

WHELEN[®]

ENGINEERING COMPANY INC.

51 Winthrop Road
Chester, Connecticut 06412-0684
Phone: (860) 526-9504
Fax: (860) 526-4078
Internet: www.whelen.com
Sales e-mail: autosale@whelen.com
Canadian Sales e-mail: canadiansales@whelen.com
Customer Service e-mail: custserv@whelen.com

Installation Guide: 295HFSC9 Dual Siren

DANGER! Sirens produce 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) 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!**

Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that he can operate the system without taking his eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. **PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.**

Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

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.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Failure to use specified installation parts and/or hardware will void the product warranty.
- 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 the 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 owner's 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 (this does not include products that use cigar power cords).
- If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.
- 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!

Congratulations on selecting the 295HFSC9 Siren! The 295HFSC9 offers a unique and distinctive collection of features designed to allow the user to customize the operation of this siren to suit their individual wants or needs.

- 8 Programmable operating profiles
- Switch or ignition activated panel illumination.
- Stereo (dual) or mono sound control.
- 200 Watts of output power.
- Removeable microphone.
- Park-Kill Siren shutdown.
- "Siren In Use" output signal.
- Hands-Free operation.
- Radio Repeat.
- Simulated mechanical siren tones.
- Harmonically-rich, composite Airhorn tones.
- Title 13-compliant profiles.
- Independent, non-destructive short circuit protection.

Installation

The 295HFSC9 is designed to be mounted directly onto the dash or other surface through the use of a bail strap mounting bracket. The unit may also be mounted into your vehicle's console (if so equipped). **Regardless of the style selected, be sure to observe the air bag warning on the cover of this manual.**

Bail Strap Mount

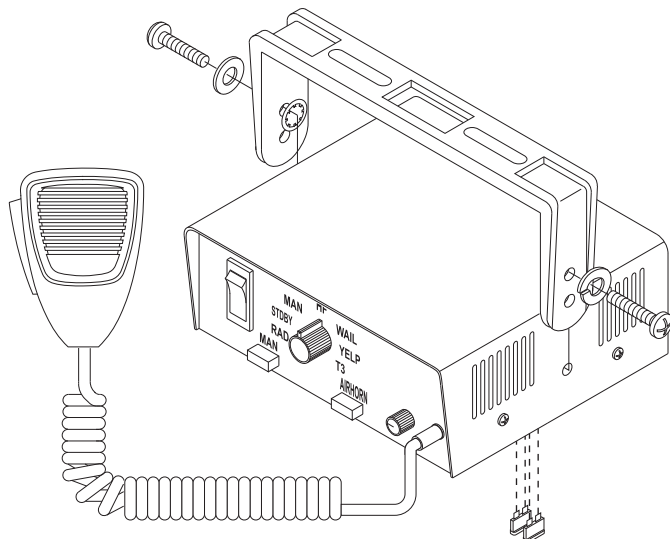
1. Position the bail strap in the selected mounting location. Using an awl or other suitable tool, scribe the surface where the mounting holes are to be drilled.

Caution: As mounting this unit will require drilling, it is absolutely necessary to make sure that no other vehicle components could be damaged in the process. Check both sides of the mounting surface before starting. If damage is likely, select a different mounting location.

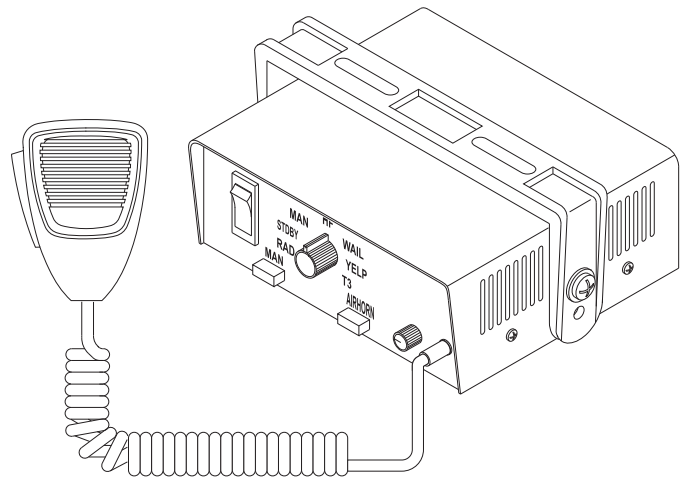
2. Drill the mounting holes in the areas scribed in step 1. The size of the drill bit should be determined by the size of the mounting hardware used and thickness of the mounting surface.
3. Secure the bail strap to the mounting location.

