



8" - AH99-8ST, AH94-8ST, and AH66-8ST



12" - AH99-12ST, AH94-12ST, and AH66-12ST



15" - AH5040S, AH9040S, and AH6565S

**AH Series Stadium Loudspeakers 8", 12", 15"**

HIGH-PERFORMANCE, CONSTANT DIRECTIVITY, 8", 12", and 15",  
TWO-WAY, INDOOR/OUTDOOR LOUDSPEAKER SYSTEMS

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Sound**

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## **SAFETY INSTRUCTIONS**

Please Read Carefully Before Installing or Operating

- Read all instructions carefully
- Heed all warnings
- Assure that the speaker is securely mounted

### **Hearing Damage**

**CAUTION:** All professional loudspeaker systems are capable of generating very high sound pressure levels. Use care with placement and operation to avoid exposure to excessive levels that can cause permanent hearing damage.

## **SUSPENSION & MOUNTING**

Suspension or "flying" speaker systems requires training and expertise. Improper rigging of a flying speaker may result in injury, death, equipment damage, and legal liability. Installation **must** be carried out by fully qualified installers, in accordance with all required safety codes and standards at the place of installation.

A **5:1** design factor is a generally accepted minimum standard. However, legal requirements for overhead suspension vary by municipality, please consult your local safety standards office before installing any product. We also recommend that you thoroughly check any laws and bylaws prior to installation.

Loudspeakers flown in theaters, nightclubs, conference centers, or other places of work and entertainment must be provided with an independent, correctly rated and securely attached secondary safety — in addition to the principle suspension point(s). This secondary safety must prevent the loudspeaker from dropping more than (6") should the principle suspension device fail. If you lack the skills, training, and proper ancillary equipment to fly a speaker system, do not attempt to do so.

For additional information regarding the suspension of loudspeakers or to purchase rigging materials, please contact our friends at  
ATM Group, Inc., 1635 E. Burnett St. Signal Hills, CA 90755.  
[www.atmflyware.com](http://www.atmflyware.com)  
Telephone (562) 424-1100 and Fax (562) 424-3520

- Always assure power is off to amplifiers before making any connections
- Assure that all electrical equipment is properly grounded
- Keep instructions for future reference
- Should any questions arise after reading this document, please call Atlas Sound Tech Support at 800-876-3333

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**AH SERIES LOUDSPEAKER SYSTEMS**

Thank you for your purchase of an Atlas Sound AH Series loudspeaker system. We have designed this product to be a reliable and versatile solution to your needs for years to come.

All models in the AH Series feature high output, outstanding pattern control and amazing low frequency response for indoor and outdoor applications including football stadiums, sports arenas, baseball fields, and large auditoriums.

A variety of 8", 12", and 15" models are offered to ensure that most any seating area or speaker to loudspeaker distance may be accommodated.

All units feature efficient low frequency woofers and a coaxial mounted 1" exit compression drivers to provide excellent frequency response. A highly efficient internal passive crossover network insures proper transition between the (2) drivers.

**FEATURES**

- Impressive efficiency ratings exceeding 100dB 1Watt/1Meter (model dependent) makes the AH series a perfect choice for high energy music playback at sporting events as well as extended range speech reinforcement.
- Weather & rodent resistant. Multiple mesh screens over the front of the main horn protect the speaker from weather and/or rodent damage.
- Easy installation. Heavy duty stainless steel mounting bracket is included.

**APPLICATIONS**

The AH Series is ideal for stadiums, outdoor fields, theaters, auditoriums, and convention center spaces and may be used for paging, announcements, background/foreground music, and/or internal communications.



