

# PROXIMITY SENSOR INSTALLATION GUIDE

## OVERVIEW

### 3 TYPES OF SENSOR INSTALLATIONS

All three installations utilize the Electronic Wiring Diagram on Page 7 (FIGURE 6).  
**Vehicle Should Be Raised On A Secure Hoist System For Any Installation Work And All Work Should Be Performed By A Certified Mechanic.**

**DISCLAIMER:** M.H. Corbin, Inc. electronic interface adapters are sold with the understanding that they will be installed by a professional installer who has the required expertise and supporting documentation such as Mitchell or Motor electrical service manuals or equivalent. Any documentation or information provided by M.H. Corbin, Inc. is a general guideline for reference and is supplied without warranty or liability of any kind. Since the conditions or methods of installation, operation, use and maintenance of this equipment are beyond its' control, M.H. Corbin, Inc. does not assume responsibility and expressly disclaims liability of loss, damage, or expense of any kind arising out of or in any way connected with any installation, operation, or maintenance of this sensor. The user who attempts to install the electronic interface adapter assumes all responsibility for problems caused by incorrect or improper installation.

### Installation 1

**TIE ROD END MOUNT - REQUIRES MOUNTING WHEEL TARGETS!** (Rear-wheel drive vehicles only)

\* The TIR ROD END INSTALLATION may not be suitable for all vehicles (such as certain late model GM cars). The sensor may come in contact with the sway bar when steering is turned and the suspension is compressed. This causes the sensor to be forced into the targets mounted on the wheel. This condition should be checked for all installations.

### Installation 2

**BRAKE CALIPER MOUNT - REQUIRES MOUNTING WHEEL TARGETS!**

### Installation 3

**TRANSMISSION HOUSING MOUNT -** May be used on full-sized or larger pickup trucks. The proximity sensor counts pulses from detecting knuckles on the drive shaft.

## MOUNTING WHEEL TARGETS

### **APPLIES TO TIE ROD END and BRAKE CALIPER INSTALLATIONS ONLY!**

Ten (10) stainless steel clamp-on targets are provided as Part No. 70004030; however, the maximum you will use is eight (8). The remaining parts are extras and should be stored in the vehicle as spares.

**PRIOR TO INSTALLATION, CHECK THE INSIDE RIM OF WHEEL FOR WHEEL WEIGHTS. IF WHEEL WEIGHTS ARE PRESENT, HAVE THE TIRE AND WHEEL RE-BALANCED WITH THE WHEEL WEIGHTS PLACED ON THE OUTSIDE OF THE WHEEL. WEIGHTS ON THE INSIDE COULD INTERFERE WITH PROPER OPERATION OF THE PROXIMITY SENSOR.**

**STEP 1** - Remove left front wheel. Lay wheel with outside face down. (Targets will be mounted inside.)

**STEP 2** - If vehicle does not have weights, move to STEP 3.

**STEP 3** - Thoroughly clean the inside rim with a degreasing solvent.

**STEP 4** - After the rim is clean, install targets as indicated in **FIGURE 1**.

**FIGURE 2:** Install the 1st target using the STEEL CLAMP portion so the clamp fits between the tire and lip of the wheel rim. The steel clamp should hold firmly to the wheel similar to a conventional wheel weight.

**HAMMER ONLY ON THE OUTSIDE STEEL PORTION (POINT "B") OF THE TARGET!**

Hammering on POINT "A" could cause damage to the target or non-uniformity in relation to sensor alignment.

To install the second target, sight straight across the wheel from the first target and install as described before. Halfway between #1 and #2 targets, place #3 target. Sight straight across from #3, place #4 target, etc., until all eight (8) targets are installed. An equal distance is very important to the accuracy of the instrument.

