

autOTEK®
EVOLUTION OF POWER

**MEAN MACHINE
SUBWOOFERS**

MW10D2 / MW10D4 / MW12D2 / MW12D4

MW15D2 / MW12SQD4

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AUTOTEK

MEAN MACHINE SERIES SUBWOOFERS

Congratulations on your purchase of the new Autotek Mean Machine Series High Power subwoofer system.

The MW series subwoofers offer superior sonic accuracy, high power handling, great sound quality with exotic build materials and outstanding good looks.

- **2.5" 2-Ohm & 4-Ohm High-Temp Dual Voice Coils on most models**
- **1" NBR Reinforced and Stitched Rubber Surround**
- **100oz Double-Stack Magnet Assembly**
- **Single Flat Nomex Spider With Woven Tinsel Leads**
- **Polypropylene Cone With Woven Honeycomb Support Body**
- **Nickel Plated Push & Insert Speaker Terminals**
- **High Strength ABS Motor Cover**
- **Heat Dispersing Ported Nickel Plated Back Plate**
- **Ultra Ridged Stamped Steel Basket**
- **Form Fitting Trim Piece to Conceal Mounting Screws**

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.

MEAN MACHINE SUBWOOFERS

ELECTRICAL	MW10		MW12		MW15		MW12SQ	
	<u>Parallel</u>	<u>Parallel</u>	<u>Parallel</u>	<u>Parallel</u>	<u>Parallel</u>	<u>Parallel</u>	<u>Parallel</u>	<u>Parallel</u>
Wiring								
NomZ	2+2	4+4	2+2	4+4	2+2	4+4	2+2	4+4
Sd	0.0319	0.0319	0.0505	0.0505	0.0812	0.0812	0.0602	0.0602
Revc	0.95	1.525	0.95	1.525	0.95	1.525	0.95	1.5
Levc	1	1	1	1	1	1	1	1
BL	8.57	10	8.57	10	8.57	10	8.57	10
Vas	18.81	18.81	47.39	47.39	122.6	122.6	47	47
Cms	131	131	131	131	131	131	91	91
Mms	176.3	167.3	200.53	191.5	254.36	254.36	257.8	257.8
Fo	33.12	34	31.05	31.77	27.57	27.57	32.8	32.8
Qms	3	3	3	3	3	3	3	3
Qes	0.475	0.545	0.506	0.583	0.57	0.57	0.797	0.797
Qts	0.41	0.461	0.433	0.488	0.479	0.479	0.704	0.704
no	0.103	0.106	0.18	0.185	0.215	0.215	0.201	0.201
SPL@1W	83.63	83.37	86.52	86.19	88.58	88.58	85.22	85.22
SPL@2.83V	92.88	90.56	95.77	93.39	97.84	97.84	92.49	92.49
Xmax/Over Hang	15	15	15	15	15	15	15	15
Xmech/Suspension	25	25	25	25	25	25	25	25
Watt@RMS	500	500	600	600	700	700	600	600
Watt@PEAK	1000	1000	1200	1200	1400	1400	1200	1200

MEAN MACHINE SUBWOOFERS

	MW10	MW12	MW15	MW12SQ	
CLOSED BOX DESIGNS (SEALED)					

Standard Tight Bass

Box Volume	0.5	1	2	1.25	Cubic Feet
Qtc	0.623	0.703	0.837	0.931	
F3	57	52	45	42	2

Optimal Sound Quality-Flat Response

Box Volume	1	2	3	2.25	Cubic Feet
Qtc	0.52	0.575	0.729	0.799	
F3	56	50	42	39	Hz

VENTED BOX DESIGNS (ROUND PORT)**Standard Tight Bass**

Box Volume	0.75	1.25	2	1.6	Cubic Feet
Fb	45	40	40	42	Hz
Port Size (Inside Diameter)	2.5	3	4	4	Inches
Port Length	8	8.5	8.9	10.3	Inches
F3	37	36	39	35	Hz

