



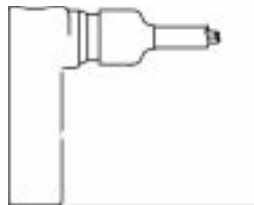
# Installation Instructions

## NOTCHED HUB WHEEL SPEED SENSOR

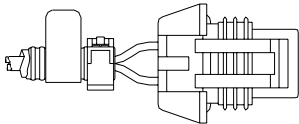
### Sensor Options



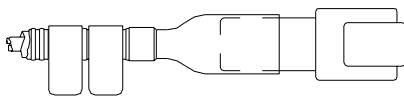
Straight



Right Angle

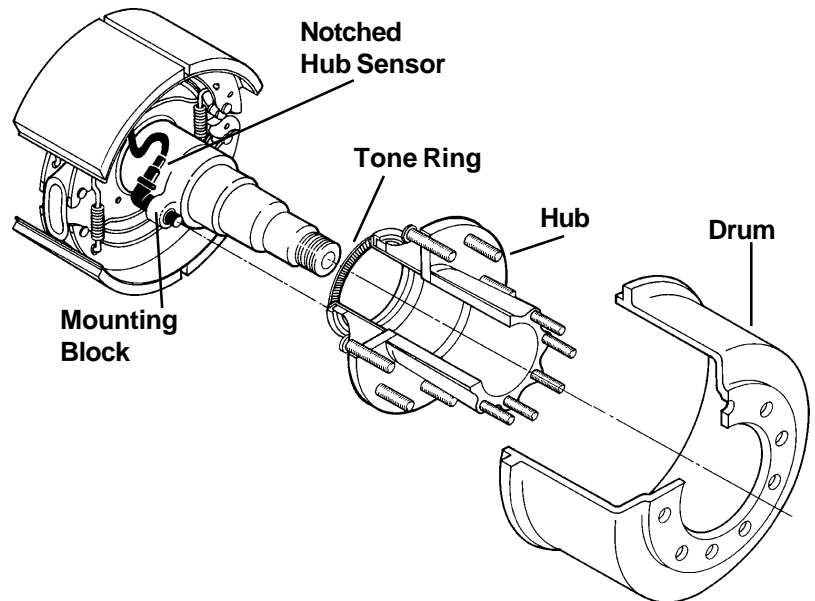


Packard 2 PIN Connector



Deutsch 2 PIN Connector

### Typical WS-20 Speed Sensor Installation



### **IMPORTANT! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:**

When working on or around a vehicle, the following general precautions should be observed at all times.

1. Park the vehicle on a level surface, apply the parking brakes, and always block the wheels.
2. Stop the engine when working around the vehicle.
3. If the vehicle is equipped with air brakes, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle.
4. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in manner that removes all electrical power from the vehicle.
5. When working in the engine compartment the engine should be shut off. 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.

6. Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.
7. Never exceed recommended pressures and always wear safety glasses.
8. 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.
9. Use only genuine Bendix replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, etc. should be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.
10. Components with stripped threads or damaged parts should be replaced rather than repaired. Repairs requiring machining or welding should not be attempted unless specifically approved and stated by the vehicle or component manufacturer.
11. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.

## PREVENTIVE MAINTENANCE

1. Every 3 months; 25,000 miles; 900 operating hours; or during the vehicle chassis lubrication interval, make the visual inspection noted in "SERVICE CHECKS" below.
2. Every 12 months; 100,000 miles; or 3600 operating hours, perform the OPERATIONAL TEST in this manual.

## SERVICE CHECKS

Check all wiring and connectors. Make sure connections are free from visible damage.

Examine the sensor. Make sure the sensor, mounting bracket, and foundation brake components are not damaged. Repair/replace as necessary.

## PREPARATION

Before servicing the sensor, which is located in a mounting block on the axle housing, remove as much contamination from the area as possible. Be careful not to damage the wiring or the connector.

## REMOVAL

1. Unplug the cable assembly connector from its lead. Lift the lock tab and pull on the connector until it disengages.
2. Gently pry the sensor and bushing from the mounting block.

## INSPECTION

Look for any visible damage to the sensor, cable assembly, connector, mounting block, and foundation brake. Repair or replace any damaged components. Make sure the block is securely attached to the axle housing.

## INSTALLATION

1. Install a new bushing fully into the block, with the retaining tabs toward the inside of the vehicle.
2. Gently push (DO NOT STRIKE) the sensor into the mounting block hole until it bottoms out on the face of the tone ring. Secure cable lead wire to the knuckle/axle housing 3-6 inches from the sensor.
3. Reconnect the connector to the sensor lead by plugging it into the appropriate socket on the pigtail harness and pushing until the lock tab snaps into place.
4. WHEEL BEARING ADJUSTMENT EFFECT: It is important that the wheel bearings be adjusted per the manufacturer's recommendations in order that the antilock function does not shut down as a result of excessive wheel end play.

## OPERATIONAL TEST

To test sensor operation, one of two tests can be done.

1. Drive the vehicle in a safe area to a minimum speed of 15 mph. Be sure to apply the vehicle brakes several times. Then stop the vehicle and check the LED display on the Bendix controller. If the sensor LED(s) ("SNS 1" or "SNS 2") are not illuminated, the sensor is installed properly.
2. Disconnect the connector from the sensor's socket or from the attached lead. Raise the vehicle wheel so it rotates easily. Connect a volt/ohm meter to the pins on the sensor or lead and spin the wheel (approximately 3-5 mph). Output voltage should read greater than .500 V.

If the sensor fails to operate as described, check the wiring from the controller to the sensor. Make sure all connectors are properly and tightly installed. Check for frayed or damaged wires. For additional troubleshooting information, see the troubleshooting procedure for the specific antilock system in use.

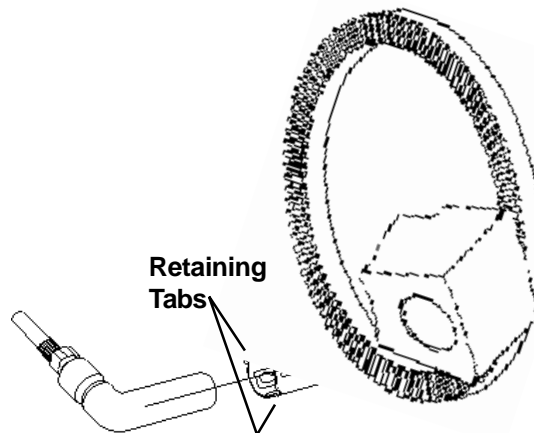


Figure 2