8" - AH99-8ST, AH94-8ST, and AH66-8ST



12" - AH99-12ST, AH94-12ST, and AH66-12ST



15" - AH5040S, AH9040S, and AH6565S

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**INSTALLATION VIA MOUNTING BRACKET (INCLUDED)**

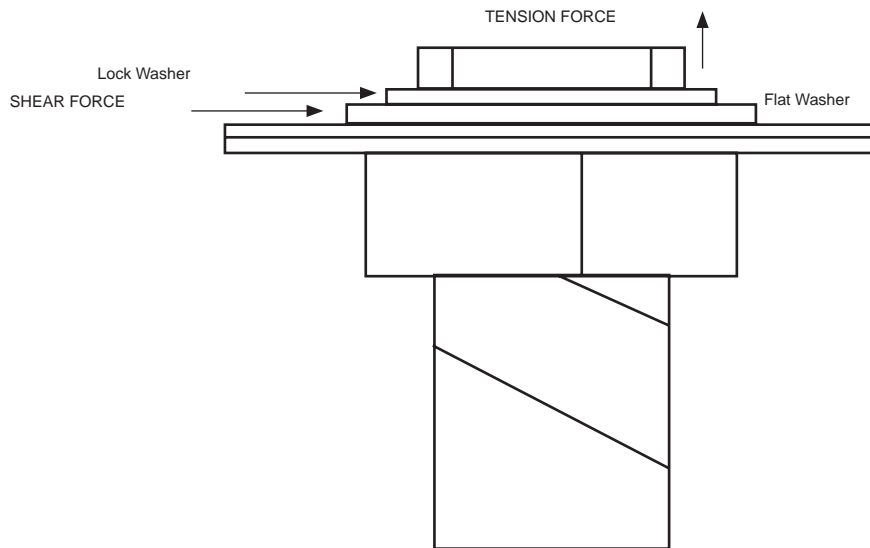
**General considerations and hardware recommendations**

**CAUTION:** AH series models weigh as much as 81 pounds (36.7kg) – model AH5040CD. A fall from almost any height could result in serious injury or death. Assure that the speaker is firmly mounted to an object that can handle the weight of the AH speaker. Remember that wind will add considerable torque to the point of attachment. The mounting surface the AH speaker is being attached to should be able to handle five or more times the weight of the AH speaker (7x recommended for locations subject to high wind forces).

Whenever the loudspeaker is mounted to a surface using the bracket, the installer must ensure that the surface is capable of safely and securely supporting the load. The hardware employed must be safely and securely attached both to the loudspeaker and the surface in question, using only the mounting holes. A general rule for soft surface installations (wood beams) is to multiply the corresponding working load limit by 75%: the result will be an approximate working load strength.

Use thread locking compound for all installations.

**CAUTION:** Mount the speaker such that the shear force is at a right angle to the mounting bolts, and close to the connection, as shown:



When mounting the AH speaker to a solid surface use the proper bolts, washers, and lock washers (Grade 5 minimum). Do not substitute mismatched bolts and washers.

The AH speaker may be mounted to a pole or scoreboard. For such mounting, contact the light pole or scoreboard manufacturer for proper instructions.

If mounting to another surface, such as a beam, see the diagram on page 7 for mounting hole locations.

**When in doubt contact a qualified structural/mechanical engineer for approval of the mounting materials and methods.**

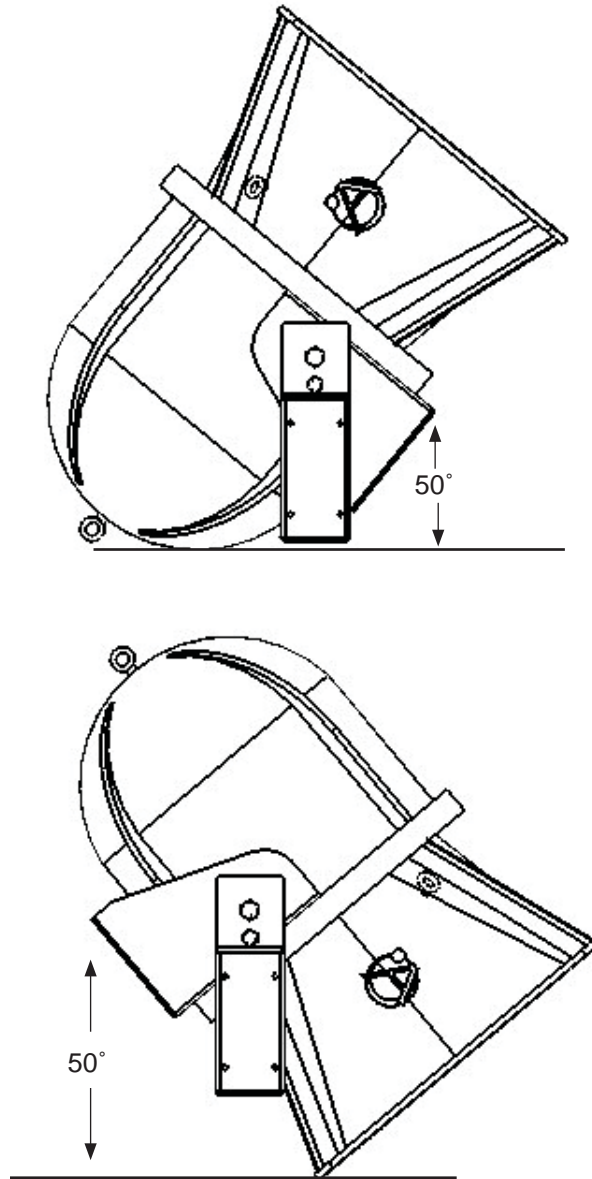
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Assure that the AH speaker can be mounted in a manner that the sound pattern will be directed in the desired direction without any physical interference. Note that the AH speaker mounting bracket allows the speaker to be tilted in excess of 50 degrees in either direction. See illustration below.



