

**autOTEK<sup>®</sup>**  
EVOLUTION OF POWER

**SUPER SPORT  
AT-SERIES  
SUBWOOFERS**

**AT12D2 / AT12D4 / AT12S4**

# **AUTOTEK**

## **SUPER SPORT AT-SERIES CAR AUDIO SUBWOOFERS**

**Congratulations on your purchase of the new Autotek AT-Series subwoofer system. The AT subwoofer series are a bargain with good build quality and accurate bass reproduction.**

- **12-Inch DVC / SVC Subwoofer**
- **Dual 4-Ohm, DUAL 2-Ohm & Single 4-Ohm Voice Coils**
- **High Energy Magnet**
- **Paper Cone**
- **Ultra Rigid Stamped Steel Basket**
- **Multi-Layer High-Temp VC**
- **Front-Plate & Voice-Coil Cooling**
- **Integrated Spider Tinsel-Lead Design**
- **Foam Surround**

**As with all high quality car audio products, we recommend professional installation by an authorised Autotek dealer. Your dealers knowledge and experience can ensure a problem free and cosmetically integrated installation. If you choose to install the subwoofers yourself, please read the entire manual very carefully.**

# SUBWOOFER INSTALLATION AND WIRING DIRECTIONS

## Enclosure Materials

Typically, 5/8" or 3/4" MDF (Medium Density Fiber Board) is best for most applications. 3/4" MDF is recommended.

## Enclosure Build Materials

Connecting joints need to be glued and screwed to ensure no air escapes and joints do not separate under high pressure. Mitered and rabbit joints also help to ensure the enclosure joints are secure.

## Bracing

Internal bracing is also recommended to prevent flexing and to strengthen the enclosure.

Note: The volume taken up by the bracing should be added to the total enclosure interior volume.

There are two common bracing methods.

1. **Corner Bracing:** These help prevent the connection joints from separating under heavy vibration and air pressure.

Use 1' x 1" MDF at all interior joints

2. **Diagonal Bracing:** These internal braces connect the top side to the bottom side as well front side to back side. This prevents the wood from bowing or pushing outwards.

Use 1" x 2" with 1" surface contact that is glued and screwed.

## Wiring

Wiring Parallel, Series or Parallel/Series will affect the final impedance at the amp and great care must be taken to ensure the amp is not driven below its intended impedance capabilities.

## Autotek AT-Series Subwoofers

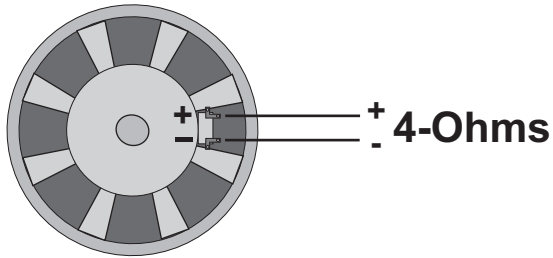
Parameters	AT12S4	AT12D4	AT12D2	
Wiring		Series	Series	Coils
NomZ	4.56	8.64	4.56	Ohm
Sd	0.051	0.051	0.051	sq.m
Revc	3.8	7.2	3.8	Ohm
BL	11.179	13.827	10.871	TxM
Vas	145.53	115.724	145.53	Liters
Cms	392.929	312.454	392.929	uMN
Mms	75.926	75.926	75.926	Grams
Fs	29.14	32.676	29.138	Hz
Qms	4.294	4.573	4.348	
Qes	0.423	0.587	0.447	
Qts	0.385	0.52	0.405	
no	0.824	0.665	0.779	%
SPL @ 1W	91.2	90.2	90.9	dB
Xmax				mm
Rms	350	350	350	Watts
Maxx	700	700	700	Watts
<b>Closed Box Design (Sealed)</b>				
Box Volume	2.0	2.0	2.0	Cubic Feet
Qtc	0.711	0.878	0.747	
F3	55	48	53	Hz
<b>Vented Box Designs (Round Port)</b>				
Box Volume	2.0	2.0	2.0	Cubic Feet
Fb	37	37	37	Hz
Port Size (Inside Diameter)	4	4	4	Inches
Port Length	10.5	10.5	10.5	Inches
F3	43	43	43	Hz
FEATURES ARE SUBJECT TO CHANGE WITHOUT NOTICE				
NOTE: All above volumes are internal values and already include subwoofer and port displacement.				
Polyfill may be added to sealed enclosures to reach the desired Q-Value.				