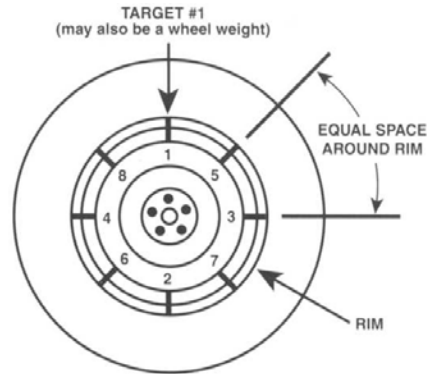


FIGURE 1  
TARGET PLACEMENT

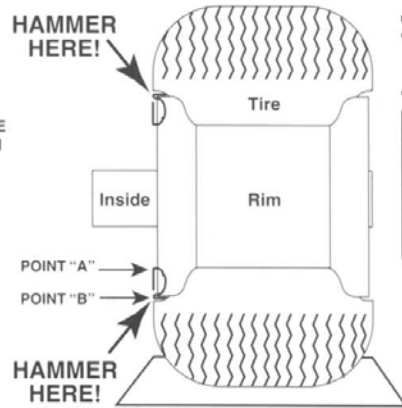
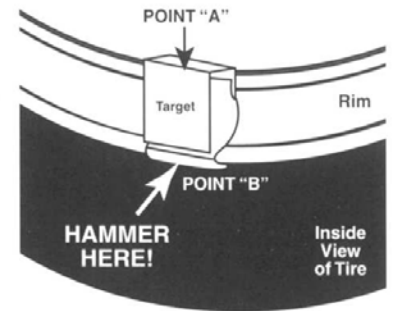


FIGURE 2  
HAMMERING LOCATION



**NOTE:** The stainless steel portion of the target should be flush with the clip. If there is separation from POINT "B", a light tapping at POINT "A" will ensure a flush & even target.

## INSTALLATION 1: TIE ROD END MOUNT

**STEP 1** - Follow all steps for **MOUNTING WHEEL TARGETS** on Page 1 of this guide.

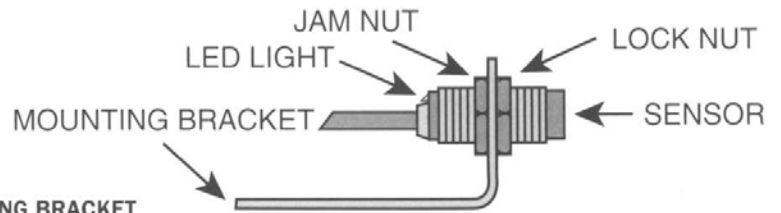
**STEP 2** - Measure the distance from the tie rod end buckle to the targets. This will give you an idea of how to fashion the bracket for correct scanning of the targets. If necessary, you may want to remove the wheel to aid in the installation of the sensor.

**STEP 3** - Mount the sensor on the bracket near one end **FIGURE 3a** and **FIGURE 3b**. The other end will be bolted to the tie rod end using the original nut (a new cotter pin is provided). The distance from the tie rod end to the wheel differs from one vehicle to another. You may have to bend the bracket or cut some off. **NOTE:** On the cable end of the sensor is an LED light - this side of the sensor should face forward for easy viewing when aligning or checking proper operation. If the wheel has been removed, remount the wheel and be sure the face of the sensor is scanning 1/8 inch away from each target.

**STEP 4** - Route the sensor wire through the engine compartment to the terminal block. Use cable ties to secure excess cable from hanging freely. Ensure the cable does not become tangled in the suspension or steering.

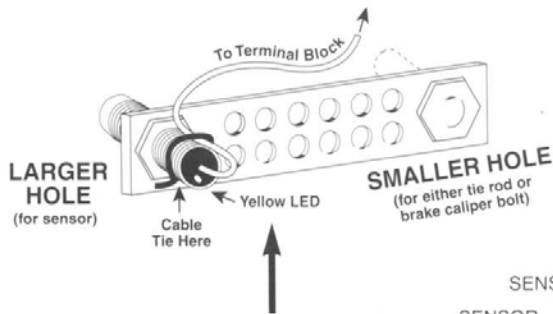
**STEP 5 - IMPORTANT:** After the wheel is securely mounted, carefully inspect the proper rotation of the wheel and align sensor accordingly so that each target passes the face of the sensor by approximately 1/8 inch. Also, inspect brake caliper to ensure targets have adequate clearance. Examine the installation to ensure that no part of the steering or suspension comes into contact with the sensor at both **FULL TURNS** of the steering wheel.

