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### Installation Guide: 295HF100 Siren Amplifier

**DANGER!** Sirens produces extremely loud emergency warning tones! Exposure to these tones without proper and adequate hearing protection, could cause ear damage and/or hearing loss! The Occupational Safety & Health Administration ([www.osha.gov](http://www.osha.gov)) provides information necessary to determine safe exposure times in Occupational Noise Exposure Section 1910.95. Until you have determined the safe exposure times for your specific application, operators and anyone else in the immediate vicinity should be required to wear an approved hearing protection device. **FAILURE TO FOLLOW THIS RECOMMENDATION COULD CAUSE HEARING LOSS!**

#### Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- If mounting this product requires drilling holes, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro™, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.
- Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owners manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.
- For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the **NEGATIVE (-)** battery post.
- If this product uses a remote device to activate or control this product, make sure this control is located in an area that allows both the vehicle and the control to be operated safely in any driving condition. **DO NOT ATTEMPT TO ACTIVATE OR CONTROL THIS DEVICE IN A HAZARDOUS DRIVING SITUATION.**
- It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

**ACTIVATION OF THIS SIREN MAY DAMAGE UNPROTECTED EARS!**



#### CAUTION

Loud siren noise can cause hearing damage and/or loss. Refer to OSHA Section 1910.95 prior to putting ANY siren into service!

**For warranty information regarding this product, visit [www.whelen.com/warranty](http://www.whelen.com/warranty)**

**Installation:**

The 295HF100, although technologically advanced, is simple to install. An aftermarket center console is recommended for the mounting location of the 295HF100. This not only allows the driver to reach the controls easily, but also keeps the unit safely out of the path of the vehicle's SRS air-bag. Follow the console manufacturer's instructions for mounting information. If a console-type mount is not possible, the 295HF100 includes a bail strap mounting kit for over- or under-dash mounting.

*The following steps will guide you through the installation process:*

**Connecting the Power & Ground Wires:**

**RED (Power) and BLACK (Ground)**

1. Remove the driver's side front seat.
2. Remove the front, driver's side rocker sill plate and kick panel.
3. Fold back the floor covering so that access is gained to the factory wire harness routed under the driver's seat .
4. Insert the wiring harness into it's port as shown in Fig. 1.
5. Extend the 2 RED and 2 BLACK wires toward the sill plate. Follow the same path as the factory wire harness.

**WARNING: All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

6. Continue to follow the factory harness through the firewall. To pass the RED and BLACK wires through, it may be necessary to drill a hole in the firewall. If so, be sure that there are no components that will be damaged. After the hole is drilled, insert a grommet to protect the wires.
7. Route the RED and BLACK wires along the factory harness towards the battery.
8. Install 15 amp fuse block (user supplied) on end of RED wire.

