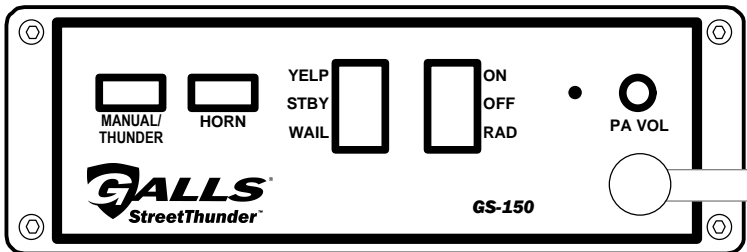


GALLS® **StreetThunder**™

1340 Russell Cave Road
Lexington, KY 40505
1-800-477-7766
www.galls.com

SIREN MODEL GS-150



INSTALLATION INSTRUCTIONS

LIMITED WARRANTY

Galls Inc. warrants this new product to be free from defects in material and workmanship, under normal use and service, for a period of seven years from the date of purchase to the first user-purchaser.

This warranty does not extend to any unit that has been subjected to abuse, misuse, improper installation or which has not been adequately maintained, nor to units which have problems related to service or modification at any facility other than the manufacturer.

This warranty does not cover labor charges for removal or re-installation of the product.

THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL GALLS INC. BE LIABLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY SUCH DEFECT IN MATERIALS OR WORKMANSHIP.

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NOTICE

Due to continuous product improvements, we must reserve the right to change any specifications and information, contained in this manual at any time without notice.

Carson Manufacturing Co., Inc. or Gall's Inc. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Carson Manufacturing Co., Inc. or Gall's Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

GENERAL DESCRIPTION

Gall's GS-150 Streetthunder Siren is designed for single 100W speaker use. The primary operating modes are Yelp, Wail, Standby and Radio. A Noise Canceling PA Override and push-button Horn Override are available in all modes except Radio. A push-button is provided for push-on/push-off Thunder operation in the Yelp and Wail modes, and Manual siren control in the Standby mode. The Thunder function can be optionally replaced by Two-Tone or disabled entirely with program jumpers. A latching siren cutout input is provided for connection to a door switch, etc. to disable the siren when exiting the vehicle. Radio and PA volume controls are provided on the front panel. The front panel is backlighted for night visibility. This unit utilizes short circuit, high voltage, and reverse polarity protection systems for maximum service life.

SPECIFICATIONS

Input Voltage	9 - 16 VDC (negative ground)				
Input Current	8.0 AMPS (@14.0 VDC - single 100W speaker)				
Standby Current	Less than 250 ma				
Audio Frequency	200Hz - 10 kHz \pm 3db				
Audio Distortion	Less than 3% (@1 kHz - single 100W speaker)				
Audio Output	40 watts (@14.0 VDC - single 100W speaker)				
Audio Input	400 ohms \pm 10%				
Output Power	105 WATTS RMS MAX. (15.0 VDC - single 100W speaker)				
Siren Frequency	700Hz - 1450Hz (Two-Tone and Horn = 435 & 585Hz)				
Tones / Cycle Rates	Horn	Wail	Yelp	Thunder	Two-Tone
Cycle Rates	109 CPS	15 CPM	205 CPM	100 CPM	60 CPM
High Voltage Protection	16 - 18 VDC will cause siren output to cease, resume at normal voltage				
Short Circuit Current	50 AMPS (supply circuit must be capable of supplying this)				
Operating Temperature	-15° F to +140°F				
Controls	2 rocker selector switches (Yelp, Wail, Standby, On, Off and Radio). Momentary push-button Horn switch. Momentary push-button Manual/Thunder toggle switch. Auxiliary input connection jumper-programmable for positive or negative Horn or Manual/Thunder operation. Cutout input connection jumper-programmable for positive or negative latching cutout operation.				
Connections (Removable 10-Term Block)	(2) Positive, (2) Negative, (2) Speaker, (2) Radio, Cutout, Auxiliary				
Size	6" Wide, 6" Deep, 2" High				
Weight	4 LBS.				

INSTALLATION

Proper installation of the unit is essential for years of safe, reliable operation. Please read all instruction **before** installing the unit. Failure to follow these instructions can cause serious damage to the unit or vehicle and may void warranties.