Note: There are 2 sets of holes on the bail strap for positioning the unit at 2 different heights.

4. Locate the two, 1/4-20 x 5/8" screws, two 1/4" internal tooth lockwashers & two 1/4" split-lockwashers (included). Place the internal tooth lockwashers between the desired holes in the strap and the housing. Place the split-lockwashers onto the screws as shown.



5. Place the unit into its mounted position. Align the threaded holes in the case with the desired holes in the bail strap.
6. Thread the screws into the case and tighten firmly.



Console Mount

Console manufacturers offer mounting kits that include all the necessary hardware and brackets required to mount this unit into their console. The console mount brackets are secured onto the unit the same way the bail bracket does (except for the addition of two flat washers that must be inserted between the 295HFSC9 and the bracket). Please refer to the manual included with your console for specific information on securing the 295HFSC9/mounting bracket assembly onto the console.

NOTE: Due to the lack of air flow within a console, prolonged operation of this siren will require the console to be modified to improve ventilation.

Microphone

A 1/4" port is provided on the front right-hand side of the unit for installation of the microphone.

Wiring

Connecting to Power:

1. Using appropriately sized wire, extend the RED and BLACK wires from the Main Power Connector, through the firewall and into the engine compartment (refer to the Wire Gage Calculation Chart located on the last page of this manual to determine the proper wire size for your application).
2. Follow the factory wiring harness towards your vehicle's battery.

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!

3. Install a user supplied 20A fuse block on the end of the RED wire. Connect the fuse block to the battery using no more than 2 feet of wire. Do not install the fuse into the fuse holder yet!
4. Connect the BLACK wire directly to the NEGATIVE battery terminal.

Connecting to your Speaker(s):

1. Route the ORG, WHT/ORG, YEL and WHT/YEL wires (harness connector positions 5, 6, 7 & 8) along the factory wiring harness towards your speakers.
2. Connect the ORG wire (pos 6) to the POSITIVE (+) terminal on speaker #1. Connect the YEL wire (pos 8) to the POSITIVE (+) terminal on speaker #2.
3. Connect the WHT/ORG wire (pin 8) to the NEGATIVE (-) terminal on speaker #1. Connect the WHT/YEL wire (Pin 7) to the NEGATIVE (-) terminal on speaker #2.

Hands-Free Siren (optional):

Refer to the wiring diagram for all wiring information for this optional connection.

Radio Rebroadcast (optional):

The two (2) BLU wires are used to connect your two-way radio's external speaker for radio rebroadcast. This is an optional connection and will not effect the other operations.

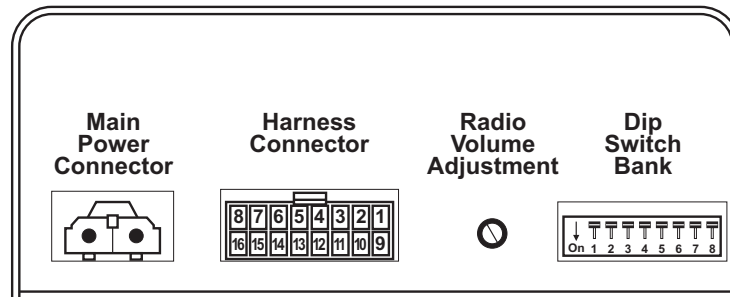
Radio rebroadcast volume can be adjusted from the rear as shown below.