**Note: Remove the fuse from the fuse block before connecting any wires to the battery!**

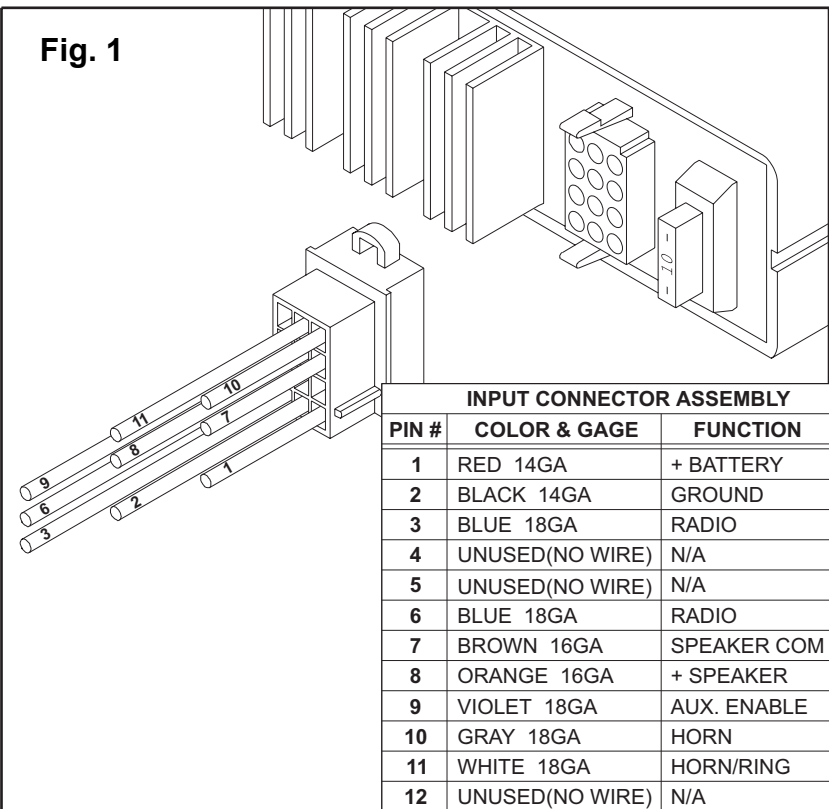
9. Connect the fuse block wire to the POSITIVE (+) terminal on the battery. There must not be more than two (2) feet of wire between the fuse block and the battery. As the wire between the fuse and the battery is "unprotected", do not allow this wire to come in contact with any other wires!
10. Connect the BLACK wire to the factory chassis ground, adjacent to the battery.

**READ BEFORE INSTALLING!!!**

*Do not install this product or route any wires in the deployment area of your airbag. Equipment mounted or located in the airbag deployment area will damage or reduce the effectiveness of the airbag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owners manual for the air bag deployment area.*

*The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle. Whelen Engineering Company assumes no liability or responsibility for determining individual applications or exact installation location criteria.*

**Fig. 1**



### Connecting the Speaker Wires (Orange & Brown)

1. Route the ORANGE and BROWN wires toward the vehicle's siren speakers.
2. Connect the ORANGE wire to the POSITIVE speaker connection on speaker #1.
3. Connect the BROWN wire to the NEGATIVE speaker connection on speaker #1.

### Connecting the Horn Relay Wires (White & Grey)

1. Route the WHITE and GREY wires along the factory wire harness and through the firewall at the same point as the RED and BLACK wires.
2. Locate your vehicle's horn relay and route the WHITE and GREY wires to this. If possible, follow the factory wire harness to this relay.
3. Locate the wire that connects the vehicle horn to the horn relay.
4. Cut this wire.
5. Connect the WHITE wire to the wire coming from the horn relay.
6. Connect the GREY wire to the wire coming from the horn.

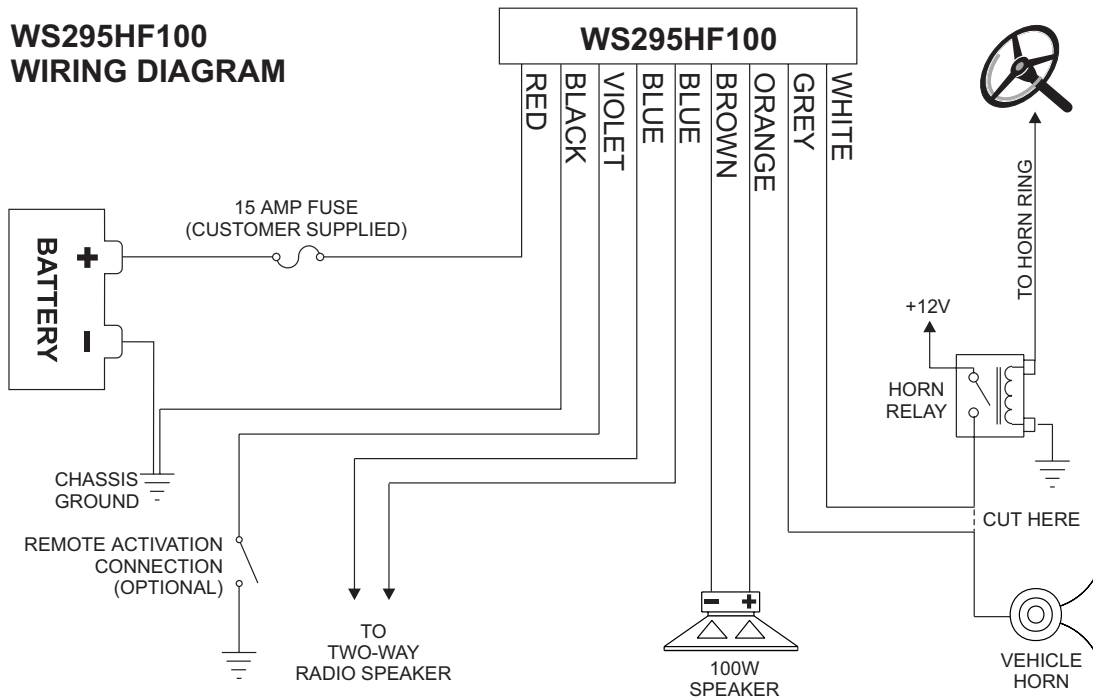
**Note:** The two (2) remaining BLUE wires are used to connect your two-way radio's external speaker to the 295HF100-series siren for radio re-broadcast. This is an optional connection and does not effect the other operations of the 295HF100-series siren.