## Glossary of Terms

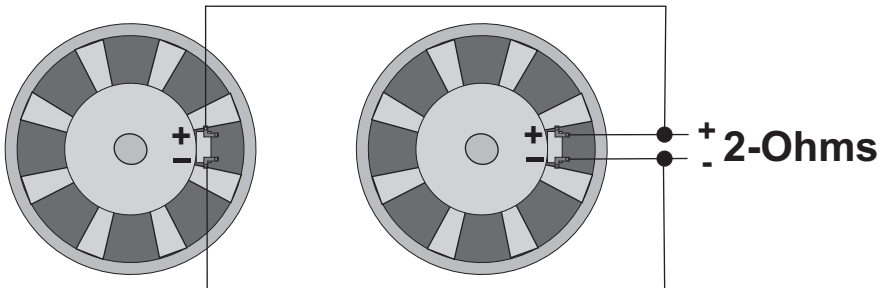
- Q The energy losses of relative damping (ratio of stored to dissipated energy or ratio of reactive to resistive energy).
- F<sub>s</sub> Free air resonance of driver in Hz.
- Q<sub>ms</sub> Mechanical Q.
- V<sub>as</sub> Volume of air equivalent to driver from the rest position.
- C<sub>ms</sub> Mechanical compliance of a loud speaker piston.
- M<sub>ms</sub> Moving mass of total loud speaker piston assembly.
- X<sub>max</sub> The maximum linear excursion of a loud speaker.
- S<sub>d</sub> Surface area of the cone.
- D<sub>ia</sub> The piston diameter of a loud speaker.
- Q<sub>es</sub> Electrical Q of a system.
- R<sub>e</sub> DC resistance.
- L<sub>e</sub> VC inductance.
- P<sub>e</sub> Maximum input power.
- Q<sub>ts</sub> Total Q of the system.
- Sens Sensitivity. An efficiency measurement in dB's.
- V<sub>c</sub> Volume of a closed or sealed enclosure
- V<sub>b</sub> Volume of a vented enclosure.
- F<sub>c</sub> The resonant frequency of a closed or sealed system
- F<sub>b</sub> The resonant frequency of a vented system
- F<sub>3</sub> The half-power (-3dB) frequency of a loud speaker enclosure
- Q<sub>tc</sub> The Q of a loud speaker at F<sub>c</sub> in a closed box, considering both it's electrical and mechanical resistance.
- Q<sub>L</sub> The Q of a vented box, resulting from all box losses.
- D<sub>V</sub> Diameter of vent.
- L<sub>V</sub> Length of vent.
- H Height.
- W Width.
- D Depth