Optimal Sound Quality-Flat Response

Box Volume	1.1	1.75	3.25	2	Cubic Feet
Fb	39	38	38	38	Hz
Port Size (Inside Diameter)	3	4	6	4	Inches
Port Length	10.5	12.5	14	9.7	Inches
F3	32	33	33	31	Hz

VENTED BOX DESIGNS (SLOT PORT)**SPL Very Boomie - Loud**

Box Volume	1.9	3	4.15	3.5	Cubic Feet
Fb	43	44	46	45	Hz
Port Size (Height)	10.5	12.5	15.5	12.5	Inches
Port Size (Width)	2	3	3.5	4	Inches
Port Length	20.8	21.2	18	24	Inches
F3	34	35	37	34	Hz

FEATURES ARE SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: All above box volumes are internal values and already include subwoofer and port displacement.

The F3 value represents the -3db cut off of the enclosure in Hz.

Polyfill may be added to sealed enclosures to reach the desired Q-Value.

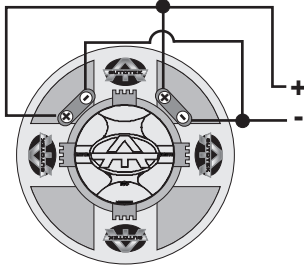
Glossary of Terms

- Q The energy losses of relative damping (ratio of stored to dissipated energy or ratio of reactive to resistive energy).
- F_s Free air resonance of driver in Hz.
- Q_{ms} Mechanical Q.
- V_{as} Volume of air equivalent to driver from the rest position.
- C_{ms} Mechanical compliance of a loud speaker piston.
- M_{ms} Moving mass of total loud speaker piston assembly.
- X_{max} The maximum linear excursion of a loud speaker.
- S_d Surface area of the cone.
- D_{ia} The piston diameter of a loud speaker.
- Q_{es} Electrical Q of a system.
- R_e DC resistance.
- L_e VC inductance.
- P_e Maximum input power.
- Q_{ts} Total Q of the system.
- Sens Sensitivity. An efficiency measurement in dB's.
- V_c Volume of a closed or sealed enclosure
- V_b Volume of a vented enclosure.
- F_c The resonant frequency of a closed or sealed system
- F_b The resonant frequency of a vented system
- F₃ The half-power (-3dB) frequency of a loud speaker enclosure
- Q_{tc} The Q of a loud speaker at F_c in a closed box, considering both it's electrical and mechanical resistance.
- Q_L The Q of a vented box, resulting from all box losses.
- D_V Diameter of vent.
- L_V Length of vent.
- H Height.
- W Width.
- D Depth

