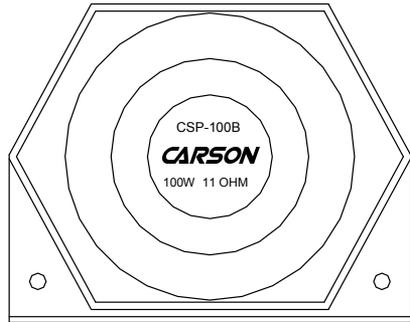
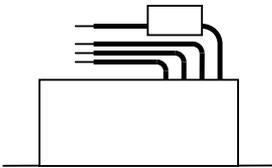
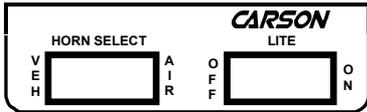


CARSON

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HPK-150 HORN SYSTEM WITH WATERPROOF 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 horn without adequate hearing protection for you and anyone in immediate vicinity. (Ref. OSHA 1910.95 for occupational noise exposure guidelines)

GENERAL DESCRIPTION

The HPK-150 is a complete electronic simulated air-horn system. The system includes a water-proof amplifier with matching speaker along with a switch panel. The switch panel allows changing between the vehicle horn and air-horn and includes a switch for emergency lighting. The amplifier utilizes short circuit, and reverse polarity protection systems for maximum service life. A power indicator light is provided on the amplifier for diagnostics.

SPECIFICATIONS

Amplifier (HA-150-10 14)	
Speaker Load	Single 100W 11 ohm
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.
Speaker (CSP-100B)	
Power Handling	100W
Impedance	11 ohm nominal
Frequency Range	400 Hz to 3500 Hz
Size	6.34" Wide, 5.10" High, 2.36" Deep
Weight	6 LBS.
Switch Panel (SP-200)	
Voltage	12VDC
Current	15ADC Max.
Size	3-3/4" Wide, 1-1/4" High, 1-3/4" Deep

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 system is essential for years of safe, reliable operation. Please read all instruction **before** installing the system components. Failure to follow these instructions can cause serious damage to the components 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 horn 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 all horn system 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.**

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	Speaker, 100W 11 ohm (CSP-100B)
1	Switch Panel (SP-200)
4	Screw, Hex #8 Self Drilling (CP4051-XK-12)
6	Terminal, 3/16" Insulated Fem. Q.C. (CP4062-K2545)
1	Instruction Manual (CP5061 This Manual)

MOUNTING

Amplifier

The amplifier 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. Use #8 screws (supplied loose) for mounting.

Speaker

The speaker is weather resistant and is intended to be mounted on the outside of the vehicle or under front hood. Mount the speaker facing forward and as far forward on the vehicle as possible to minimize sound exposure to occupants. Choose a location that minimizes obstructions in front of the speaker to maximize forward sound. Attach the speaker to a sturdy part of the vehicle to prevent vibration and possible damage. Attach the speaker angled slightly toward the road so the front openings will drain off any fluids. Cover openings of speaker while drilling any holes.

DO NOT get metal shavings inside the speaker.

Switch Panel

Mount the switch panel underneath the vehicle dash board using #8 screws (supplied loose). Locate the panel away from the driver's or passenger's legs. Allow clearance for wiring. Inspect behind mounting area for clearance. Make all electrical connections before final mounting.

ELECTRICAL CONNECTIONS

Amplifier

Electrical connections to the amplifier 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 amplifier identifies each lead function. An in-line fuse is provided on the amplifier. The power supply for the amplifier must be capable of delivering peak currents up to 50 amps for adequate short circuit protection and reliable operation. Most vehicle horn circuits with relays provide adequate power on the vehicle horn side of the relay. However **do not** provide power to both the vehicle horn and this amplifier from one horn relay circuit as this will exceed circuit rating.

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

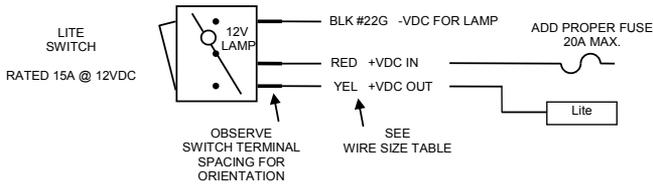
Switch Panel

Electrical connections to the switch panel are made using 3/16" quick-connect terminals (supplied loose).