# AT12S4

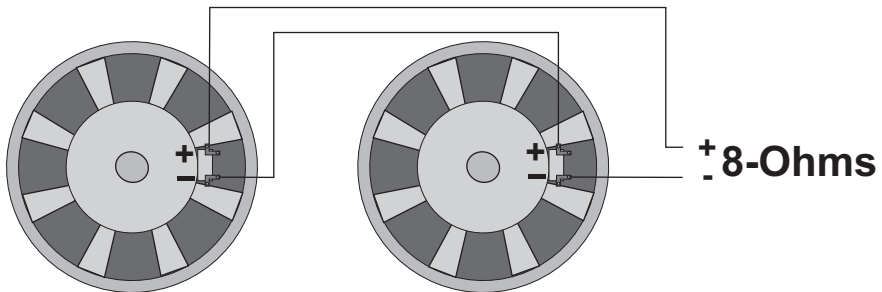
## SVC 4-Ohms



### PARALLEL



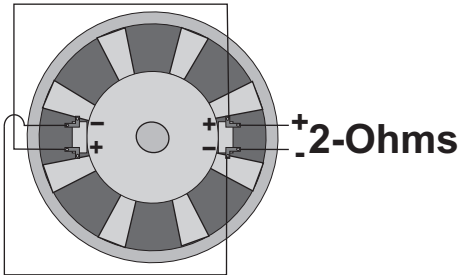
### SERIES



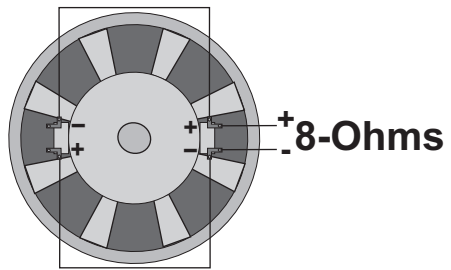
# AT12D4

## DVC 4-Ohms

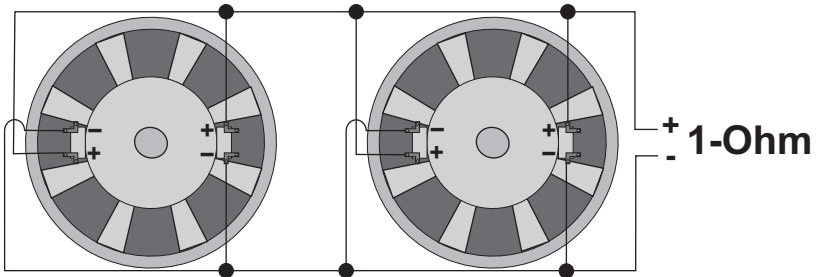
### PARALLEL



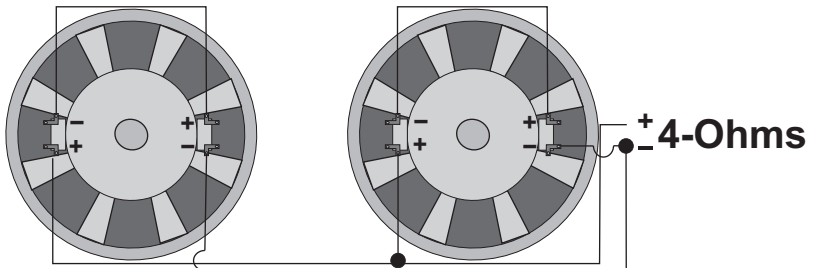
### SERIES



### PARALLEL COILS / PARALLEL SUBS



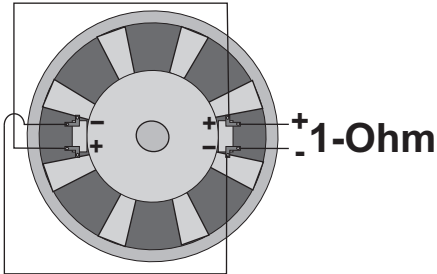
### SERIES COILS / PARALLEL SUBS



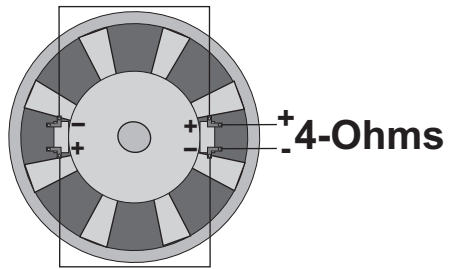
# AT12D2

## DVC 2-Ohms

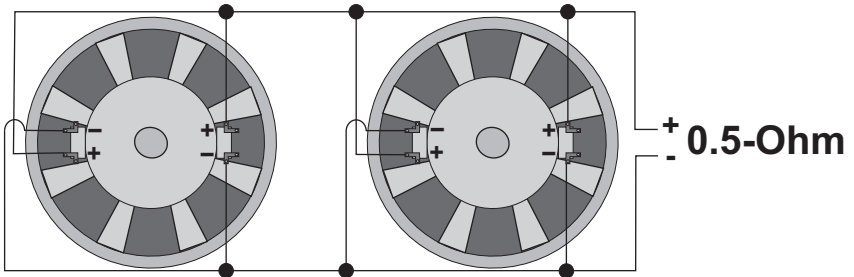
### PARALLEL



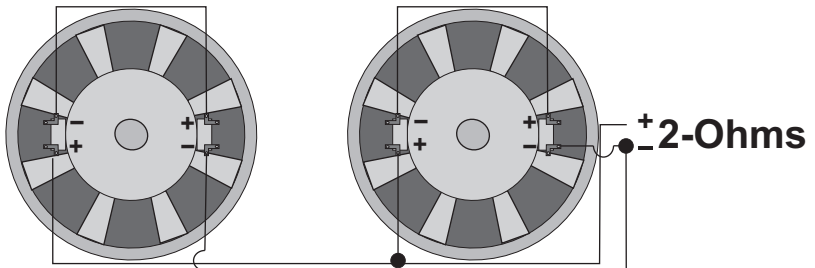
### SERIES



### PARALLEL COILS / PARALLEL SUBS

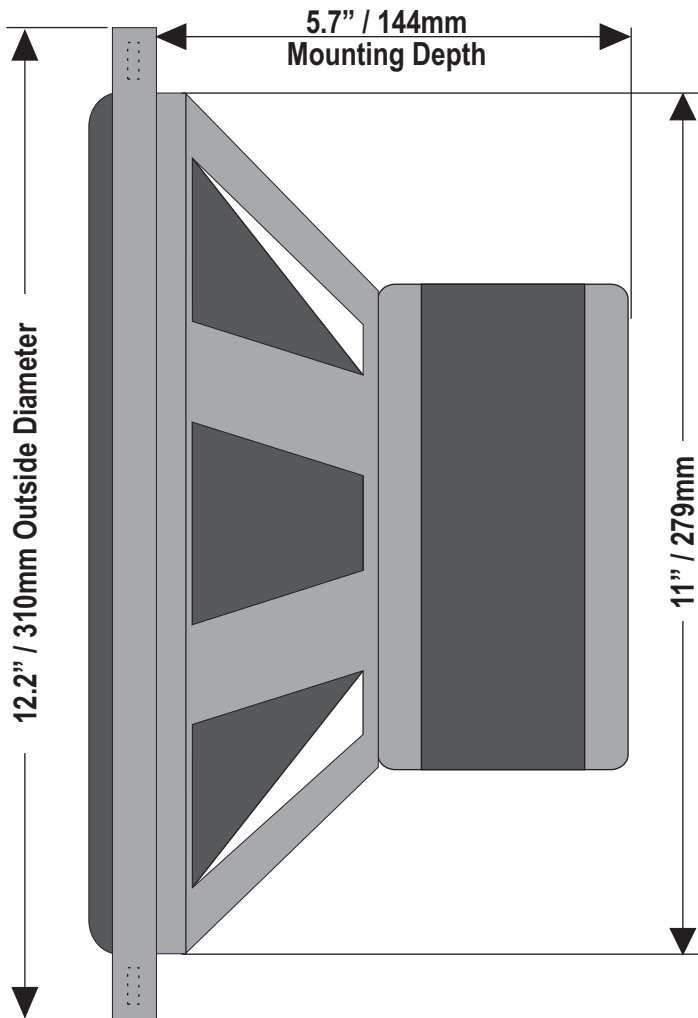


### SERIES COILS / PARALLEL SUBS





## SUBWOOFER DIMENSIONS



*When designing an enclosure for this subwoofer, please ensure to leave atleast 2" of clearance from the back of the motor to the back of the enclosure.*

## **Maxxsonics Limited Warranty**

**As the manufacturer of Maxxsonics, MB Quart, Autotek, Crunch and Hifonics car audio products, Maxxsonics USA Inc. Warrants to the original consumer purchaser the amplifier to be free from defects in material and workmanship for one (1) Year from date of purchase.**

**All other parts and accessories of the system are warranted to be free from defects in material and workmanship for one (1) year from date of purchase. Maxxsonics will repair or replace at it's option and free of charge during the warranty period, any system component that proves defective in materials and workmanship under normal installation, use and service provided that the product is returned to the authorized Maxxsonics dealer from where it was purchased. A photo copy of the original receipt must accompany the product being returned.**

**Valid purchase receipts will contain the name and address of the authorized reseller.**

**Any damage to the product as a result of misuse, abuse, accident, incorrect wiring, improper installation, alteration of date code or bar code labels, revolution, natural disaster, or any sneaky stuff because someone messed up, repair or alteration out side of our factory or authorized service centers and any thing else you have done that you should not have done is not covered.**

**This warranty is limited to defective parts and specifically excludes any incidental or consequential damages connected therewith. This warranty is not to be construed as an insurance policy.**

**Warranty on installation labor, removal, re-installation and freight charges are not the responsibility of Maxxsonics USA Inc.**

**Warranty products damaged as a result of insufficient or improper packing materials are not covered by this limited warranty and such damaged product will be returned "as is" at the expense of the owner.**



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**[www.maxxsonics.com](http://www.maxxsonics.com)**



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