**NOTE:** Verify sensor gap is correct once vehicle is removed from hoist system.

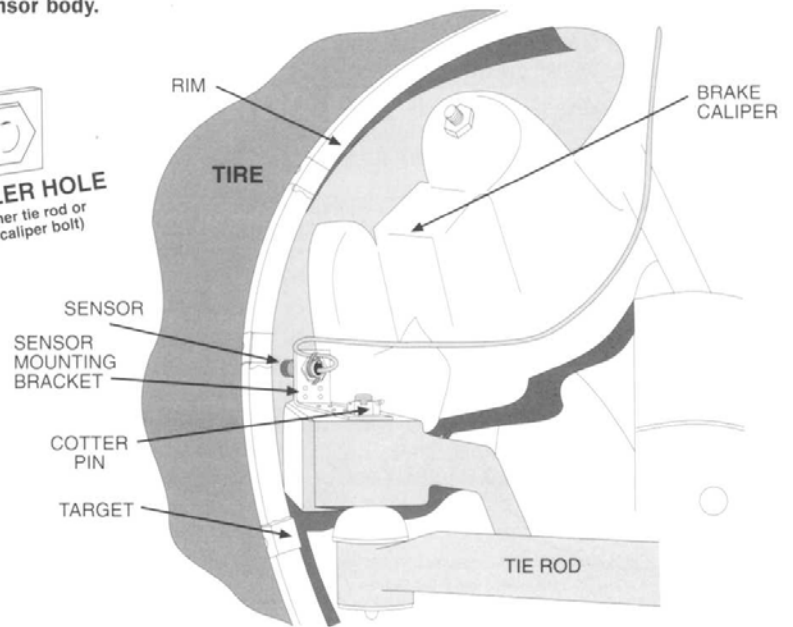


**FIGURE 3a**  
**PROXIMITY SENSOR ATTACHED TO MOUNTING BRACKET**

Cable tie the sensor cable to proximity sensor body.



**SENSOR/TARGET INDICATOR**  
After power is supplied to the sensor, a yellow LED on the rear on the sensor will light as the sensor passes over the target. If it does not light, the sensor is either too far away or it may be not be functioning (check power).



**FIGURE 3b**  
**PROXIMITY SENSOR ATTACHED TO THE TIE ROD**

## INSTALLATION 2: BRAKE CALIPER MOUNT

**This installation will require a longer hub assembly bolt as noted below.**

**STEP 1** - Follow all steps for **MOUNTING WHEEL TARGETS** on Page 1 of this guide.

**STEP 2** - The disk brake pads and caliper must first be removed by removing bolts and lifting the pads out. The caliper should be supported with a wire and **NOT** be allowed to hang by the brake hose.

**STEP 3** - Remove the disk rotor by first removing the wheel bearing dust cover, cotter key, retaining nut and wheel bearings. This permits the removal of the disk rotor and

hub assembly which exposes the bolt (5/16-20 x 3/4") that you are seeking. It is located just below the brake caliper on your right and is used to fasten the cover to the assembly.

**STEP 4** - This bolt (5/16-20 x 3/4") should be removed and replaced with a longer bolt (5/16-20 x 1-1/4"), complete with nut and lock washer, so that approximately 1/2" protrudes on the engine side of the assembly. This stud now provides the mounting point for the sensor bracket. After the bolt is secured, the bracket and sensor should be securely mounted using the new nut and lock washer.