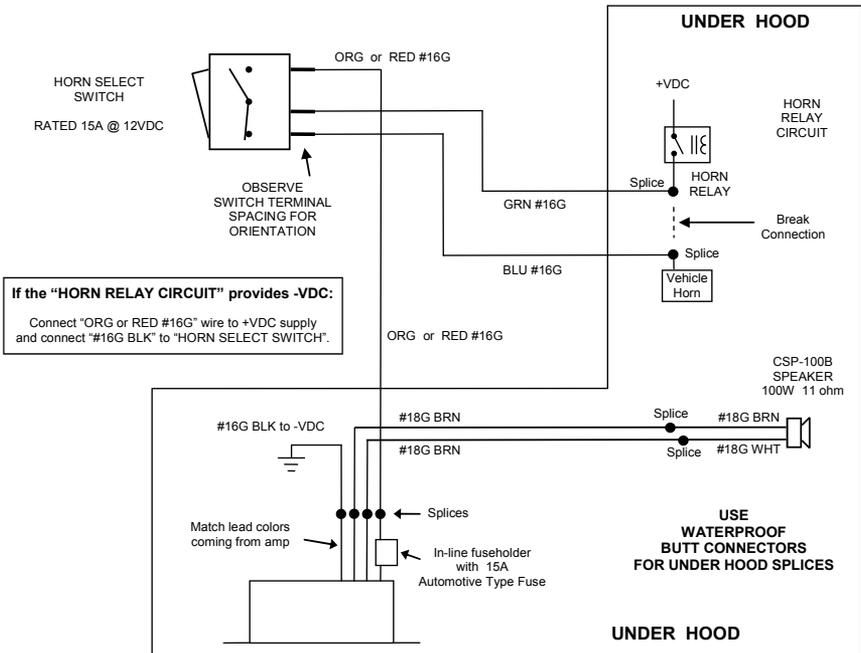
Wire Size and Termination - The diagram shows the minimum wire size used for each connection, along with recommended lead color. If the wire is longer than 10 ft. use the next larger wire size. Use only high quality crimp connectors for installation on the vehicle.

ELECTRICAL CONNECTIONS CONTINUED

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



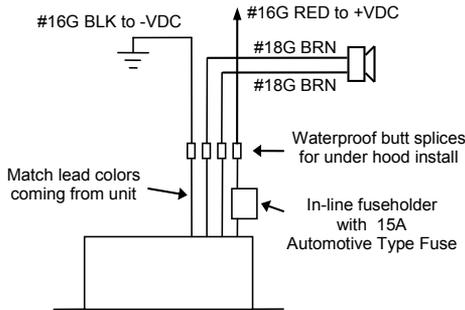
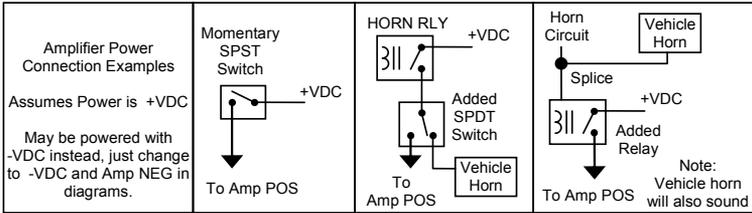
Recommended Wire Size	
Amps	Size
5 - 10	#16G
10 - 15	#14G
Use next larger size if longer than 10 ft.	



If the "HORN RELAY CIRCUIT" provides -VDC:
 Connect "ORG or RED #16G" wire to +VDC supply and connect "#16G BLK" to "HORN SELECT SWITCH".

ELECTRICAL CONNECTIONS CONTINUED (NOT USING SWITCH PANEL)

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



OPERATION

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

USING SWITCH PANEL

In an emergency situation, set the HORN SELECT switch to AIR and turn on the LITE switch in one sweeping motion. When the horn ring on the vehicle is pressed the amplifier and speaker produce a simulated air horn sound. A power indicator on the amplifier also lights up. The power indicator is located on the same surface where wires emerge from amplifier.

When the emergency is over, turn off the LITE switch and set the HORN SELECT switch to VEH in one sweeping motion. When the horn ring is pressed the regular vehicle horn will sound.

NOT USING SWITCH PANEL

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

SERVICE

The complete system consists of the amplifier, speaker, and switch panel components along with the wiring and electrical connections. **A blown fuse on the amplifier does not necessarily mean the amplifier is bad.** If the system stops functioning or exhibits problems, first check that the wire and electrical connections to each component are OK then check the following.

On the switch panel, check for power into (center terminal) and out of the switch. **On the HORN SELECT switch, check for power while pressing the horn ring.** If there is not power into the switch, check wire for bad connections and check fuses or breakers in the circuit. If there is power into but not out of the switch, the switch itself may be bad.

While activating the amplifier (with horn ring), look for the power indicator to light up. If it lights up the amplifier is OK. If not, check the fuse on the amplifier. If the fuse is OK then check the RED and BLK power input leads for good supply and ground connections. If power into the amplifier is OK then the amplifier may be bad.

If the fuse on the amplifier is blown, disconnect the speaker leads at the amplifier and replace the fuse. As before, activate the amplifier and look for the power indicator to light up. If the fuse blows again then the amplifier may be bad.

If the power indicator on the amplifier lights up, disconnect the leads at the speaker and check the speaker inputs with an ohm meter. If the reading is less than 1 ohm or reads as open circuit then the speaker may be bad. If the ohm meter reading is OK then the wiring or connections between the amplifier and speaker may be faulty.

The following chart shows typical symptoms and possible causes.

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 (for amplifier)
CP4993	Switch, Lighted Rocker (Lite switch on panel)
CP5044-2	Switch, Red Rocker ON - ON (Horn Select switch on panel)
Accessory	Description * - standard accessory supplied with unit
ED1924	Cable, 6-P Lead Assembly 15FT (made w/ 3/16" Q.C. Terminals) (for switch panel)
CP4051-XK-12 *	Screw, Hex #8 Self Drilling (for mounting)
CP4062-K2545 *	Terminal, 3/16" Insulated Fem. Q.C. (for switch panel)
CP5061 *	Manual, HPK-150 Instruction

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

or contact our Service Department at:

E-mail service@carson-mfg.com or Phone (888) 577-6877

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 and speakers 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.