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## INSTALLATION INSTRUCTIONS HORN SPEAKER WITH MULTI-TAP TRANSFORMER

Use this product according to this instruction manual. Please keep this instruction manual for future reference.

#### MODELS: ST-H15-B & ST-H30

#### **GENERAL:**

Horn speakers should be used in large and/or noisy locations. They are weatherproof and may be used indoors or outdoors. The setting of the variable transformer tap selector switch should be set to provide a sound output of <u>at least</u> 6dB for paging, and 3dB for background music above the background noise everywhere in the paging zone. However, the horn speaker's volume should not be set so high as to cause discomfort to those closest to the horn. In some cases, use of multiple horns set at lower volume provide better sound coverage, than one horn set at full volume. Horns should be mounted at least 15 feet above the floor, and angled downward.

NOTE: All CAUTIONS and WARNINGS are identified by the symbol  $\triangle$ . All warnings are printed in bold capital letters.

A WARNING: READ THESE INSTRUCTIONS CAREFULLY. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

### **SPECIFICATIONS:**

Wattage Selector Switch Settings:

	Table 1.									
ST-H15-B				ST-H30						
Setting	100V	70V	25V	Setting	100V	70V	25V			
1	2.0W	1.0W	Not Used	1	4.0W	2.0W	0.3W			
2	4.0W	2.0W	Not Used	2	7.5W	3.8W	0.5W			
3	7.5W	3.8W	0.48W	3	15.0W	7.5W	0.9W			
4	15.0W	7.5W	0.94W	4	30.0W	15.0W	1.9W			
5	Not Used	15.0W	1.8W	5	Not Used	30.0W	3.8W			
6	Not Used	Not Used	7.5W	6	Not Used	Not Used	6.9W			
7	Not Used	Not Used	15.0W	7	Not Used	Not Used	13.9W			

1) Power Handling Capacity (RMS): 15 Watts (ST-H15-B), 30 Watts (ST-H30) 2) Sound Dispersion: 110 Degrees 3) Constant Voltage Line: 25V, 70V or 100V 4) Frequency Response: 375 - 10,000Hz (@ Full Rated Output) 5) Sound Level At Rated Output (ST-H15-B): 122dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30): 125dB (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30) (SPL-On Axis, @ 1 Meter, @ Rated Power) 6) Sound Level At Rated Output (ST-H30) (SPL-On Axis, @ 1 Meter, @ Rated Power) (ST-H30) (SPL-On Axis, @ 1 Meter, @ Rated Power) (SPL-On Axis, @ 1 Meter, @ 1 Mete

7) Dimensions: 8-15/16"Dia. X 10"Dia.

CAUTION: Do not place switch in settings marked "not used". Failure to comply with these restrictions may cause damage to components and will void the warranty.

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#### **INSTALLATION INFORMATION:**

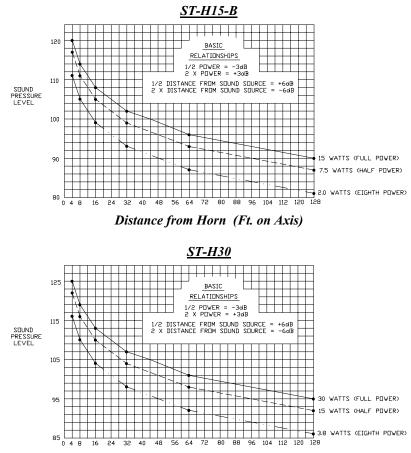
There is a slotted shaft, underneath the cable entrance interface adapter, which operates a 7-position selector switch. Remove the interface adaptor and set the switch for the desired wattage at the specified speaker line voltage (25V, 70V or 100V). Adjust the switch by turning the slotted shaft until the end of the slot which is opposite the flat on the shaft points to the desired number. The wattage provided at each selector number is shown on the decal affixed to the rear of the housing.

Use tables and the graphs shown below as a general guide to determine horn spacing, area coverage, and sound pressure level.

Table 2.								
Ambient Noise	Area Coverage	Effective	Spacing					
Level	Per Horn	Forward Projection						
(dBA)	(Sq. Ft.)	(Ft.)	Side to Side	Front to Rear				
Quiet To Moderate								
50-74	5,000	128	40 Ft.	120 Ft.				
Noisy								
75-85	2,500	64	40 Ft.	60 Ft.				
Very Noisy								
89-96 *	1,250	32	40 Ft.	30 Ft.				

#### NOTES:

- 1. Mounting Height is 15-20 Feet.
- 2. Typical Mounting Angle (to Vertical) is 60 degrees.
  - \* For very noisy locations (above 96dB), consult Wheelock for applications assistance.