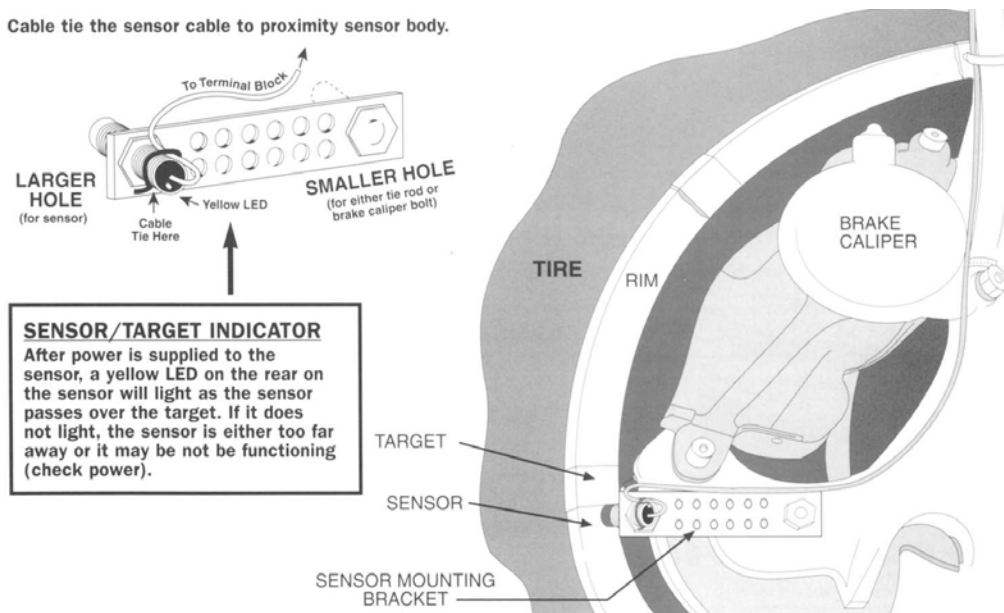
**STEP 5** - As illustrated in **FIGURE 4**, the bracket will most likely need to be bent at an angle for proper sensor alignment. Some trial and error will be required to properly position the sensor squarely in front of the targets. You should always check this alignment after any work is done to the assembly.

**STEP 6** - Examine the installation to ensure that no part of the suspension comes into contact with the sensor at both FULL TURNS stops of the steering travel.

**STEP 7** - Route the sensor wire through the engine compartment. Use cable ties to secure excess cable from hanging freely. Ensure the routed cable does not become tangled in the suspension or steering.

**STEP 8** - Reassembly of the unit can now be done by reversing the disassembly sequence.

**NOTE:** Verify sensor gap is correct once vehicle is removed from hoist system.

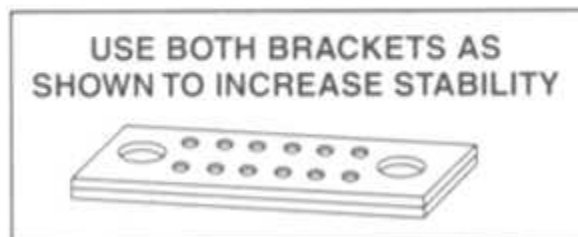
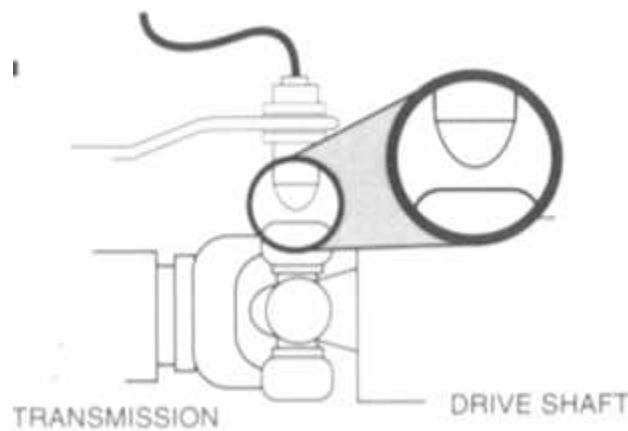


