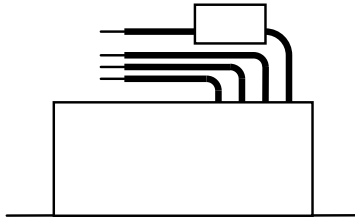


CARSON

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HA-150-10 WATERPROOF HORN AMPLIFIER



INSTALLATION AND OPERATING INSTRUCTIONS

This product is legal in most states.
Please consult your state/local vehicle codes to ensure compliance with vehicle horn regulations.

Carson is a trademark of Carson Manufacturing Company, Inc.

WARNING **Sound Hazard** - Sound level from horn speaker (>120dBA @ 10 feet) may cause hearing damage. Do not operate unit without adequate hearing protection for you and anyone in immediate vicinity. (Ref. OSHA 1910.95 for occupational noise exposure guidelines)

GENERAL DESCRIPTION

The HA-150 Horn Amplifier is a premium waterproof unit designed for an 11 ohm 100 watt speaker. The unit produces a simulated air-horn sound. This compact unit utilizes short circuit and reverse polarity protection systems for maximum service life. A power indicator light is provided for diagnostics. The unit is intended to be mounted under hood of vehicle with the speaker.

SPECIFICATIONS

Speaker Load	Single 100W 11ohm
Input Voltage	9 - 16 VDC
Input Current	8 AMPS (14 VDC)
Output Power	105 WATTS RMS MAX. (15 VDC)
Short Circuit Current	50 AMPS (supply circuit must be capable of supplying this for 1 second)
Operating Temp.	-22° F to +200°F
Size	4-1/8" Long, 2-1/8" Wide, 1-1/2" High
Weight	1 LB.

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. 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. 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.

See www.carson-mfg.com for latest information.


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.

	WARNING Sound Hazard - Sound level from horn speaker (>120dBA @ 10 feet) may cause hearing damage.
	Do not operate unit without adequate hearing protection for you and anyone in immediate vicinity. (Ref. OSHA 1910.95 for occupational noise exposure guidelines)

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 for proper unit 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**.

Contact supplier immediately if any components are missing.

Contents of box should include the following items:

Qty	Item
1	Amplifier Unit (HA-150-10 14)
1	Instruction Manual (CP5050 This Manual)

MOUNTING

The unit is waterproof and may be located under hood in the engine compartment or other areas. Allow clearance for wiring. Inspect behind mounting area for clearance.

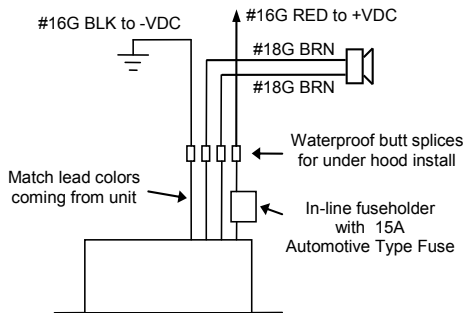
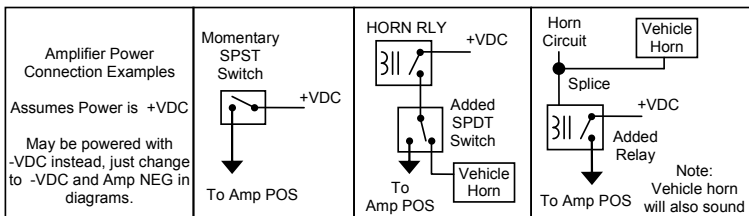
ELECTRICAL CONNECTIONS

Electrical connections to the unit are made using butt splices (not supplied). The butt splices need to be waterproof when unit is mounted under hood or other weather susceptible areas. A label on the unit identifies each lead function. 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 unit is provided with an in-line fuse.

Failure to adequately crimp splices can result in improper operation or burning the 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 15 ft. use the next larger wire size. Use only high quality crimp connectors for installation on the vehicle.

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



OPERATION

As soon as power is applied, the unit produces a simulated air horn sound and the power indicator lights up. The power indicator is located on the same surface where wires emerge from unit.

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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 in-line fuse doesn't necessarily mean that the unit is bad. If a speaker or speaker lead is shorted the fuse will blow before the unit is damaged. Disconnect the speaker leads and replace the fuse. If the power indicator light on the unit comes on with power applied it is OK. Check the speaker or leads for possible shorting.

PROBLEMS

Symptom	Possible Cause	Check
No power or output	Power not applied Connections loose In-line fuse blown Loose connection at power source Bad speaker	Is the power indicator light coming on? Is an external fuse or circuit breaker used? Are the negative leads connected to a good ground? Try another speaker.
Distorted sound	Speaker assembly loose Low vehicle voltage	Is the speaker bell or tip loose? Input voltage must be greater than lowest rated voltage.
Intermittent tone	Connections loose Bad power connection Circuit breaker in supply connection	Are the splice connections tight on the unit? Is there a loose connection on a power lead? Is a circuit breaker used with at least a 50A rating?

PARTS and ACCESSORIES

The following parts and accessories are available from Carson Manufacturing Company, Inc.:

Part	Description
CP4990-150	Fuse, 15 Amp Mini Automotive
Accessory	Description * - standard accessory supplied with unit
CP5050 *	Manual, HA-150-10 Instruction

RETURN

If you have any questions concerning this or any other Carson product, please contact our **Technical Service Department** at (888) 577-6877. Many issues can be handled over the phone. We can also be reached via e-mail at service@carson-mfg.com

If a product must be returned for any reason, please contact our Technical Service Department to obtain a Returned Merchandise Authorization number (RMA#) before you ship the product to Carson. Please write the RMA# clearly on the package near the mailing label. Be sure to provide a return address, contact and phone number, along with a brief description of the problem.

LIMITED WARRANTY

Carson Manufacturing Company, Inc. warrants this new product to be free from defects in material and workmanship, under normal use and service, for a period of five (5) years from the date of delivery to the first user-purchaser.

During this warranty period the obligation of Carson Manufacturing is limited to repairing or replacing, as Carson Manufacturing may elect, any part or parts of such product which after examination by Carson Manufacturing is determined to be defective in material and/or workmanship.

This warranty does not cover labor charges for removal or re-installation of the product. Fuses and lamps are not covered under this warranty.

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.

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 CARSON MANUFACTURING COMPANY, INC. BE LIABLE FOR ANY LOSS OF PROFITS OR ANY INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY SUCH DEFECT IN MATERIALS OR WORKMANSHIP.