**Note:** Radio re-broadcast will **NOT** work with amplified remote speakers! If your remote speaker is amplified (I.E.: contains a power amp circuit in the speaker assembly), do not enable the radio re-broadcast feature.

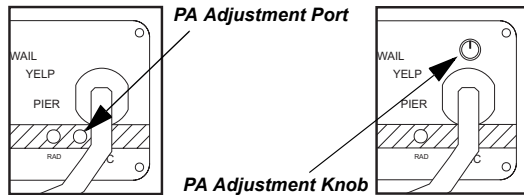
1. Locate the two wires that connect the external speaker to the two-way radio.
2. Cut one of these wires and splice one of the BLUE wires into this circuit.
3. Cut the remaining speaker wire and splice the remaining BLUE wire into this circuit.

### Connecting the 295HF100 to a Remote Control-Head (Optional):

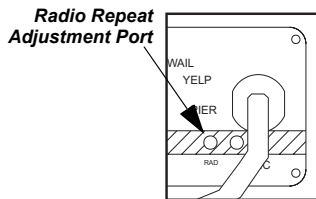
The 295HF100 may be connected to an existing control-head, such as the Whelen PCC-S9N or equivalent. This is an optional connection that enables the WAIL tone to be activated through the use of a PCC-S9N button or switch. If this connection is not chosen, cut the VIOLET wire and cap the remaining stub to prevent accidental grounding of the wire.



**To Adjust The PA and Radio Repeat Levels:** Before initial use, the PA and Radio Repeat output volume must be adjusted to satisfactory operating levels. All 295HF100-series sirens utilize an internal potentiometer to control Radio Repeat volume levels (see the "Radio Repeat Volume" section for adjustment information).



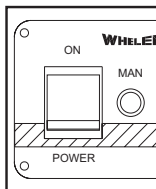
**PA Volume -** Public Address (PA) volume adjustments are made with either an internal potentiometer or with a volume knob, depending upon the model in question (see the "PA Volume" section for adjustment information).



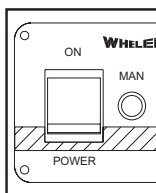
**Radio Repeat Volume -** If your model uses a potentiometer, locate the PA adjustment port as shown. With the vehicle in an enclosed area, turn the Rotary Knob to PA and speak into the microphone. While speaking, insert the screwdriver and turn in a clockwise direction to increase the volume. Continue to increase the PA volume until audio feedback occurs. Turn the screwdriver in a counter clockwise direction to eliminate feedback and set the PA level to maximum volume. For models with a PA Volume knob, follow the same procedures as above, except that a screwdriver is not used. Simply make the adjustments using the knob.

Locate the Radio Repeat adjustment port (potentiometer) as shown. Set the volume level of the vehicle's two-way radio to its normal operating volume. Turn the Rotary Knob to RAD to activate Radio Repeat. Insert the screwdriver in the Radio Repeat adjustment port and turn in a clockwise direction to increase the volume to its maximum volume.