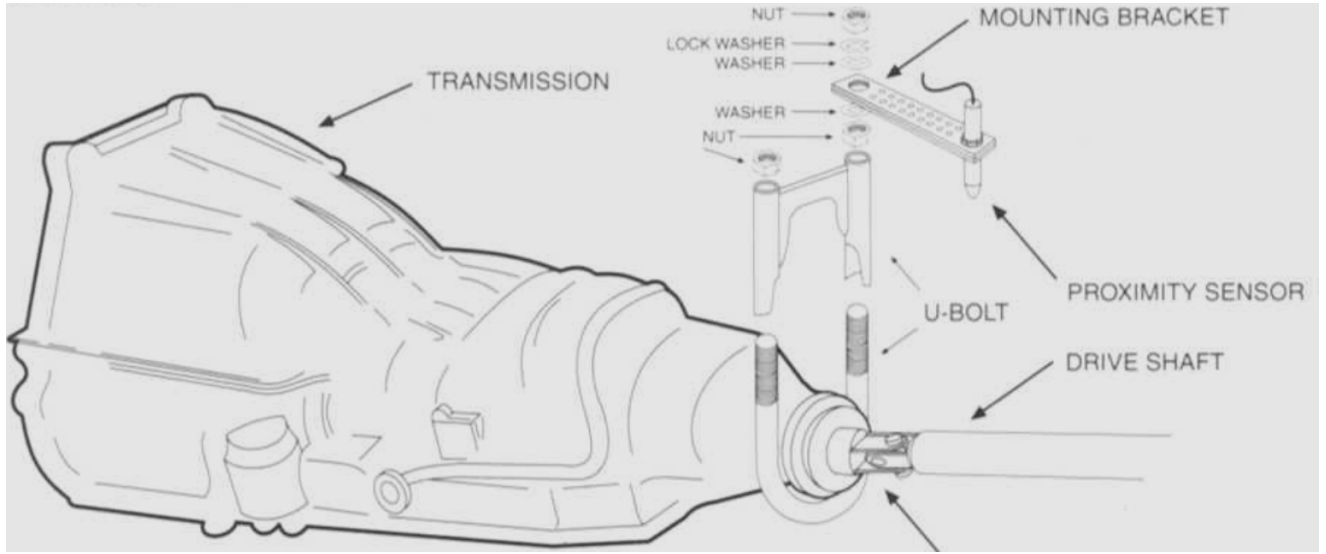
**FIGURE 4**  
**PROXIMITY SENSOR ATTACHED TO BRAKE CALIPER**

## INSTALLATION 3: TRANSMISSION HOUSING MOUNT

### PROXIMITY SENSOR COUNTS PULSES FROM DETECTING KNUCKLES ON THE DRIVE SHAFT

- STEP 1** - Mount the U-bolt and proximity sensor mounting bracket directly to the transmission housing **FIGURE 5**. (Not to the frame or floor of the vehicle) This will help to maintain a constant gap between the universal joint and the proximity sensor.
- STEP 2** - Adjust the gap between the proximity sensor and the outer circumference of the universal joint to 1/8" (3.2mm).
- STEP 3** - Route the sensor wire to the engine compartment. Use cable ties to secure excess cable from hanging freely. Ensure the routed cable does not become tangled in the suspension or steering.

