



## Installation Guide

Please call technical support at 800-966-9578 with any questions.

Installation Tools Required; Crimping tool, wire stripper, razor knife, computer-safe 12 volt test light, portable drill and bits, screwdrivers, flashlight, and electrical tape.

## QUICK START GUIDE

### Step 1

**Measure the distance between wheel hub and rim dust cover.**

**Measure 1 Front wheel and 1 Rear wheel.**

**There must be a MINIMUM DISTANCE of 1" between the Wheel Hub and the Rim Dust Cover.**

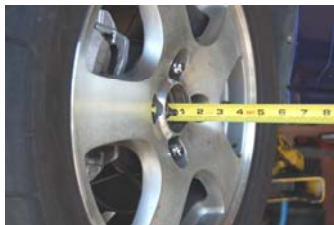
**The Small Sensor can be trimmed to accommodate a MINIMUM DISTANCE of 3/4" between the Wheel Hub and the Rim Dust Cover.**

**The MAXIMUM DISTANCE is 3 7/8" between the Wheel Hub and the Rim Dust Cover.**

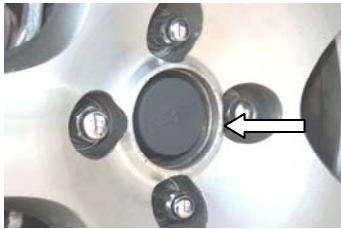
**Large Sensors are mounted on the Wheel Hub – Small Sensors are mounted on the Rim Dust Cover.**

**Large Sensors are marked - LF, LR, RF, RR - and must be installed on corresponding Wheel Hub.**

If rim style is similar to the one below (generally flat dust covers), then pull dust cover and measure.



If measurement is 1", mount one Large Sensor to Wheel Hub and one Small Sensor to Dust Cover with epoxy. See page 6. If longer than 1", see page 3. If 3/4", see page 6.



If rim style is similar to the one below or the distance is greater than 1", then pull dust cover and measure the distance using the following method.



Measure distance between wheel hub and rim dust cover by rolling the enclosed clay. Mount one Large Sensor to wheel hub and the rolled clay to the inside of the rim dust cover. Mount the dust cover back onto the rim, then remove and measure the distance. Re-roll the clay and measure the rear wheel hub and dust cover distance. See page 7.



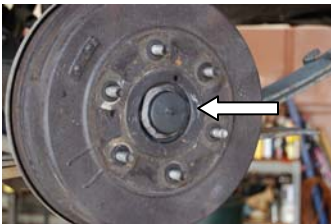
## Step 2

If required, cut extender to required length. See page 7.



### Step 3

**Mount remaining sensors. Large sensors on wheel hub. Small sensor (attached to extender if required) on wheel dust cover using epoxy. Be sure to read mixing instructions for epoxy. See page 10.**



## Step 4

Wire in the Control Module. See page 11.



## Step 5

Install the Dash Monitor Display. See page 13.



# INSTALLATION

## Step 1

### Measure Distance Between The Wheel Hub and the Rim Dust Cover – Measure 1 Front and 1 Rear

#### If the distance is 1”

- Remove rim from hub.
- Peel tape covering off of the tape on rear of the Large Sensor.
- Mount the Large Sensor onto the wheel hub – be sure to clean hub first.
- Apply a bead of epoxy around the Large Sensor.
- Peel tape covering off of the tape on rear of the Small Sensor.
- Mount the Small Sensor onto the Dust Cover – be sure to clean dust cover first.
- Apply a bead of epoxy around the Small Sensor.

#### If the distance is 3/4”

- Trim the shoulder of the small sensor flush.



- Add double sided tape disc.
- Repeat above steps

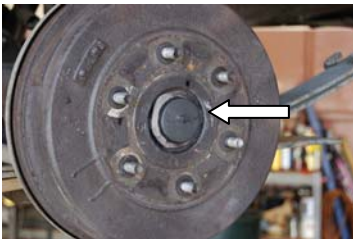
## Step 2

**If the distance is greater than 1” and not greater than 3 7/8”**

- Remove rim from hub.
- Peel tape covering off of the tape on rear of the Large Sensor.
- Mount the Large Sensor onto the wheel hub – be sure to clean hub first.
- Apply a bead of epoxy around the Large Sensor.
- Take the clay brick and roll it.
- Position the rolled clay the inside of the Rim dust cover.
- With the rolled clay stuck to the dust cover, reinstall the dust cover on the rim.
- Remove dust cover and set the compressed rolled clay on the bench.
- Measure the height of the compressed rolled clay.
- Attach the Small Sensor to the open end of the extender tubes.
- Set one of the extender tubes with the Small Sensor next to the collapsed rolled clay.
- Measure and/or mark distance on extender tube.
- Remove the Small Sensor from the extender tube and trim this end of the extender tube to the length obtained from measuring the collapsed rolled clay.