SAFETY PRECAUTIONS

For the safety of the installer, vehicle operator, passengers and the community please observe the following safety precautions. **Failure to follow all safety precautions and instructions may result in property damage, injury or death.**

Qualifications - The installer must have a firm knowledge of basic electricity, vehicle electrical systems and emergency equipment.

Sound Hazards - Sound levels produced by attached speakers can cause permanent hearing loss. Never operate this unit without adequate hearing protection for you and others in the area. (OSHA 1910.95)

Mounting - Mount the unit for easy access by the vehicle operator. DO NOT mount in air bag deployment area. Assure clearances before drilling in vehicle.

Wiring - Use wiring capable of handling the current required. Make sure all connections are tight. Route wiring to prevent wear, overheating and interference with air bag deployment. Install and check all wiring before connection to vehicle battery.

Testing - Test all siren functions after installation to assure proper operation. Test vehicle operation to assure no damage to vehicle.

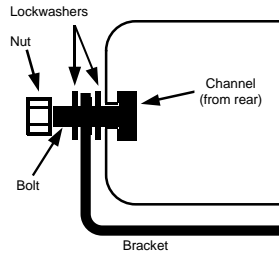
Keep These Instructions - Keep these instructions in the vehicle or other safe place for future reference. Advise the vehicle operator of the location.

UNPACKING

Inspect contents for shipping damage. If found **alert carrier immediately**. Contents should include unit with attached microphone, mounting bracket, microphone bracket with screws, mounting hardware, connector and these instructions. Contact supplier immediately if any components are missing.

MOUNTING

The mounting bracket supplied can be installed above or below the unit. Mounting bolts slide into channels on each side of the case. Lockwashers should be used between the case and bracket as well as between the bracket and nut. Choose a mounting location convenient to the operator and away from any air bag deployment areas. Inspect behind mounting area for clearance. Assure adequate ventilation to prevent overheating. Consider wire routing and access to connections, as well as microphone bracket placement. Install mounting bracket to vehicle using 1/4" hardware (not supplied).



INSTALLER-SELECTABLE OPTIONS

Carefully cutting programming resistor jumpers on the printed circuit board inside the case can select various options.

Accessing Programming Options - Remove the front panel to gain access to the programming resistor jumpers by removing the 4 corner screws. Observe polarity of the microphone connector. When replacing the front panel re-install the microphone connector, observing polarity and clearance for lighting.

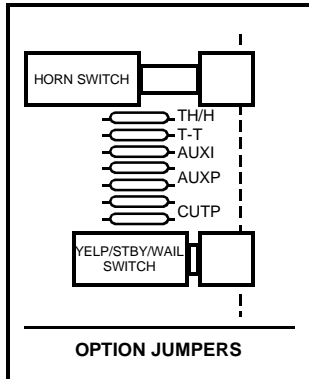
Auxiliary Input Function - The auxiliary input normally activates the Horn function. To activate the Manual/Thunder function with the auxiliary input cut the resistor jumper labeled "AUXI".

Auxiliary Input Polarity - The auxiliary input is normally activated by connecting to positive. To activate by connecting to ground cut the two resistor jumpers labeled "AUXP".

Cutout Input Polarity - The cutout input is normally activated by connecting to positive. To activate by connecting to ground cut the two resistor jumpers labeled "CUTP".

Two-Tone - Two-Tone can replace Thunder by cutting the resistor jumper labeled "T-T".

Thunder/Horn Disable - Some jurisdictions do not allow special tones in the siren. The Thunder and Horn functions can be completely disabled by cutting the resistor jumper labeled "TH/H".

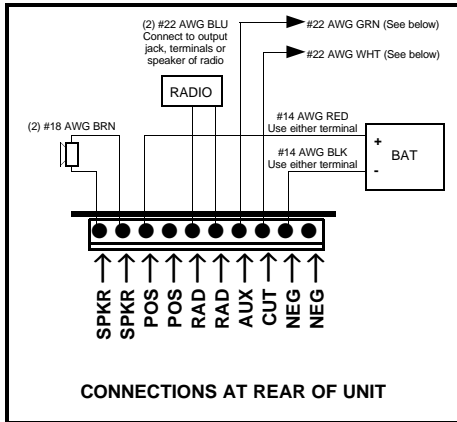


ELECTRICAL CONNECTIONS

Electrical connections to the unit are made using a removable terminal block located on the back. A label on the unit identifies the terminal function. You should install the terminal block on the unit before wiring. If the unit needs service the block can be easily removed without unwiring the block.