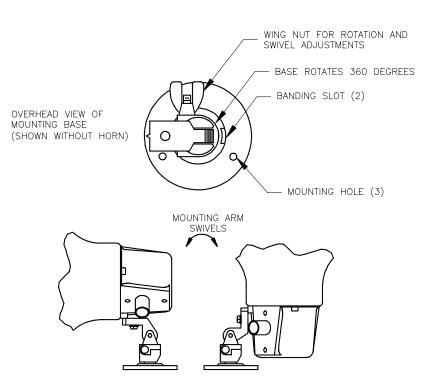
Distance from Horn (Ft. on Axis)

CAUTION: The total system wattage requirement should not exceed 85% of the system amplifiers rated output. The total system wattage requirement is the summation of the wattage tap selections of all system speakers and horns.

#### **MOUNTING INFORMATION:**

The horn speakers may be wall mounted by simply using the holes in the swivel base to locate and drill mounting holes. Mount the base to the surface with appropriate hardware. Slots are also provided in the base for banding straps, to allow mounting to beams, poles, and girders. The mounting base is also fully adjustable in both the vertical and horizontal planes (See Figure 1).

CAUTION: These devices are not intended for use in hazardous locations as defined by the National Electrical Code (NEC) and by the National Fire Protection Association (NFPA).

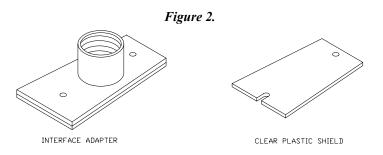




NOTE: Loosening the wing nut will allow for both pitch and rotation of the unit.

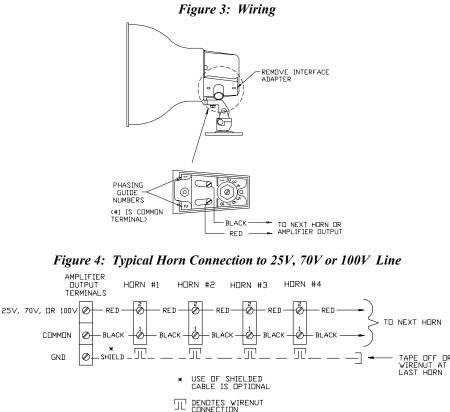
**CAUTION:** When adjusting horn position, be careful not to lose adjusting hardware.

The interface adapter (mounted to the horn) permits conduit connection. The interface adapter is threaded for standard 1/2" pipe, and will accommodate BX cable, flexible or rigid conduit and matching connectors. The interface adapter is shown in Figure 2 below. If the interface adapter is not suitable for your installation, then replace it with the clear plastic shield and 2 short mounting screws packed separately.



#### WIRING INFORMATION:

Remove the Interface Adaptor, or clear plastic shield to expose the two (2) screw terminals, and connect the audio installation wires as shown in Figure 3. The terminals are numbered (1 and 2) to indicate phasing, which should be maintained throughout the systems. For example: In an installation with multiple horns, connect the same color audio wire to all number 1 terminals and another color audio wire to all number 2 terminals to ensure proper phasing, as shown in Figure 4. Mount Interface Adapter or clear plastic shield back on horn.



# **TROUBLESHOOTING CHART:**

Table 3.					
Problem	Possible Cause And Correction				
No Sound	Disconnect paging horn wires at amplifier end and check whether amplifier is operational. If				
(System Wide)	not repair amplifier.				
No Sound	Disconnect wires from affected horn and substitute with known good horn. If new horn				
(In One Location)	operates, the voice coil could be open. If new horn does not operate, check installation wiring.				
Low Volume	Increase selector switch setting for higher wattage.				
(In One Location)					
Low Volume and Distortion	Amplifier may not have the capacity to supply power to all horns. Replace with a higher				
(System Wide)	wattage capacity amplifier.				

**CAUTION:** Excessive bass energy can damage horn voice coils, especially at high power levels. To avoid possible damage, an amplifier with a bass roll-off filter (horn protect circuit) should be used.

**CAUTION:** Always operate audio amplifiers and speakers within their specified ratings. Excessive input may distort sound quality and may damage audio equipment. Do not exceed +130% of speaker input voltage. Improper input voltage can damage speaker. If distortion is heard, check for clipping of the audio appliance with an oscilloscope and reduce the amplifier input level or gain level to eliminate any clipping.

**CAUTION:** Check the installation instructions of the manufacturers of other equipment used in the system for any guidelines or restrictions on wiring and/or locating Notification Appliance Circuits (NAC) and notification appliances. Some system communication circuits and/or audio circuits, for example, may require special precautions to assure electrical noise immunity (e.g. audio crosstalk).

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# IMPORTANT: READ SEPARATE "GENERAL INFORMATION" SHEET FOR INFORMATION ON THE PLACEMENT, LIMITATIONS, INSTALLATION, FINAL CHECKOUT, AND PERIODIC TESTING OF NOTIFICATION APPLIANCES.

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