



**Speaker Owner's
Manual
For models:
ATLAS A - 10 A - 12 A - 15**



Introduction
 Congratulations on your purchase of this Audio Products car audio speaker system. Your choice indicates your careful attention to quality and technical excellence. This world class product incorporates thorough attention to design and uses the finest quality materials. This Audio Products car audio system is among the most sophisticated available.

General Description
 Our major objective at Audio Products is to make the best sounding car speakers in the world. This goal has been achieved by the following design characteristics.

1. Accurate phase coherence for superior transient response and three dimensional soundest reproduction.
2. Complete hemispherical dispersion.
3. High efficiency for use with any high fidelity amplifier.
4. Esthetic beauty unrivaled in any class.

Inspection for shipping damage
 After unpacking your Audio Products speakers please inspect them for any shipping damage. Each unit leaves our plant only after receiving thorough inspection. Therefore, if any damage exists, it has occurred in transit after leaving the plant. If you have obtained the speaker directly from an Audio Products dealer, it should be returned to them for inspection. If you received your speakers via commercial shipper, report the damage at once to the carrier and follow their directions for prompt action.

This section of the manual has been prepared to help you make a decision on the wooter enclosure, and desired tuning for a particular application. As you can see on the following pages, there are many possible variations of woofers, and enclosure sizes that may be used to achieve a specific performance. Considering all space, and power handling limitations, choose the wooter and enclosure size that will give you the desired performance for your application.

All measurements used to calculate the volume are INTERNAL MEASUREMENTS. Always allow for the thickness of the wood.

FORMULA FOR VOLUME:

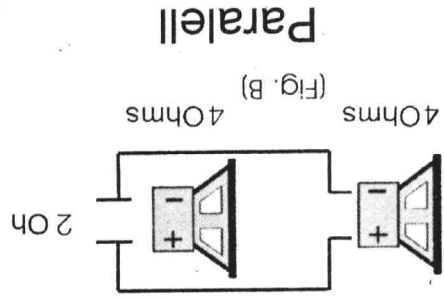
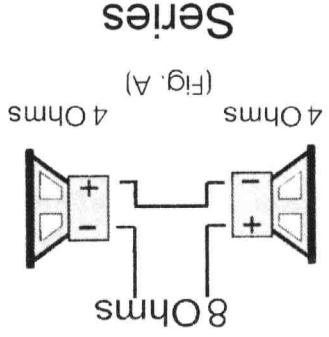
Volume for cu. Ft. = H (in.) x W (in.) x D (in.) ÷ 1728
 (Divide by 1,728 to convert to cubic feet)

WIRING:

Wiring (Series or Parallel) The wiring of two or more drivers can affect impedance for the entire system. Care must be taken to insure that the resulting impedance does not exceed the amplifier's requirements. When wiring in series, just add the impedance together. (Fig. A) When wiring in parallel, things get more complicated. The formula is:

1 divided by 1/R1 + 1/R2 + 1/R3 + 1/R4 = Total

Impedance, where R = impedance of each individual speaker. (Fig. B)



CABINET MATERIAL:

Generally 5/8" to 3/4" material should be used on all enclosures. The following is a list of commonly used construction materials:

- Medium Density FiberBoard: The best overall material for speaker cabinets, MDF is extremely rigid, and is able to withstand high-pressure levels.
- Birch, Oak and most hard woods: These are also very rigid; however, they are usually very expensive.
- Standard grade plywood & underlayment particleboard: Both are commonly used; however, they are not well suited for the car audio environment.

BRACING:

Internal bracing is encouraged to prevent flexing, and to strengthen the cabinet. NOTE: Volume taken up by the bracing must be added to the total enclosure volume. There are three main types of bracing, they are:

- Corner Bracing: Corner bracing helps to strengthen the cabinet and prevents splitting of particleboard caused by screws going into the panel edge. 1" x 1" at all corner joints, glued and screwed.
- Diagonal bracing: Diagonal bracing on all panels, prevents panel flexing under high sound pressure conditions. Remember that any flexing panels will produce unwanted sound vibrations, which can lead to a "muddy sound". 1" x 2", with 1" surfaced glued and screwed to the panel.
- Cross Bracing: Cross braces used between opposite panels will tie them together as one structure, again helping to prevent panel flexing. Diagonal braces will provide convenient anchoring points for cross braces 1" x 1" glued and screwed.

DAMPING:

All inside surfaces should be lined with 1/2" thick Dacron for fiber fill for sound damping. Be sure to attach the insulation firmly to prevent interference with woofers) and or port(s).

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TECHNICAL SERVICE:

It is our pleasure to offer the assistance of our technical staff any time you have a question or observation. We will happily help you with any aspect of your system setup. Call your local HiFonics dealer or call us directly at: (800) 635-4380 (8:30am-5:30pm CST M-F) Because of our continuing engineering efforts, we reserve the right to make changes throughout the product line without notice.