The power supply of the unit must be capable of delivering peak currents up to 50 amps for adequate short circuit protection and reliable operation. The preferred source is directly at the vehicle battery. The unit is internally fused.

Attach leads by stripping 3/8", inserting into connector and clamp by tightening screw. Make sure the screw is tight and the wire can't be pulled out. **Failure to adequately tighten the screw can result in improper operation or burning the connector and wire.**

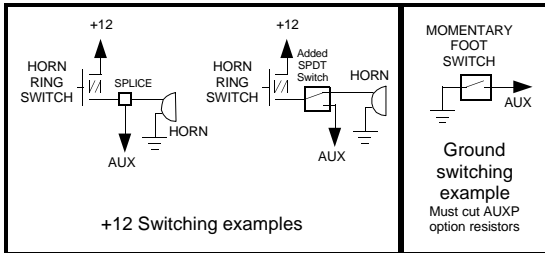


Wire Size and Termination - The diagram shows the minimum wire size used for each connection, along with recommended lead color. If the wire is longer than 10 ft. use the next larger wire size. Use only high quality crimp connectors for installation on the vehicle.

Auxiliary Input Connection

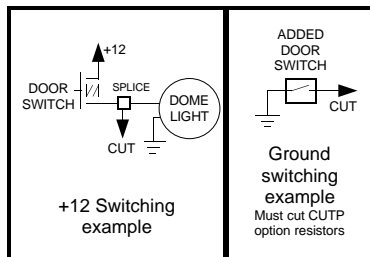
The Auxiliary Input allows activation by an external source of either the Horn or Manual/Thunder function. The adjacent diagram shows three connection examples. See the INSTALLER-SELECTABLE OPTIONS section for programming details.

NOTE: Permanent disconnection of the vehicle horn is NOT recommended.



Cutout Input Connection

The Cutout Input turns off any siren tone output when activated, and remains off until a control is activated or changed. The adjacent diagram shows two connection examples. See the INSTALLER-SELECTABLE OPTIONS section for programming details.



OPERATION

GENERAL

This unit is designed for easy operation under the stress associated with high-speed pursuit. Most siren functions are accessible with one simple motion without repetitive activation of switches or automatic timed switching that can interfere with desired operation.

SELECTOR SWITCHES

Two rocker switches control the primary operating function of the siren.

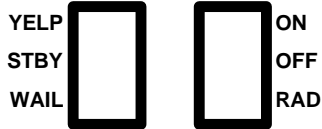
Yelp - A rapidly changing tone used in congested areas.

Wail - A slower changing tone used on highways.

Stby - A silent mode that allows Manual, Horn and Public Address operation.

On & Off - Controls siren power.

Radio - Also known as Radio Repeat, this function amplifies a radio speaker input for re-broadcast outside the vehicle. No siren tones or PA operation are available in this position.



MANUAL/THUNDER

This momentary push-button switch provides a very rapid changing tone (Thunder) when the selector switches are in the Yelp or Wail positions. This tone is used at intersections and very highly congested areas. Pressing the button once changes to the Thunder tone and pressing again changes the tone back to Yelp or Wail.

With the selector switches in the Stby position this switch provides Manual siren tone control, rising when pressed and falling when released. This is used to momentarily alert motorists or in low noise areas.

Optional operation includes replacement of the Thunder tone with Two-Tone or disabling the Thunder tone entirely. These options are selected during installation and may be governed by State or Local laws. (TH/H option.)



HORN

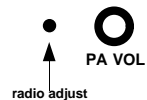
This momentary push-button switch provides a simulated air-horn tone while pressed. This can be used to supplement the normal vehicle horn and is useful at intersections or in low noise areas. This tone will override all other siren tones. This function may be disabled during installation and may be governed by State or Local laws. (TH/H option.)

MICROPHONE

The attached noise-canceling microphone is used for public address operation and overrides any siren tone when the button on the side is pressed.