Note: Radio rebroadcast 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 rebroadcast feature.

Backlight (optional):

Connecting the WHT wire to an ignition-controlled circuit enables backlighting when the unit's power switch is off.

Installation will be complete after a 20A fuse has been installed in the Main Power Connector fuse block. Now inspect the fuses on the bottom of the unit and at the battery. If any of these fuses are blown, carefully inspect all of the circuit wires and make sure they are wired correctly. Replace the blown fuses with ones of an identical amp rating. If these fuses blow after installation or activation, contact Whelen Engineering Technical Support.



Features

Stereo/Mono Sound Control - The 295HFSC9 power switch has three positions; Center (Off), Down (On/Mono) & Up (On/Dual). When this switch is Off, the unit will not function. When the switch is in either On position, the siren is functional and may be activated at the operator's discretion. In the On/Mono position, speakers #1 & #2 will produce identical siren tones. In the On/Dual position, speakers #1 & #2 can be configured to simultaneously produce completely different siren tones (refer to the siren configuration tables for detailed configuration settings). **NOTE:** If the unit is connected to the vehicle's horn ring circuit, the vehicle horn is disabled when the power switch is in the ON position.

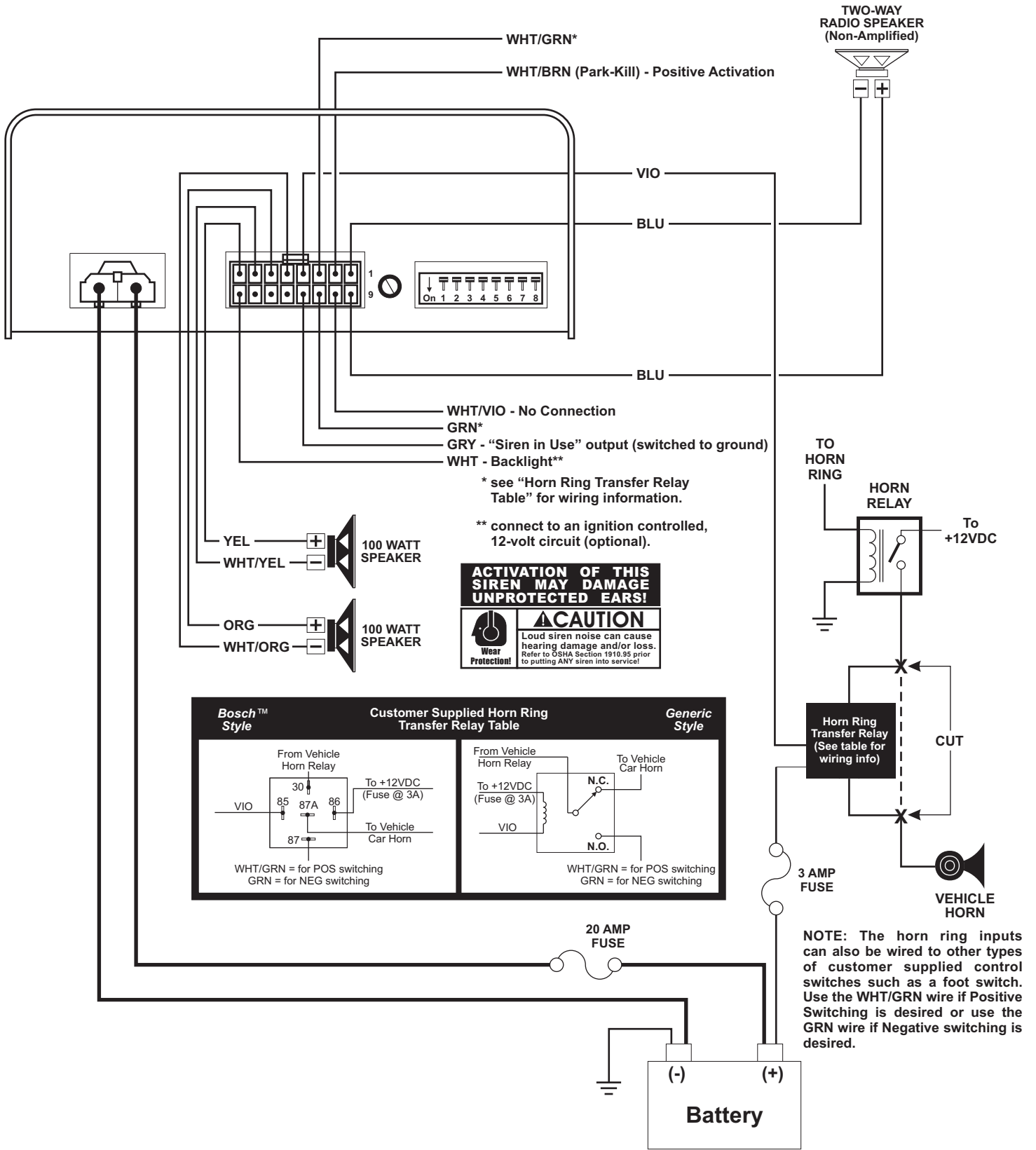
Park-Kill Siren Shutdown - This feature allows the operator to disable an active siren whenever the transmission is placed in Park. To enable this feature, the WHT/BRN wire is connected to the output signal of the transmission's park/neutral safety switch. To restore normal siren operation, turn the rotary knob to HF, MAN, STBY or RAD. The siren is now reset for normal operation. **IMPORTANT! This feature may effect the vehicle warranty. Whelen Engineering recommends that the vehicle manufacturer be contacted to learn what effect, if any, this product will have on warranty considerations.**