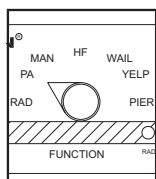
## Operating the 295HF100 Controls



**Power Switch -** This switch has two positions: Down (295HF100 - Off) and Up (295HF100 - On). When this switch is in the Off position, the WS295HF100 will not function. When the switch is in the On position the siren is functional and may be activated at the operator's discretion. *NOTE: If the 295HF100 is connected to the vehicle's horn ring circuit, the vehicle horn is disabled when the 295HF100 power switch is in the ON position.*



**MAN Button -** The Manual button generates a variety of tones, depending on what position the Rotary knob is in. For further explanation of this button's function, refer to the Rotary knob section of this manual.



**Rotary Switch -** The Rotary Knob controls the siren and PA (Public Address) functions of the 295HF100-series siren. There are 7 positions that may be selected. Each position and its function is outlined on the next page:

**RAD (Radio Repeat)** - When the rotary knob is in the RAD position, any signal that is received by the vehicle's two-way radio will be simultaneously broadcast over the vehicle's loudspeaker (the 295HF100 must be connected to the two-way radio as outlined in this manual). This function overrides any other siren function.

**PA (Public Address)** - When the rotary knob is in the PA position, public address functions are operational. Messages may be broadcast over the vehicle's loudspeaker when the 295HF100 microphone is in use. If the Manual button is pressed while the rotary knob is in this position, an "air horn" siren tone will be generated by your vehicle's loudspeaker. This tone is generated until the Manual button is released. The "air horn" may also be generated by pressing the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the 295HF100).

**MAN (Manual Siren)** - When the rotary knob is in the MAN position, pressing the Manual button generates a tone that rises in pitch to a pre-set level. This tone is generated for as long as the Manual button is pressed. The same tone may be generated by pressing the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the 295HF100). Please note that the 295HF100 microphone will override the siren function.

**HF (Hands Free Operation)** - When the rotary knob is in the HF position, the siren functions of the 295HF100 are placed in a stand-by mode. Siren tones are activated by a single "tap" on the MAN button or a single "tap" on the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the 295HF100). The first "tap" produces a "Wail" tone (a steady, rise and fall tone). A second "tap" produces a "Yelp" tone (a fast, rise and fall tone). A third "tap" produces a "Piercer™" tone (an extremely fast, rise and fall tone). The next "tap" returns the siren to a "Wail" tone and the cycle repeats itself. Two quick, successive "taps" will stop the siren.

**WAIL (Wail Tone)** - When the rotary knob is in the WAIL position, a steady, rise and fall tone is produced. A single "tap" on the MAN button or a single "tap" on the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the 295HF100), changes the siren tone to a "Yelp" pattern (a fast, rise and fall tone). A second "tap", and the siren returns to a "Wail" tone. Please note that the 295HF100 microphone will override the siren function.

**YELP (Yelp Tone)** - When the rotary knob is in the YELP position, a fast, rise and fall tone is produced. Pressing the MAN button or the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the 295HF100), changes the siren tone to a simulated air horn tone for as long as the button is pressed. Releasing the button causes the siren to return to the Yelp tone. Please note that the 295HF100 microphone will override the siren function.

**PIER (Piercer™ Tone)** - (NOTE: Some models may have a Hi/Lo tone instead of the Piercer™ tone) When the rotary knob is in the PIER/Hi-Lo position, an extremely fast, rise and fall tone (alternating high and low tones for Hi-Lo) is produced. Pressing the MAN button or a single "tap" on the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the siren), changes the siren tone to a simulated air horn tone for as long as the button is pressed. Releasing the button causes the siren to return to the "Piercer™" (Hi-Lo) tone. Please note that the microphone will override the siren function.

<b>ACTIVATION OF THIS SIREN MAY DAMAGE UNPROTECTED EARS!</b>	
 <b>Wear Protection!</b>	<b>⚠ CAUTION</b> <b>Loud siren noise can cause hearing damage and/or loss.</b> Refer to OSHA Section 1910.95 prior to putting ANY siren into service!