Weep-holes (for drainage) (AH5040S, AH9040S, and AH6565S 15" models only) are located on the same side as the input connectors. If the speaker is tilted above parallel to the ground, the speaker should be installed with the weep holes down for water drainage.

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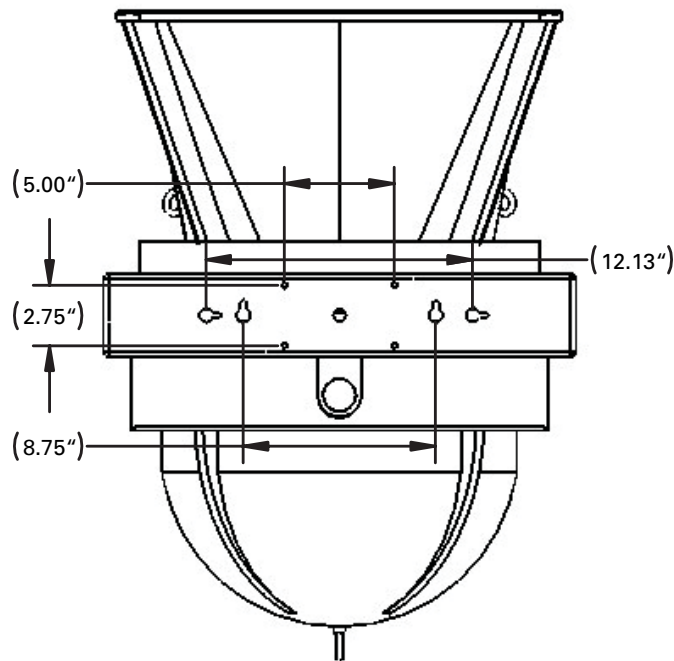


### Mounting

**CAUTION:** Mounting the AH loudspeaker requires two people, unless it is possible to safely clamp the speaker in position for alignment before mounting.

The bracket may be removed from the speaker for installation convenience. When re-attaching speaker to bracket be sure to tightly secure speaker mounting bolts. Thread locking compound should also be used in this operation.

1. Choose the bracket mounting holes best suited for the surface you are mounting to. For best stability the  $\frac{5}{8}$ " (16mm) diameter outer keyhole slots are recommended.
2. When using these mounting holes  $\frac{1}{2}$ " (grade 5 hardware minimum) hardware should be used with proper flat and lock washers. Remember to use thread-locking compound on all parts.
3. Use the dimensions noted on the illustration to mark the points where the starting hole should be drilled.
4. Choose appropriately sized bit and drill holes.
5. Attach speaker bracket, using bolt, flat washer, and lock washer as shown and re-attach loudspeaker to bracket.
6. Secondary (safety) suspension point: Use a load rated cable or steel chain (capable of holding the speaker should it come loose from the primary mounting point). This cable or chain assembly should be attached to at least (2) of the drop forge eyebolts provided on the AH speaker and secured to the mounting surface via approved, load rated hardware.