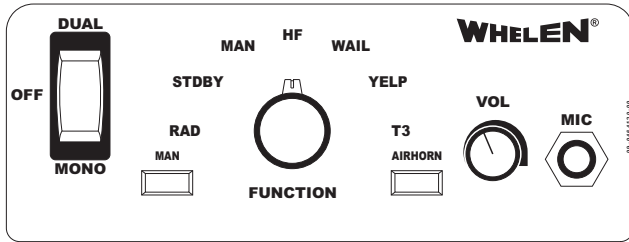
"Siren In Use" Output Signal - This feature provides an output signal that is active whenever a repetitive cycling siren tone is active (ex. Wail, Yelp, Piercer). This output signal is not enabled with Airhorn or manual tone activation.

Hands-Free Operation - This feature offers the ability to activate siren tones using the vehicle's steering wheel horn ring. When the rotary knob is in the HF position, the siren functions are placed in a standby mode. Siren tones are activated by a single "tap" on the MAN button or on the vehicle's steering wheel horn button (if the vehicle's horn has been wired to the siren).

Independant Short Circuit Control - This feature implements non-destructive, short circuit protection into the siren design. If one speaker was to short, the other speaker will remain fully operational and unaffected. When the short has been resolved, that speaker will automatically return to normal operation.

Wiring Diagram





Operating the Controls:

Power/Mono/Stereo Switch

This switch has three positions: Center (Off), Down (On/Mono) & Up (On/Dual). When this switch is Off, the unit will not function. When the switch is in either On position, the siren is functional and may be activated at the operator's discretion.

NOTE: If the unit is connected to the vehicle's horn ring circuit, the vehicle horn is disabled when the power switch is in the ON position.

Rotary Knob

The Rotary Knob controls the siren functions. There are 7 positions that may be selected. Each position and its function is outlined under "Rotary Switch Operations."

Volume Knob, Man Button and Airhorn Button

The Volume Knob controls the volume of Public Address function. Volume is increased by rotating the knob in a clockwise direction. Rotating the volume knob in a counter-clockwise direction decreases the volume produced by these features. The volume knob has no effect on any siren tones produced.

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 "Rotary Switch Operations."

Holding the AIRHORN button on, generates an AIRHORN tone whenever the siren is powered up.

