sup>®</sup>i air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix<sup>®</sup> brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power MUST be temporarily disconnected from the radar sensor whenever any tests USING A DYNAMOMETER are conducted on a vehicle equipped with a Bendix<sup>®</sup> Wingman<sup>®</sup> system.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.

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# MOUNTING STRAPS NOT INSTALLED STRAIGHT MAY BECOME LOOSE AND FAIL.



- 3. Slide on the sensor with the transmitter oriented with the cradle arrow pointing toward the valve.
- 4. The sensor must always be installed at the tire valve in order to know its location after the tire has been mounted.
- With the mounting strap and sensor positioned in the lowest point of the drop center well, feed the end of the strap into the worm gear and hand tighten the strap using a 5/16" (8 mm) hexagon driver. Do not fully tighten until sensor is oriented so that it is positioned at the valve with the worm gear 4 in. (100 mm) away from the edge of the sensor. See Figure 3.



Do not overtighten the strap. Reference torque: 35 in-lbs (4 Nm).



Figure 2 – Mounting Strap Sizing



Figure 3 – Feed Strap Into Sensor



#### DEVIATION FROM THE ASSEMBLY PROCEDURE WILL RESULT IN STRAP/TRANSMITTER FAILURE.

6. Indicate that a sensor has been installed by applying the supplied rim label to the rim. Clean and dry the rim as needed. *See Figure 4.* 



 The sensor number (P1, P2, etc.) is shown on the sensor body. In Step 9, the tires will be installed on the vehicle with the sensors in a pre-allocated position. Use a method – such as marking the number on the rim, or moving the tires to a set location – for keeping track of which tire has which sensor, before installing the tires.



8. See Figure 5. To avoid damaging the sensor, simply mount the tire so that the last part of the bead to slip over the flange will be at the sensor. Start at one end of the tire and work towards the opposite end with the tire oriented so that the beads are first pushed under the rim flange directly opposite the sensor (Step A) and then worked over the flange toward the sensor (Step B). Using this technique, the bead will slip over the rim flange at the sensor without contacting it (Step C). Repeat for the remaining beads.



### SENSORS/WHEELS MUST BE INSTALLED IN THE CORRECT LOCATIONS

9. For a truck application *see Figure 6* to verify that the wheels are installed in the pre-allocated location for each (numbered P1, P2, etc.) sensor. For a trailer application *see Figure 7*.



Figure 5 – Using A Tire Iron

Figure 4 – Caution Stickers



Figure 6 – Tractor Diagrams Showing The Pre-Allocated Sensor Locations Expected By SmarTire® TPMS



Figure 7 – Trailer Diagrams Showing The Pre-Allocated Sensor Locations Expected By SmarTire<sup>®</sup> Trailer-Link<sup>™</sup> TPMS

For complete installation instructions, *download the SmarTire*<sup>®</sup> *TPMS Operator's Manual (BW2799) or the SmarTire*<sup>®</sup> *Trailer-Link*<sup>™</sup> *TPMS Operator's Manual (BW2920)* from the Document Library, or the Literature Center, at bendix.com.



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