**BOTTOM VIEW**

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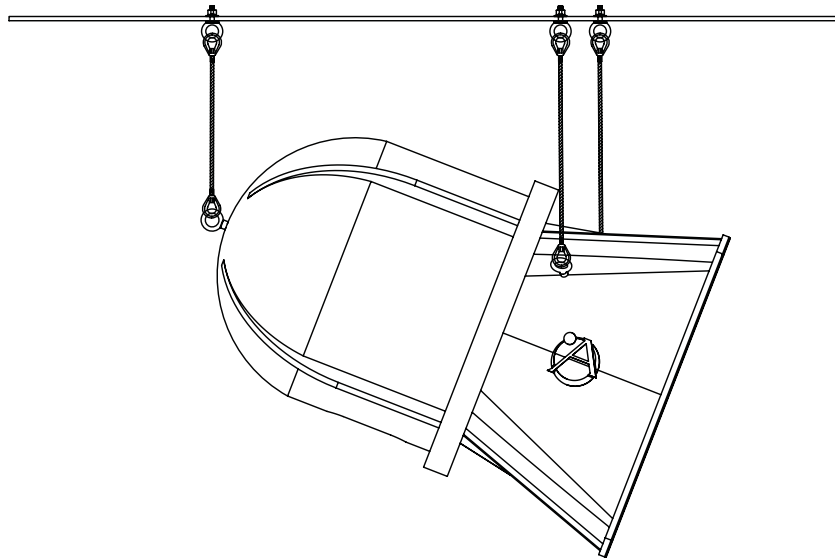
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**SUSPENDED INSTALLATION VIA EYEBOLTS (INCLUDED)**

Using 1/4" Diameter Wire Rope

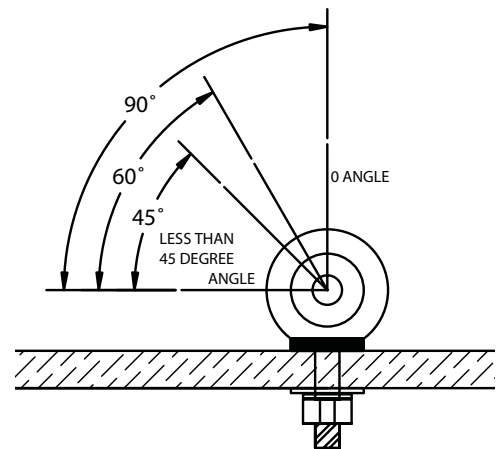


**Note:** Use of 1/4" load rated wire rope is suggested to provide a static working load limit of 1400lbs (635kg) and moving load limit of 875lbs (397kg) per point. 1/8" cable is not recommended as load limits are reduced to 400lbs (181kg) static, and 250lbs (113kg) moving.

Considerations for overhead suspension using AH Series eyebolts and wire rope:

1. Always apply the load to the eye in the plane of the eye.
2. Always use shoulder eyebolts for angular lifts.
3. Always tighten eyebolts securely against the load.
4. Apply first load to test the assembly. This load should be of equal or greater weight than the loads expected in use.
5. Use wire rope compression fittings & thimbles whenever possible and prepare terminations only as instructed by the manufacturer.
6. If wire rope clips are used, check and retighten to the manufacturer's recommended torque.

<b>Eyebolt Working Load Limits</b>	
1/4" Shank (Provided with AH Series)	
90° angle:	650lbs (295kg)
60° angle:	420lbs (191kg)
45° angle:	195lbs (88kg)
Less than 45° angle:	160lbs (73kg)