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Le mH	1.64
Vas L	38.4
Sens. dB	87
Mms/gr.	94
Cms	0.26
Q	0.39
Qes	0.41
Qms	5.54
Re Ohms	2.8
Fs Hz	32

PRODUCT SPECIFICATIONS:

A - 10

Le mH	1.52
Vas L	61.7
Sens. dB	90
Mms/gr.	113
Cms	0.18
Q	0.44
Qes	0.47
Qms	6.43
Re Ohms	3.0
Fs Hz	35

PRODUCT SPECIFICATIONS:

A - 12

PRODUCT SPECIFICATIONS:

A - 15

Le mH	1.22
Vas L	151.4
Sens. dB	92
Mms/gr.	158
Cms	0.15
Q	0.48
Qes	0.54
Qms	4.50
Re Ohms	2.4
Fs Hz	32

Q	
Fs	
Qms	
Vas	
Cms	
Mms	
Xmax	
Sd	
Dia	
Qes	
Re	
Le	
Pe	
Qts	
Sens	
Vc	
Vb	
Fc	
Fb	
F3	
Qtc	
QL	
Fill	
Ports	
DV	
LV	
H	
W	
D	

The system losses of relative damping (ratio of stored to dissipated energy or ratio of reactive to resistive energy).	
Free air resonance of drive in Hz.	
Mechanical Q of system.	
Volume of air equivalent to drive from rest position.	
Mechanical compliance of a loudspeaker suspension.	
Moving mass of total assembly.	
The maximum linear excursion of a loudspeaker piston.	
Surface area of cone.	
The piston diameter of a loudspeaker.	
Electrical Q of system.	
DC resistance.	
VC inductance.	
Maximum input power.	
Total Q of system.	
Sensitivity.	
Volume of a closed enclosure.	
Volume of a vented enclosure.	
The resonant frequency of a closed box system.	
The resonant frequency of a vented box system.	
The half-power (-3dB) frequency of a loudspeaker enclosure design.	
The Q of a loudspeaker at Fc in a closed box, considering both its electrical and mechanical resistance.	
The Q of a vented box, resulting from all box losses.	
The acoustic absorption added inside a box to suppress unwanted resonance.	
Number of ports.	
Diameter of vent.	
length of vent.	
Height	
Width	
Depth	

GLOSSARY OF TERMS:

TROUBLESHOOTING:

BASIC PROBLEM

POSSIBLE SOLUTION

NO SOUND FROM SPEAKER

Confirm power is on from all components.

VERY LOW SOUND

Check all cables and connections.

Adjust fader control.

Check connection cables equipment.
Etc...

UNNATURAL BASS EMPHASIS

Adjust loudness contour.
Crossover points, bass control, etc...

WHINING SOUND

Clean and tighten power/ground connections. Check all cables and contacts. Check all grounding points.

DISTORTION AT VERY HIGH LISTENING LEVELS

Check gain control. Check amplifier input or output controls.

NO HIGH FREQUENCY OUTPUT

Check passive crossover/active crossover. Check all cables and connections.

LIMITED WARRANTY

Note:

A stock = (new goods): 1 year speakers, 3 years electronics
B stock = (refurbished or repaired goods) 90 days

30 Day EXCHANGE: Audio Products Incorporated will replace all products with another A stock product (over the counter exchange) within 30 days of original purchase, providing that the product is found to be defective. Receipt required. After 30 days, Audio Products Incorporated will repair or replace product (with a product we deem equivalent) at our discretion. Amplifiers are covered for three years, speakers are covered for one year from the date shown on the receipt.

WHAT IS COVERED: This warranty applies to Hitonics products sold by authorized Hitonics dealers in the USA. Products purchased by consumers from authorized Hitonics dealers in another country are covered only by that country's distributor, and not by Hitonics USA.

WHO IS COVERED: Original purchaser (non-transferable) of Hitonics products purchased at an authorized Hitonics dealer, purchaser must provide Audio Products Incorporated with a copy of the sales receipt stating customer's name, dealer's name, product purchased, product serial number and date of purchase.

LIMITED WARRANTY: Warranty is in effect for the period after the date of the original purchase by the consumer. No person is authorized by Audio Product Incorporated to assume any other liability in connection with sale of this product. This warranty DOES NOT COVER the following: 1) Damage caused by abuse, misuse, accident, water or theft. 2) Damage caused by improper installation. 3) Any cost or expense related to removal and reinstallation. 4) Service performed by anyone other than an authorized Audio Product Incorporated service center. 5) Any product which has had the serial number removed, altered or defaced. 6) Subsequent damage to other components. 7) Any product purchased outside the USA. 8) Any products not purchased from an authorized Crunch dealer.

How to receive service: Call (800) 635 - 4380 for customer service. Obtain a return authorization number (RA#) Customers are responsible for shipping to Audio Products. Ship to: 2510 Commonwealth Ave., North Chicago, IL, 60064