Rotary Switch Operations:

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 (unit must be connected to the two-way radio as outlined in this manual).

With the Rotary Switch in the RAD Position:

- Activating the HORN RING will activate the VEHICLE HORN until the HORN RING is released (assuming the the horn ring transfer relay is wired as shown in the wiring diagram).
- Pressing the AIRHORN button will result in an AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button results in the AIRHORN tone until the MAN button is released.

STDBY (Manual Siren) - When the rotary switch is in this position the siren is in a standby state where no tones have been activated, but is waiting for another action to be taken by the operator. This position is often the best choice when manual operation of the siren is desired.

With the Rotary Switch in the STDBY Position:

- Activating the HORN RING will produce a AIRHORN tone until the HORN RING input is released.
- Pressing the AIRHORN button will result in the AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button will result in the Manual Wail tone ramping up to peak frequency and ramping down when the MAN button is released.

MAN (Manual Siren) - When the rotary switch is in this position the siren is in a standby state where no tones have been activated, but is waiting for another action to be taken by the operator. This position is used when manual operation of the siren is desired.

With the Rotary Switch in the MAN Position:

- Activating the HORN RING will result in a Manual Wail tone ramping up to the peak frequency and stopping when the HORN RING input is released.
- Pressing the AIRHORN button produces an AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button has the same effect as pressing the HORN RING.

HF (Hands-Free Operation) - When the rotary knob is in the HF position, the siren functions are placed in a stand-by mode. Siren tones are activated by a single "tap" on the MAN button or on the vehicle's steering wheel horn ring (if the vehicle's horn has been wired to the HORN RING input). The first tap produces Tone 1. A second tap produces Tone 2. A third tap produces Tone 3. The next tap returns the siren to Tone 1 and the cycle repeats itself. Two quick successive taps will stop the siren (refer to the tables on the following pages for hands-free tonal information).

With the Rotary Switch in the HF Position:

- Activating the HORN RING will result in the HF cycle as described above.
- Pressing the AIRHORN button will result in the AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button will result in the HF cycle as described above.

WAIL (Wail Tone) - When the rotary knob is in the WAIL position, a steady, rise and fall wail tone is produced.

With the Rotary Switch in the WAIL Position:

- Activating the HORN RING will change the siren tone to the override tone. Activating the HORN RING a second time returns it back to a WAIL.
- Pressing the AIRHORN button will result in an AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button will change the siren tone to the override tone. Pressing the MAN button again returns it back to a WAIL.

YELP (Yelp Tone) - When the rotary knob is in the YELP position, a fast, rise and fall tone is produced.

With the Rotary Switch in the YELP Position:

- Activating the HORN RING will change the siren tone to the override tone. Activating the HORN RING a second time returns it back to a YELP tone.
- Pressing the AIRHORN button will result in the AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button will change the siren tone to the override tone. Pressing the MAN button a second time returns it back to a YELP tone.

T3 (Piercer™ Tone (see dip switch tables)) - When the rotary knob is in the T3 position, an extremely fast, rise and fall tone is produced.

With the Rotary Switch in the T3 Position:

- Activating the HORN RING will produce the override tone until the HORN RING is released.
- Pressing the AIRHORN button will result in an AIRHORN tone until the AIRHORN button is released.
- Pressing the MAN button will produce the override tone until the MAN button is released.

Refer to the siren tables on the following pages for override tone details.

MICROPHONE - Whenever the unit is powered on, activating the microphone (pressing the switch on the side of the mic.) will shut down any other siren functions & enable public address operation regardless of the rotary switch position or any other switch or input.

Dip Switch Pos:

#1	#2	#3
OFF	OFF	OFF

Note: With the power switch in "Mono" mode, Speakers 1 & 2 produce Speaker #1 tones simultaneously. In "Dual" mode, Speakers 1 & 2 operate as outlined in the following tables.