- On the trimmed end of the extender tube, re-fit the Small Sensor in place.
- Remove tape covering from the other end of the extender tube and mount to the inside of the dust cover.
- Apply a bead of epoxy around the end of the extender tube.
- Re-install the dust cover to the rim.
- **Be sure to mount the Small Sensor towards the Wheel Hub.**

Measure the front and rear wheels in this manner.



Mount the Large Sensor onto the wheel hub – be sure to clean hub first. And apply a bead of epoxy around the Large Sensor.



Take the clay brick and roll it. Position the rolled clay on the inside of the Rim dust cover. With the rolled clay stuck to the dust cover, reinstall the dust cover on the rim.



Remove dust cover and set the compressed rolled clay on the bench.

Measure the height of the compressed rolled clay.



Attach the Small Sensor to the open end of the extender tubes. Set one of the extender tubes with the Small Sensor next to the collapsed rolled clay. Measure and/or mark distance on tube.



Remove the Small Sensor from the extender tube and trim this end of the extender tube to the length obtained from measuring the collapsed rolled clay. On the trimmed end of the extender tube, re-fit the Small Sensor in place.



Remove tape covering from the other end of the extender tube and mount to the inside of the dust cover. Apply a bead of epoxy around the end of the extender tube.



Re-install the dust cover to the rim.  
**Be sure to mount the Small Sensor towards the Wheel Hub.**

### Step 3

#### Mount The Sensors

**Large Sensor On Wheel HUB.**

**Small Sensor On Rim Dust Cover or On Extender Tube If Required.**

**Large Sensors are marked - LF, LR, RF, RR - and must be installed on corresponding Wheel Hub.**

- Mix the epoxy.
- Mount Large Sensor on wheel hub and apply epoxy as in Step 1.
- Mount Small Sensor in the center on the inside of the Wheel Dust cover by removing the tape covering and applying a bead of epoxy around the Small Sensor.



Mount Large Sensor on wheel hub and apply epoxy.



Mount Small Sensor in the center on the inside of the Wheel Dust cover by removing the tape covering and applying a bead of epoxy around the Small Sensor.



Re-install the dust cover to the rim.

## Step 4

### Wire the System Control Module

In most cases, the 3 wires needed to install Wheel Safe will be located in the wiring harness coming from the steering column. Color codes and locations can be obtained by calling technical support, consulting the vehicle's wiring diagram, or 3<sup>rd</sup> party wiring references such as Wire Magic.



- 1 – RED to Constant 12 volts
- 2 – BLACK to Ground
- 3 – BLUE to Ignition 12 Volts Key ON and CRANK Positions
- 4 – GREEN to Horn

Optional Features Wiring Installation.

- 5 – BROWN – Negative output for parking lights. See page 18.

#### A. Connect the Constant Power Red Wire

Locate a constant +12 volt wire that is “hot” in all key positions (ACCESSORY, OFF, ON and CRANKING). Many times these are a heavy gauge red, yellow or white wire but always test to confirm. Connect and insulate Red wire to this wire.

## NOTE

On newer vehicles wires from ignition switch may be a smaller gauge. Use a heavy gauge wire as an alternative power source. Connect and insulate Red wire to this wire.

### B. Connect the Harness Ground **Black** Wire

Connect the harness wire to a solid metallic ground point using an existing screw or the self-tapping screw provided. **Check that the ground that you select is good. A good ground connection will measure less than 0.1 Ohm resistance.**

## NOTE

**Be sure to check resistance of the Ground connection.**

### C. Connect the Ignition **Blue** Wire

Locate a +12 volt wire that is “cold” in the key OFF position but “hot” in both ON and CRANKING positions. Connect and insulate the blue wire to this wire.

