

Installation Instructions



SmarTire® Tire Pressure Monitoring System (TPMS) by Bendix CVS Replacement Service Kit

KIT COMPONENTS

The following components are in the SmarTire® Tire Pressure Monitoring System (TPMS) by Bendix CVS service kit:

Component	Quantity
Electronic Control Unit (ECU)	1
Washer	2
Nut	2
Patch Cable	1

BACK UP THE CURRENT TPMS SETTING

1. If the current Electronic Control Unit (ECU) can communicate on the CAN bus, use the Bendix® ACom® PRO™ diagnostic software connected to the vehicle diagnostic port.
2. Select the *Bi-Directional tool bar icon*, and then *start the TPMS Backup and Restore application*.
3. Select the *Save Settings button* to create a backup of the ECU parameters to your computer.

REMOVING THE PREVIOUS ECU

1. Unscrew the existing antenna connector from the ECU (1). See Figure 1.
2. Unplug the main harness from the existing TPMS ECU (2).

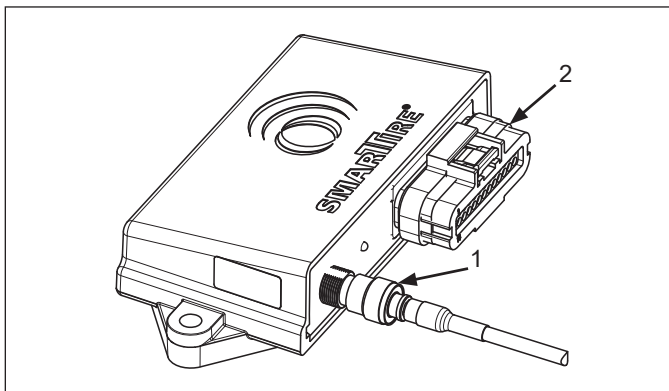


Figure 1 - Removing the Previous ECU

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® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, a Bendix® AD-9si®, AD-HF®, or AD-HFi™ 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® 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® Wingman® system.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the guidelines above.

- Remove the two (2) bolts securing the original Electronic Control Unit (ECU) to the vehicle chassis and set it aside. See Figure 2.

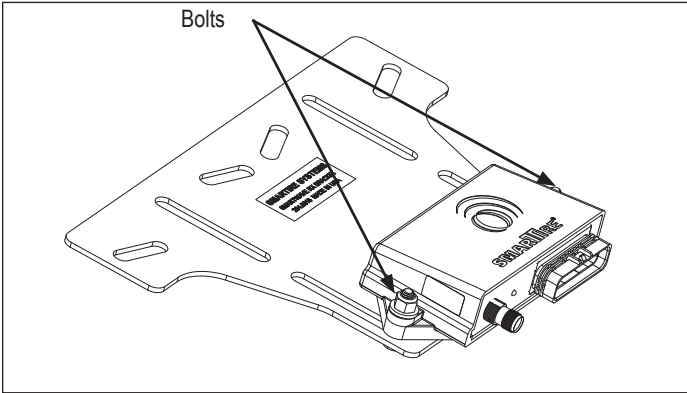


Figure 2 - Removing the ECU Bolts

REPLACING THE ORIGINAL HARNESS CONNECTOR

- Make note of the wire colors and position(s) on the original connector housing. It is important to identify the power, ground, CAN high, and CAN low wires. These will normally be red, black, yellow, and green respectively. If these are not the colors used, use the pin diagram in Figure 3 to identify and notate the wire signals.
- Using wire cutters, cut the original wires close to the top of the connector shell.

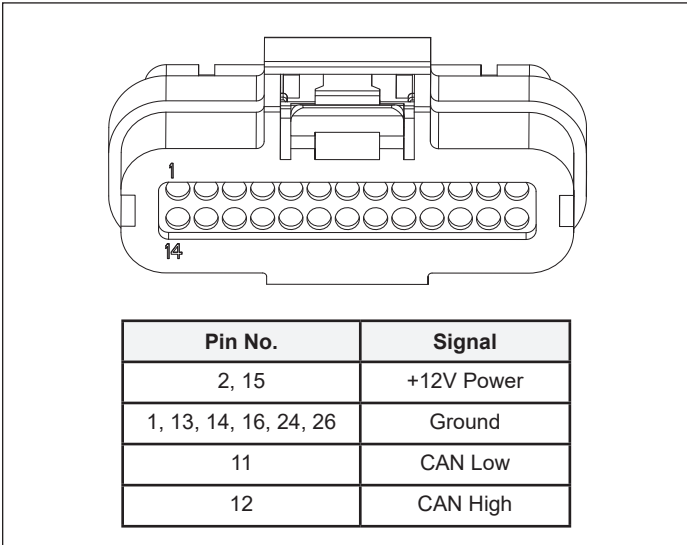


Figure 3 - Replacing the Original Harness Connector

- Strip the cut wires. Using a suitable crimping tool, crimp the provided terminals to the stripped wires. See Figure 4.