Profile 1 - T3 = Piercer™

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MAN / MAN (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MAN / MAN (Stop)	MAN / MAN (Stop)
HF	STDBY / STDBY	WAIL / WAIL YELP / YELP PIER / PIER	WAIL / WAIL YELP / YELP PIER / PIER
WAIL	WAIL / WAIL	YELP / YELP	YELP / YELP
YELP	YELP / YELP	PIER / PIER	PIER / PIER
T3	PIER / PIER	AIRHORN / PIER	AIRHORN / PIER

Dip Switch Pos:

#1	#2	#3
ON	OFF	OFF

Profile 2

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MAN / MAN (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MAN / MAN (Stop)	MAN / MAN (Stop)
HF	STDBY / STDBY	WAIL / WAIL YELP / WAIL PIER/ YELP	WAIL / WAIL YELP / WAIL PIER/ YELP
WAIL	WAIL / WAIL	YELP / WAIL	YELP / WAIL
YELP	YELP / WAIL	PIER/ YELP	PIER/ YELP
T3	PIER / YELP	AIRHORN / PIER	AIRHORN / PIER

Dip Switch Pos:

#1	#2	#3
OFF	ON	OFF

Profile 3

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MECH / MECH (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MECH / MECH (Stop)	MAN / MECH (Stop)
HF	STDBY / STDBY	WAIL / MECH YELP / MECH PIER / MECH	WAIL / MECH YELP / MECH PIER / MECH
WAIL	WAIL / MECH*	YELP / MECH	YELP / MECH
YELP	YELP / MECH	PIER / MECH	PIER / MECH
T3	PIER / MECH	AIRHORN / MECH	AIRHORN / MECH

*MECH = Simulated Mechanical Tone

Dip Switch Pos:

#1	#2	#3
ON	ON	OFF

Profile 4 - T3 = Hi/Low

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MAN / MAN (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MAN / MAN (Stop)	MAN / MAN (Stop)
HF	STDBY / STDBY	WAIL / WAIL YELP / YELP Hi/Low / Hi/Low	WAIL / WAIL YELP / YELP Hi/Low / Hi/Low
WAIL	WAIL / WAIL	YELP / WAIL	YELP / WAIL
YELP	YELP / YELP	Hi/Low / YELP	Hi/Low / YELP
T3	Hi/Low / Hi/Low	AIRHORN / Hi/Low	AIRHORN / Hi/Low

Dip Switch Pos:

#1	#2	#3
OFF	OFF	ON

Profile 5 - T3 = Title 13 (Y-249)**

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MAN / MAN (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MAN / MAN (Stop)	MAN / MAN (Stop)
HF	STDBY / STDBY	WAIL / WAIL YELP / YELP	WAIL / WAIL YELP / YELP
WAIL	WAIL / WAIL	YELP / WAIL	YELP / WAIL
YELP	YELP / YELP	Y-249 / YELP	Y-249 / YELP
T3	Y-249 / Y-249	YELP / Y-249	YELP / Y-249

** a tone designed for compliance with California Title 13

Dip Switch Pos:

#1	#2	#3
ON	OFF	ON

Profile 6 - (Title 13 / Mechanical)

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MAN / MECH (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MAN / MECH (Stop)	MAN / MECH (Stop)
HF	STDBY / STDBY	WAIL / MECH YELP / MECH	WAIL / MECH YELP / MECH
WAIL	WAIL / MECH*	YELP / MECH	YELP / MECH
YELP	YELP / MECH	Y-249 / MECH	Y-249 / MECH
T3	Y-249 / MECH	Y-249 / MECH	Y-249 / MECH

*MECH = Simulated Mechanical Tone

Dip Switch Pos:

#1	#2	#3
OFF	ON	ON

Profile 7

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MAN / MAN (Coast to stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MAN / MAN (Stop)	MAN / MAN (Stop)
HF	STDBY / STDBY	Warble / Warble Whoop / Whoop	Warble / Warble Whoop / Whoop
WAIL	Warble / Warble	Whoop / Warble	Whoop / Warble
YELP	Whoop / Whoop	MECH / Whoop	MECH / Whoop
T3	MECH / MECH	AIRHORN / MECH	AIRHORN / MECH