### D. Connect the Horn **Green** Wire

Locate the **negative polarity** horn wire. A negative horn wire will sound the horn when the wire is probed with a securely grounded test light. Connect and insulate the Green wire to this wire.

Note; For older vehicles with high-current horns or no OEM horn relay, and Positive Polarity horns, a relay is required. See below. See pages 16 and 17 positive polarity horns.

## Step 5

### Mount the Dash Monitor Display

This may be installed in any visible location on the dash or panel. It is preferable to locate a plastic blank for installing the Dash Monitor Display. This should be decided with the vehicle owner's input.

- Locate plastic blank
- Drill a 1/2" hole for the in a location that is accessible from the back.
- Insert the 11 Pin wire connector through the hole first and route the wire to the back of the System Control Module.
- Clean area with alcohol wipe.
- Remove tape backing and push Dash Monitor into place.
- Plug the connector into the 11 pin adapter on the side of the System Control Module.  
Note BLACK wire is to the left.



It is preferable to locate a plastic blank for installing the Dash Monitor Display.  
Drill a 1/2" hole.



Insert the 11 Pin wire connector through the hole **first**.



Remove tape backing and push Dash Monitor into place.



Route the 11 Pin wire harness to the System Control Module. Plug the connector into the 11 pin adapter on the side of the System Control Module.

Note BLACK wire is to the left.

## **Step 6**

### **Customer Orientation**

Explain system operation to customer by reviewing the Operating Manual. Give the Operating Manual to customer.

### **Miscellaneous Technical Tips**

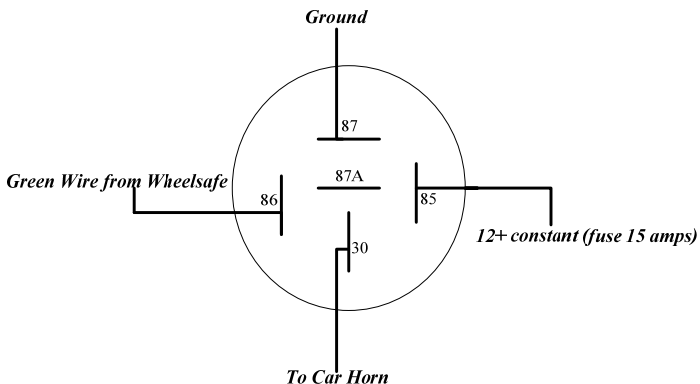
- Inspect the vehicle for any pre-existing electrical defects, (such as burnt wiring, loose connections, etc.) Problems must be repaired before installation. Dealers: notify your customer immediately of any existing defects.
- Be sure to make all system connections before powering up the system.

- Run wires along the factory looms and cables whenever possible. This gives your installation a “factory” appearance.
- Secure wires to prevent damage from moving parts and in a way that will prevent a change in position.
- A digital voltmeter or high impedance logic probe is the safest way to test vehicle circuits to avoid damage to sensitive vehicle computers or passive restraint systems such as airbags.
- Test each wire connection and circuit before moving to the next step.
- Use caution when locating wires. Never tap into wires coming from a “black box.” This may be a sensitive computerized device – such as an engine computer.

## Horn Relay Wiring Installation

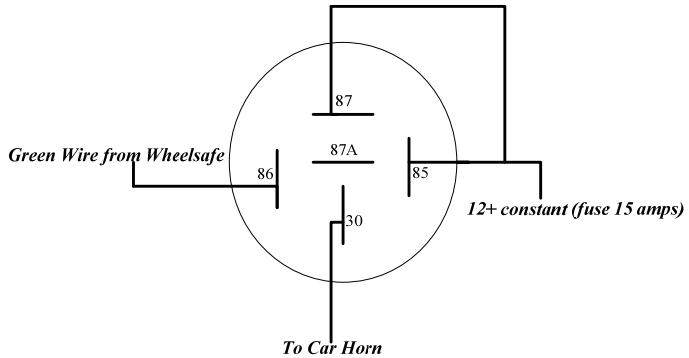
### **NEGATIVE HORN RELAY WIRING**

#### *Negative Horn Relay Wiring*



# POSITIVE HORN RELAY WIRING

## *Positive Horn Relay Wiring*



## Optional Features Wiring Installation

### **Connecting the Vehicle Parking Lights – Optional**

#### *Parking Lights Relay Wiring*