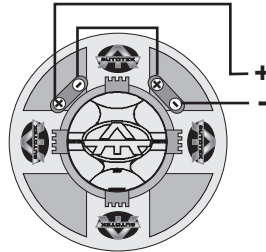
MW10D4 / MW12D4 / MW12SQD4

DVC 4-Ohms

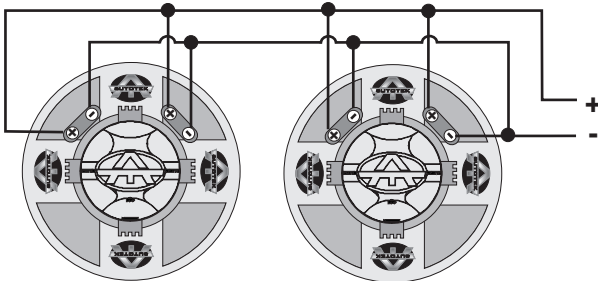
**PARALLEL
2-Ohms**



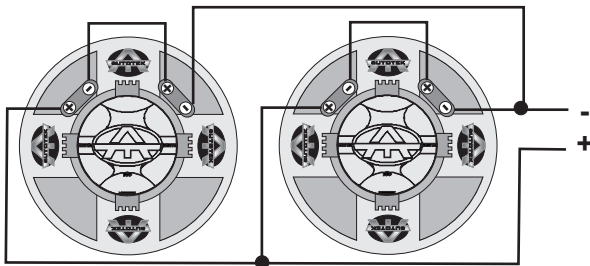
**SERIES
8-Ohms**



**PARALLEL COILS / PARALLEL SUBS
1-Ohm**



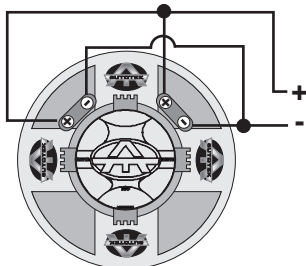
**SERIES COILS / PARALLEL SUBS
4-Ohms**



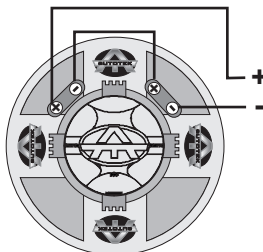
MW10D2 / MW12D2 / MW15D2

DVC 2-Ohms

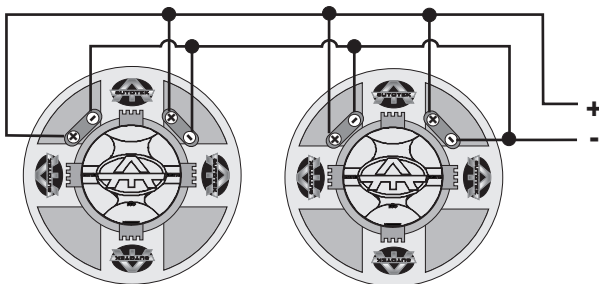
**PARALLEL
1-Ohms**



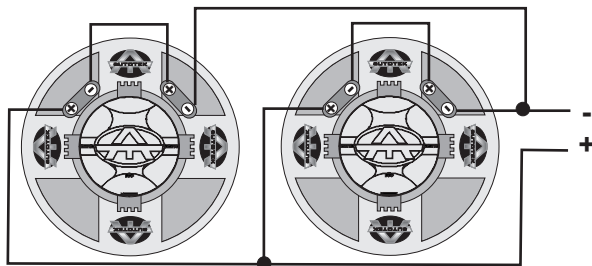
**SERIES
4-Ohms**



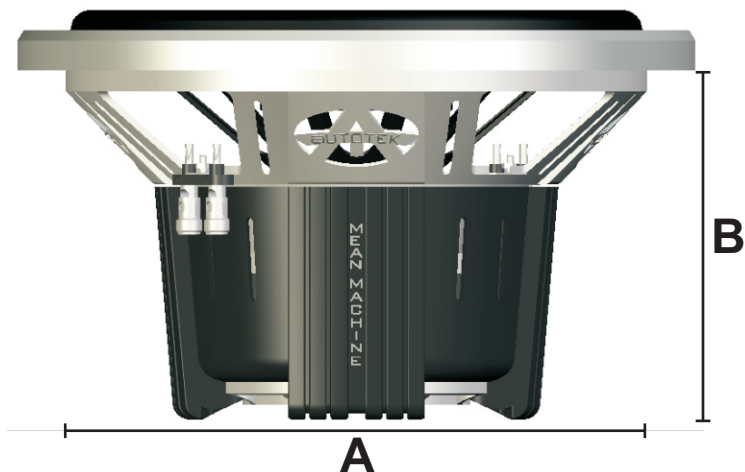
**PARALLEL COILS / PARALLEL SUBS
0.5-Ohms**



**SERIES COILS / PARALLEL SUBS
2-Ohms**



Subwoofer Dimensions



Model	A - Cut Out Diameter	B - Mounting Depth
MW10	9.1" / 230mm	6.2" / 157.48mm
MW12	11" / 280mm	6.9" / 175.26mm
MW15	13.8" / 350mm	8" / 203.2mm
MW12SQ	11.1" x 11.1" 282 x 282mm	7.3" / 185.42mm

★ Due to the vented backplate, you must allow for an additional 2" behind the subwoofer when designing your speaker 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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