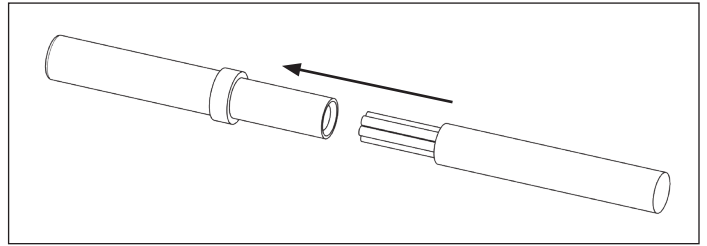


Figure 4 - Stripping the Wires and Crimping the Terminals

- Carefully push the terminal into the back of the provided 4-pin Deutsch connector. Ensure the crimped end does not have any sharp protrusions that could damage the silicone seal. See Figure 5 for the proper way to insert the wires.

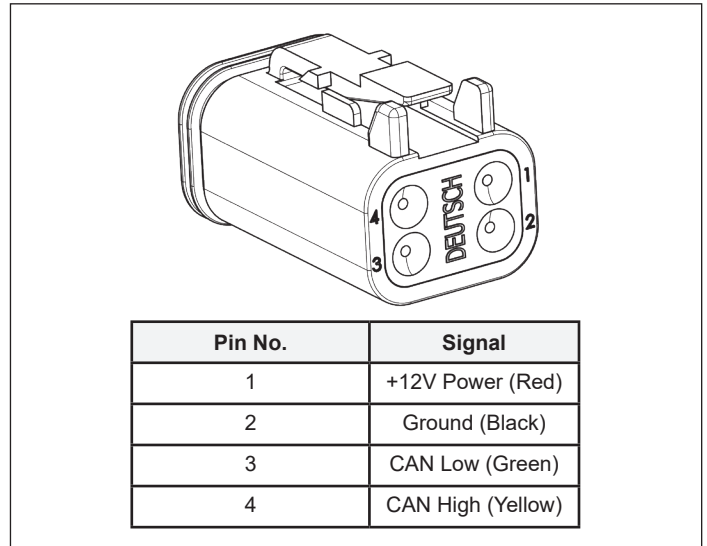


Figure 5 - Inserting the Wires

- Ensure the terminals are fully seated in the housing. Insert the locking cap to the front of the housing. See Figure 6.

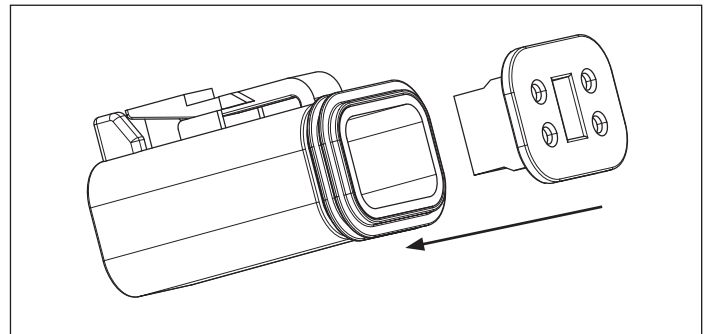


Figure 6 - Inserting the Locking Cap to the Housing

MOUNTING THE NEW ELECTRONIC CONTROL UNIT (ECU)

1. Mount the provided adapter bracket in the location where the original ECU was mounted. The studs should be in the forward location where the original harness entered the ECU. Leave the attaching bolts loose. See Figure 7.