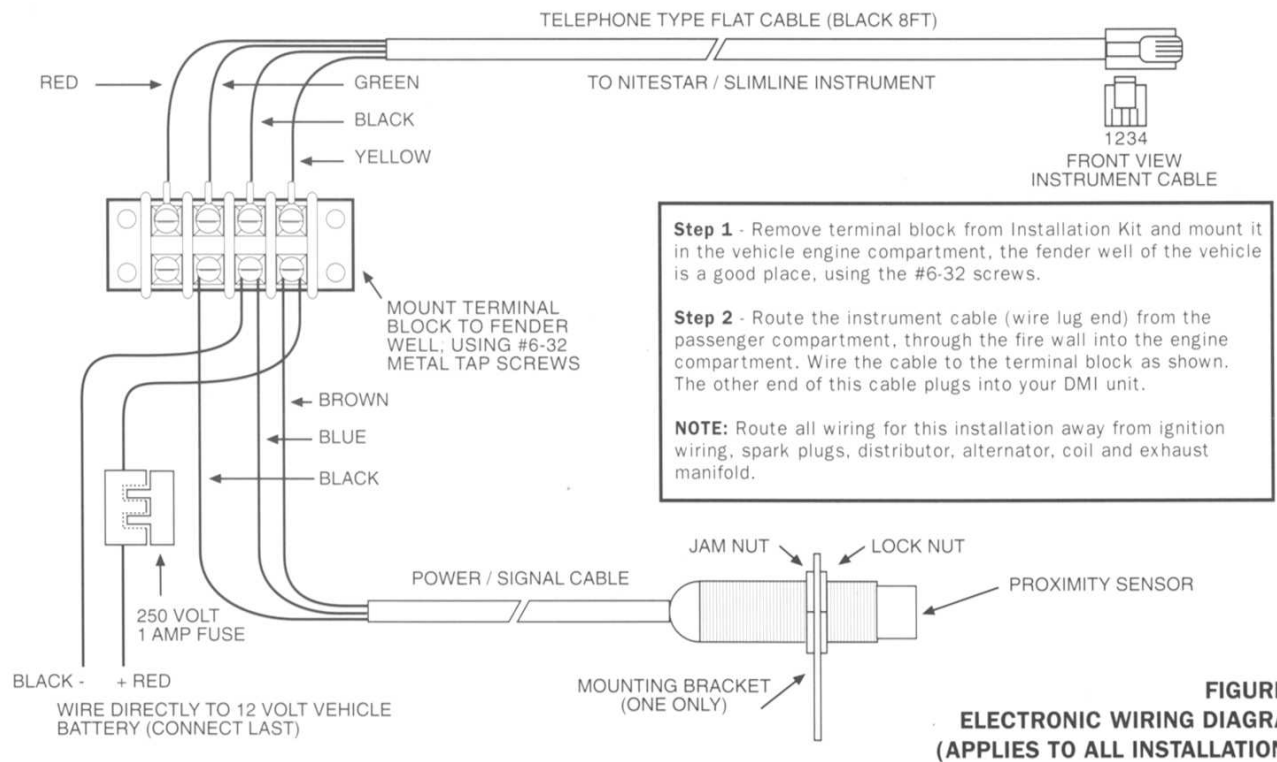




UNIVERSAL JOINT

**FIGURE 5**

**MOUNTING BRACKET TO TRANSMISSION HOUSING**



**FIGURE 6**  
**ELECTRONIC WIRING DIAGRAM**  
**(APPLIES TO ALL INSTALLATIONS)**

## **TROUBLESHOOTING... ARE YOU RECEIVING AN AEC (Auto Error Correction) MESSAGE ON YOUR NITESTAR**

There is a possibility that the sensor is vibrating or the gap between the sensor and the target is too far. Make certain the sensor is secure and the gap is 1/8".

**TIRE REMOVAL:** If it becomes necessary to remove the tire from the rim, the targets should be CAREFULLY removed from the wheel prior to tire removal. Before re-installing the targets on wheel, inspect the spring steel clamp portion of the target. Adjust the clamp with pliers if it appears that it was bent excessively during removal. Squeezing the clamp together will ensure a more positive fit.

### **Technical Support and Product Returns**

For technical questions or product returns, contact M.H. Corbin, Inc. at 1-877-257-7755. Provide the following supporting information and request either service or product return:

- Name and model of the product in question
- Serial number of the product
- Name and location of the installation site
- Name and contact information of a technically competent person who can provide further information on the problem.
- Make, model, and year of vehicle