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**SPEAKER CABLE RECOMMENDATIONS AND CONNECTION INSTRUCTIONS**

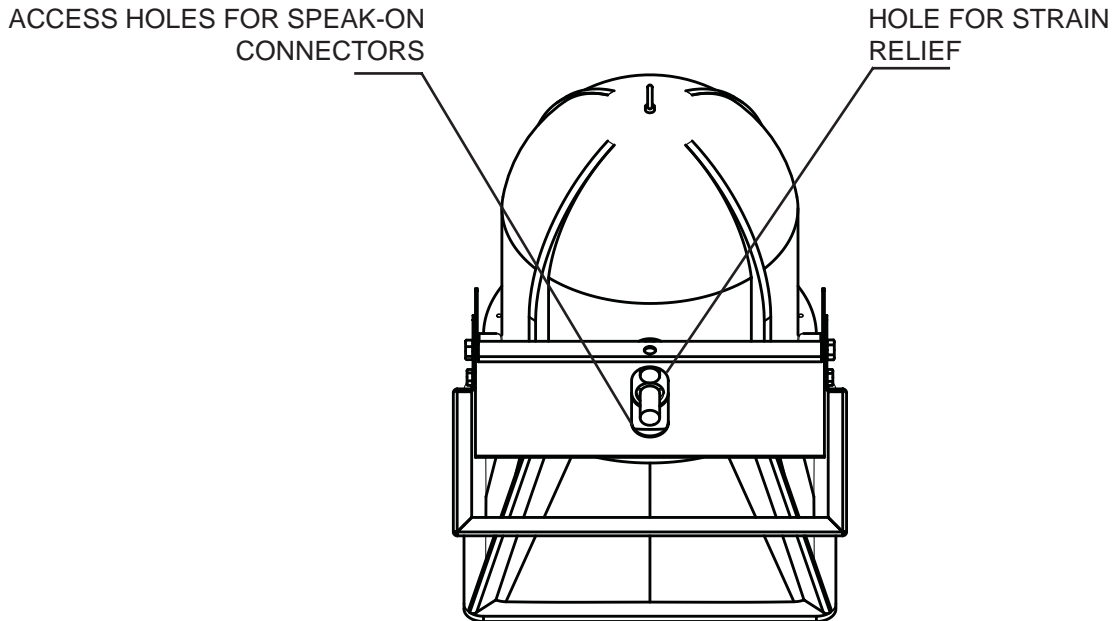
**Wire Gauges (8 Ohm operation)**

For very short distance speaker cable runs (less than 25') #16-gauge, stranded, twisted pair speaker cable may be used. For speaker cable runs between 25' and 75', #14-gauge, stranded, twisted pair speaker cable is recommended. For speaker cable runs greater than 75', #12-gauge, stranded, twisted pair speaker cable is necessary. For runs exceeding 150', please contact tech support for proper wire gauge or other installation solution using the Atlas Sound AF140 autoformer.

15" models AH5040S, AH9040S, and AH6565S input connections are provided on a convenient recessed terminal block located on the bottom of the loudspeaker. This terminal block includes a clear weather resistant cover which should be re-installed after terminating the speaker cabling to prevent corrosion in outdoor applications.

8" & 12" models include a built-in, high efficiency 60 Watt 70.7V transformer. 7.5, 15, 30, and 60 Watt taps are available on a convenient recessed terminal block located on the bottom of the loudspeaker. A removable jumper and additional pole on the terminal block is included for 8 Ohm direct coupled operation. This terminal block includes a clear weather resistant cover which should be re-installed after terminating the speaker cabling to prevent corrosion in outdoor applications.

Allow an adequate service loop for this connection to allow tilt of the loudspeaker. If the speaker is tilted above parallel to the ground, the speaker should be installed angled slightly down for water drainage — in other words, the product should not be installed tilted upwards!



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## **AMPLIFIER CONSIDERATIONS**

Consult your amplifier owner's manual to confirm power output at the rated impedance.

### **15" models: AH5040S, AH9040S, and AH6565S and other models used in 8 Ohm configuration**

Each model exhibits an 8 Ohm (nominal) impedance.

(x2) AH models paralleled will present a 4 Ohm load to the amplifier.

(x3) AH models paralleled will present a 2.66 Ohm load to the amplifier.

(x4) AH models paralleled will present a 2 Ohm load to the amplifier.

ATLAS SOUND speaker system specifications list **RMS power** handling.

As a reference **peak power = RMS x 1.414**.

These ratings should be considered in selecting the best amplifier to power the speaker system.

For general use, amplifier output should match or exceed the **RMS rated power** of the speaker system: (250 Watts for the 15" AH models, 200 Watts for the 12" models and 100 Watts for 8" models).

For increased headroom and dynamic reproduction, the amplifier's output should match or exceed the **peak power** rating of the speaker system (354 Watts for the 15" AH models, 283 Watts for 12" models and 141 Watts for 8" models).

In situations where experienced professionals are operating the speaker system with proper limiting and frequency control devices inserted into the signal path and adjusted properly, amplifier output may meet, **but should not exceed 2x the RMS** power rating of the speaker system (500 Watts for the 15" AH models, 400 Watts for 12" AH models, and 200 Watts for 8" AH models).

Utilizing the Atlas Sound model CP700 power amplifier will allow you to easily match required power ratings for most any installation. Visit [www.AtlasSound.com](http://www.AtlasSound.com) for more details on this product.