PUBLIC ADDRESS VOLUME

A volume control is provided for public address volume. This should be set when the vehicle is parked. Set the PA volume to the maximum level with no feedback (squeal).



RADIO VOLUME

Set the radio volume with the Radio switch on and the radio volume set to the desired level. Use a small screwdriver inserted into the radio adjust hole shown to adjust the volume to the desired level.

AUXILIARY INPUT

During installation an auxiliary input may be connected to the horn ring or other switching device. It provides the same operation as pressing the Horn button or optionally the Manual/Thunder button.

CUTOUT

During installation, a cutout input may be connected to a door switch. It turns off any siren tone when the door is opened. The siren tone will continue to be cut off even when the door is closed. Operating any switch or input will restore normal function.

SERVICE

This unit is designed to provide years of reliable service under even the worst conditions. Many times there may appear to be a problem with the unit when the true problem is in the speaker or improper installation. The following chart shows typical symptoms and possible causes. A blown internal fuse doesn't necessarily mean that the unit is bad. If a speaker or speaker lead is shorted the internal fuse will blow before the unit is damaged. Disconnect the SPKR leads and replace the fuse. If the siren emits a sound when in the Yelp position it is OK. Check the speaker or leads for possible shorting.

PROBLEMS

Symptom	Possible Cause	Check
No power or siren output	Power switch not turned on Bad speaker Connector loose Rear panel fuse blown Loose connection at power source	Does backlighting come on? Do you hear a "pop" when turned on? With siren on and Yelp selected, listen for tone in amplifier. Is an external fuse or circuit breaker used? Are the negative leads connected to a good ground?
No siren tone - PA works	High Voltage Protection Microphone button stuck Cutout activated Cutout Polarity Option set wrong	The input voltage must be less than 16 volts. Does microphone button release properly? Does the siren work when Cutout input is disconnected? Is the CUTP option properly configured?
No PA	PA volume not set properly Radio switch on	Have you tried turning the PA volume control? PA is not available when Radio is on
Distorted siren sound	Speaker assembly loose Intermittent Aux Input connection Low vehicle voltage	Is the speaker bell or tip loose? Is the Aux Input used and wired properly? The input voltage must be greater than 9 volts.
Intermittent siren tone	High Voltage Protection Connector loose Bad power connection Microphone button activation Circuit breaker in supply connection	Is the vehicle voltage regulator working properly? Is the connector tight on the back of the unit? Is there a loose connection on a power lead? Is something lying on the microphone? Is a circuit breaker used with at least a 50A rating?
Horn function stuck on or Manual/Thunder stuck on	Horn switch stuck Manual/Thunder switch stuck Aux Input improperly connected Aux Input Polarity Option set wrong	Does the horn switch return fully when released? Does Manual/Thunder switch return fully when released? Is the Aux Input used and wired properly? Is the AUXP option properly configured?
No Radio	Unit not connected to radio Radio volume too low	Is the radio connected properly to the unit? Can you here the radio in the vehicle? Have you tried adjusting the radio adjust control?
Wrong siren tone	Two-Tone option installed Aux Input set to wrong function	Is the T-T option jumper cut? Is the AUXI jumper configured properly?
Thunder & Horn not working	Thunder/Horn disabled	Is the TH/H option jumper cut?

PARTS

The following parts are available from Gall's:

Part	Description
ED1602	Hardware Kit (Terminal block, bolts, nuts, lockwashers, microphone bracket with screws)
CP4688-10	Removable Terminal Block
CP3633	Microphone Bracket with Screws
ATO/ATC 15A	15 Amp Automotive Fuse
CP4750	Noise Canceling Microphone
SR-15-1	Microphone Strain Relief
CP4119	TIP36C Power Transistor
CP3571	Mounting Bracket
CP4768	GS-150 Installation Instructions

RETURNS

Defective units should be returned for service to:

Gall's Inc.
1340 Russell Cave Road
Lexington, KY 40505
1-800-477-7766
www.galls.com

Please include name, return address and a description of the defect.



No Hassle Guarantee

It takes gall to guarantee every purchase you make.
That's why we offer only quality products.
If you aren't satisfied with an item, return it to us and
we'll either repair or replace it, or refund your money.