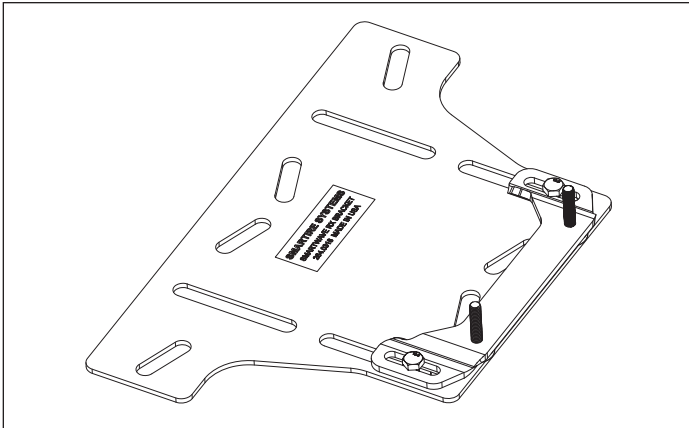


Figure 7 - Adapter Bracket

2. Mount the new ECU onto the studs of the bracket and secure the ECU with the supplied washers and nuts. Slide the bracket on the original plate to optimize the ECU location. Ensure the ECU is not in contact with any other components on the vehicle. Then, tighten the bolts between the adapter plate and the original bracket. See Figure 8.

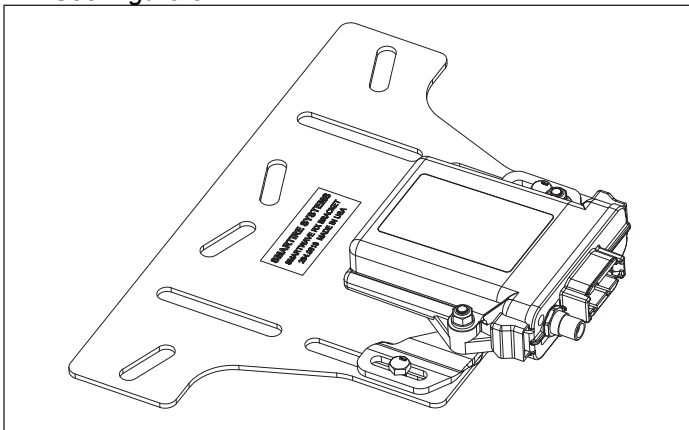


Figure 8 - Mounting the New ECU on the Bracket

3. Reattach the existing antenna connector lead to the new ECU.
4. Plug the provided patch cable into the front of the new ECU.

5. Plug the 4-pin Deutsch connector into the patch cable. See Figure 9.

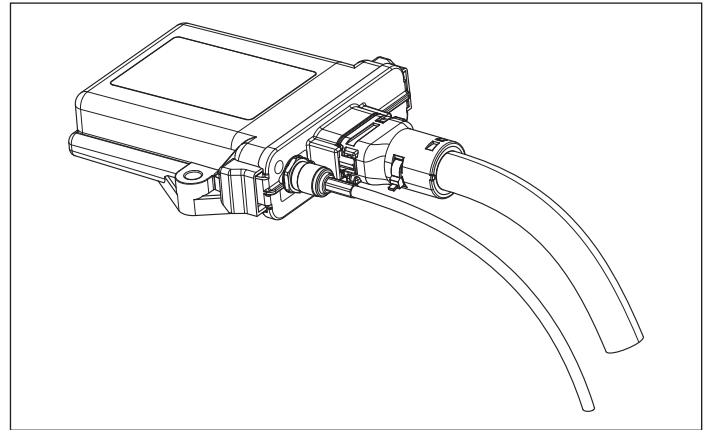


Figure 9 - Connecting the Patch Cable to the New ECU

RESTORING THE SMARTIRE® TIRE PRESSURE MONITORING SYSTEM (TPMS) BY BENDIX CVS CONFIGURATION

1. Connect to the Bendix® ACom® PRO™ diagnostic software.
2. Browse to the *Axle Setup* screen and configure the number of axles and tires as per the vehicle configuration.
 - If it **was possible to back up the previous TPMS settings**, start the same *TPMS Backup and Restore application*, but this time, press the *Load Settings button* and select the previously saved backup file.
 - If it **was not possible to back up the previous TPMS settings**, then each tire ID will need to be learned. Click on a *Tire Icon* in the ACom PRO diagnostic software and *press the Learn button*. Navigate to the tire to be learned and *use the Bendix® LF Hand Tool* to activate the sensor. The sensor should be learned into the ECU. Repeat these steps for all other tire locations. The other parameters, such as Cold Inflation Pressure (CIP) and warning levels, will have to be modified to suit the application if the default values provided are not appropriate.

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