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**SPECIFICATIONS**

8" MODELS	POWER RATING	FREQUENCY RES. ±5dB	SOUND LEVEL		DISPERSION	IMPEDANCE	XFMR TAPS	DIMENSIONS	WEIGHT
			RP/1M	1W/1M					
AH99-8ST	100 Watts	90Hz to 10kHz	121dB	101dB	90° H 90° V	8Ω Nominal	3.8, 7.5, 15, 30, and 60 Watts	23.86" (606mm) D 21.41" (544mm) W 21.25" (540mm) H	65 lbs (24.5 kg)
AH94-8ST	100 Watts	90Hz to 10kHz	121dB	101dB	90° H 40° V	8Ω Nominal	3.8, 7.5, 15, 30, and 60 Watts	21.83" (554mm) D 19.66" (499mm) W 18.41" (468mm) H	63 lbs (28.6 kg)
AH66-8ST	100 Watts	90Hz to 10kHz	120dB	100dB	65° H 65° V	8Ω Nominal	3.8, 7.5, 15, 30, and 60 Watts	20.91" (531mm) D 17.91" (455mm) W 19.66" (499mm) H	61 lbs (27.7 kg)

12" MODELS	POWER RATING	FREQUENCY RES. ±5dB	SOUND LEVEL		DISPERSION	IMPEDANCE	XFMR TAPS	DIMENSIONS	WEIGHT
			RP/1M	1W/1M					
AH99-12ST	200 Watts	80Hz to 10kHz	126dB	103dB	90° H 90° V	8Ω Nominal	3.8, 7.5, 15, 30, and 60 Watts	25.65" (652mm) D 22.06" (560mm) W 21.25" (540mm) H	87 lbs (39.5 kg)
AH94-12ST	200 Watts	80Hz to 10kHz	126dB	103dB	90° H 40° V	8Ω Nominal	3.8, 7.5, 15, 30, and 60 Watts	25.65" (652mm) D 22.06" (560mm) W 21.25" (540mm) H	85 lbs (38.6 kg)
AH66-12ST	200 Watts	80Hz to 10kHz	125dB	102dB	65° H 65° V	8Ω Nominal	3.8, 7.5, 15, 30, and 60 Watts	23.86" (606mm) D 21.41" (544mm) W 21.25" (540mm) H	82 lbs (37.2 kg)

15" MODELS	POWER RATING	FREQUENCY RES. ±5dB	SOUND LEVEL		DISPERSION	IMPEDANCE	DIMENSIONS	WEIGHT
			RP/1M	1W/1M				
AH5040S	250 Watts	75Hz to 14.5kHz	127dB	104dB	50° H 40° V	8Ω Nominal	20.5" (521mm) D 20.5" (521mm) W 32" (813mm) H	87 lbs (39.5 kg)
AH6565S	250 Watts	75Hz to 14.5kHz	126dB	102dB	65° H 65° V	8Ω Nominal	20.5" (521mm) D 20.5" (521mm) W 32" (813mm) H	87 lbs (89.5 kg)
AH9040S	250 Watts	75Hz to 14.5kHz	126.5dB	102.5dB	90° H 40° V	8Ω Nominal	22.5" (572mm) D 30" (762mm) W 31" (787mm) H	100 lbs (45.4 kg)

**TROUBLESHOOTING**

PROBLEM	POSSIBLE CAUSE	REMEDY
There is no sound	Power off. Equipment setting is wrong. Volume set too low.	Assure that power is applied to all equipment in system. Check that routing (input/output) controls are set correctly. Check that volume level is above minimum.
	Loose connection.	Check system from start to finish for crossed wires, loose connection, etc. On the AH location check for correct connection.
Low sound level	Setting/volume control is set too low. Connection is shorted or bad.	Check volume levels or amplifiers and related equipment (equalizer). Check that connections aren't partially shorted/corroded.
Sound cuts in and out	System overload/oscillation intermittent connection.	Check for overload condition or bad connection.
Distortion at increased levels	Amplifier/speaker overdriven.	Check that power to speaker isn't over limits. Check that amplifier isn't overdriven. Reduce power to amplifier slightly.
Speaker makes "buzzing" noise	Hardware loose or speaker damaged.	Make sure speaker grille is tight. Check other hardware connections. Check speakers for loose parts or speaker damage.

Call Atlas Sound tech support at 1-800-876-3333 with any additional questions.

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### **Limited Five Year Warranty**

All products manufactured by Atlas Sound are warranted to the original dealer/installer, industrial, or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. "This warranty shall extend from the date of purchase for a period of five years on all Atlas Sound products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty." Atlas Sound will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our return policy set forth below. When products returned to Atlas Sound do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any non-warranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLAS SOUND SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Atlas Sound does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

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