Dip Switch Pos:

#1	#2	#3
ON	ON	ON

Profile 8

Rotary Switch	Operation Speaker #1 / Speaker #2	MAN button Speaker #1 / Speaker #2	Horn Ring Speaker #1 / Speaker #2
RAD	Radio / Radio	AIRHORN / AIRHORN	AIRHORN / AIRHORN
STDBY	STDBY / STDBY	MECH / MECH (Stop)	AIRHORN / AIRHORN
MAN	STDBY / STDBY	MECH / MECH (Coast to stop)	MECH / MECH (Coast to stop)
HF	STDBY / STDBY	MECH / MECH YELP / MECH PIER / MECH	MECH / MECH YELP / MECH PIER / MECH
WAIL	MECH / MECH	WAIL / MECH	WAIL / MECH
YELP	YELP / MECH	PIER / MECH	PIER / MECH
T3	PIER / MECH	AIRHORN / MECH	AIRHORN / MECH

Wire Gauge Calculation Chart

		Wire Gauge (AWG)										
		22	20	18	16	14	12	10	8	6	4	2
Current Draw (AMPS)	5	6	9.5	15	24.5	39	62	98	156	248	395	629
	10	3	5	7.5	12	19.5	31	49	78	124	197	314
	15	INS.	3	5	8	13	20.5	32.5	52	82.5	131	209
	20	INS.	INS.	4	6	9.5	15.5	24.5	39	62	98.5	157
	25	INS.	INS.	3	5	8	12.5	19.5	31	49.5	79	125
	30	INS.	INS.	INS.	4	6.5	10.5	16.5	26	41.5	66	104
	35	INS.	INS.	INS.	3.5	5.5	9	14	22.5	35.5	56.5	89.5
	40	INS.	INS.	INS.	3	5	7.5	12.5	19.5	31	49.5	78.5
	45	INS.	INS.	INS.	INS.	4.5	7	11	17.5	27.5	44	69.5
	50	INS.	INS.	INS.	INS.	4	6	10	15.5	25	39.5	63
	55	INS.	INS.	INS.	INS.	3.5	5.5	9	14	22.5	36	57
	60	INS.	INS.	INS.	INS.	3	5	8	13	20.5	33	52.5
	65	INS.	INS.	INS.	INS.	3	5	7.5	12	19	30.5	48.5
	70	INS.	INS.	INS.	INS.	3	4.5	7	11	17.5	28	45
	75	INS.	INS.	INS.	INS.	INS.	4	6.5	10.5	16.5	26.5	42
	80	INS.	INS.	INS.	INS.	INS.	4	6	10	15.5	24.5	39
	85	INS.	INS.	INS.	INS.	INS.	3.5	6	9	14.5	23	37
	90	INS.	INS.	INS.	INS.	INS.	3.5	5.5	8.5	14	22	35
	95	INS.	INS.	INS.	INS.	INS.	3.5	5	8	13	21	33
	100	INS.	INS.	INS.	INS.	INS.	3	5	8	12.5	19.5	31.5

INS. = Insufficient All Distances Shown Are In Feet

To use this chart...

1. Determine the amount of current being drawn through the wire. Locate this number in the vertical left-hand column. If the current value is between adjacent values, use the higher number.

2. Follow this row until the length of the installed wire is shown. If the exact length is between adjacent values, use the higher number. Follow this column upwards to find the recommended size (gauge) for this wire.

In the example shown below, the size for a wire with an installed length of 36 feet, through which 22 amps of current will be drawn, must be determined.

A row for 22 amps is not shown, so the row for 25 amps will be used. Follow this row to the right. A column for 36 feet is not shown, so the column for 49.5 feet will be used. Following this column to the top will show that the size of this wire must be at least 6 gauge.