

**HIFONICS®**  
C A R A U D I O  
POWER FROM THE GODS

# **BRUTUS**

## **BRZ SERIES**

### **SUBWOOFERS**

**BRZ12D4 / BRZ15D4**  
**BRZ12SQD4**



## **BRUTUS BRZ SERIES CAR AUDIO SUBWOOFERS**

**Congratulations on your purchase of the new Hifonics BRUTUS BRZ Series subwoofer system. The BRUTUS BRZ subwoofer series has received a progressive new look as well as our innovative dual spider spacing technology. The BRUTUS BRZ subwoofer series has made its' name in the industry as one of the most efficient and loudest subwoofers in its' price range. The BRUTUS BRZ subwoofers feature incredible cosmetic detail, accurate bass reproduction through a wide range of frequencies, and impressive power handling capabilities.**

- **Available In DVC 4-Ohm 2.5" High-Temp Voice Coils**
- **12" & 15" Round / 12" Square Subwoofers**
- **Rubber Surround**
- **Dual Flat Nomex Spider With Woven Tinsel Leads**
- **Polypropylene Cone**
- **Nickel Plated Push & Insert Speaker Terminals**
- **Double-Stack Magnet Assembly**
- **Heat Dispersing Ported Nickel Plated Back Plate**
- **Ultra Ridged Stamped Steel Basket**
- **High Strength ABS Motor Cover**
- **Operates In Sealed & Ported Enclosures**
- **Black Chrome-Plated Gasket**

**As with all high quality car audio products, we recommend professional installation by an authorized Hifonics 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 rabbet 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.

## BRUTUS BRZ SERIES SUBWOOFERS

<b><u>ELECTRICAL</u></b>	<b><u>BRZ12D4</u></b>	<b><u>BRZ15D4</u></b>	<b><u>BRZ12SQD4</u></b>	
<b>Wiring</b>	<u>Series</u>	<u>Series</u>	<u>Series</u>	
<b>NomZ</b>	4+4	4+4	4+4	<b>Ohm</b>
<b>Sd</b>	0.0534	0.08	0.0676	<b>sqM</b>
<b>Revc</b>	7.68	7.68	7.74	<b>Ohm</b>
<b>BL</b>	21	19.6	20.76	<b>TxM</b>
<b>Vas</b>	75	200	97	<b>Liter</b>
<b>Cms</b>	185	220	149.5	<b>uM/N</b>
<b>Mms</b>	218	261	274.8	<b>Grams</b>
<b>Fo</b>	29	21	25	<b>Hz</b>
<b>Qms</b>	3	3.5	5.034	
<b>Qes</b>	0.51	0.58	0.649	
<b>Qts</b>	0.55	0.5	0.575	
<b>no</b>	0.222	0.308	0.225	<b>%</b>
<b>SPL@1W</b>	85.7	87	85.7	<b>dB</b>
<b>SPL@2.83V</b>	86.6	88	86.6	<b>dB</b>
<b>Xmax/Over Hang</b>	15	15.5	15	<b>mm</b>
<b>Xmech/Suspension</b>	22.5	22.5	22.5	<b>mm</b>
<b>Watt@RMS</b>	600	600	600	<b>Watts</b>
<b>Watt@PEAK</b>	1200	1200	1200	<b>Watts</b>

# BRUTUS BRZ SERIES SUBWOOFERS

BRZ12D4 | BRZ15D4 | BRZ12SQD4

## CLOSED BOX DESIGNS (SEALED)

### Standard Tight Bass-Small Box

Box Volume	1	1.75	1.25	Cubic Feet
Qtc	0.835	1.1	1.091	
F3	44	37	38	Hz

## VENTED BOX DESIGNS (ROUND PORT)

### Standard Tight Bass-Small Box

Box Volume	1.25	2	1.5	Cubic Feet
Fb	40	40	40	Hz
Port Size (Inside Diameter)	3	4	3	Inches
Port Length	8.5	8.75	6.5	Inches
F3	37	38	37	Hz

### Optimal Sound Quality-Flat Response

Box Volume	1.8	3	2	Cubic Feet
Fb	38	39	39	Hz
Port Size (Inside Diameter)	4	(QTY 2) 4	(QTY 2) 3	Inches
Port Length	11.5	13.5 per	11.75 per	Inches
F3	33	34	33	Hz

## VENTED BOX DESIGNS (SLOT PORT)

### SPL Very Boomie - Loud

Box Volume	2.75	4	3.5	Cubic Feet
Fb	45	45	46	Hz
Port Size (Height)	12.5	15.5	12.5	Inches
Port Size (Width)	3	3.5	4	Inches
Port Length	26.75	22.25	22.6	Inches
F3	36	36	35	Hz

### FEATURES ARE SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: All above box volumes are internal values and already include subwoofer and port displacement.  
Volume listed represents the volume of an empty box.

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

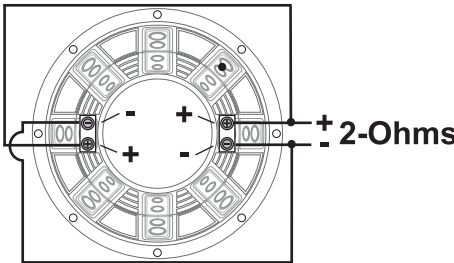
The SPL designs may require a 90 degree angle in the port to reach the desired length.

## Glossary of Terms

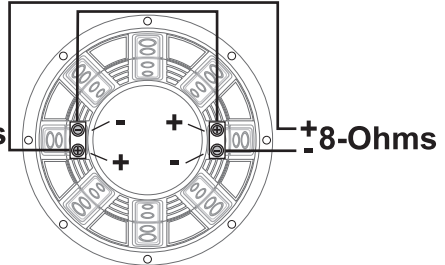
Q	The energy losses of relative damping (ratio of stored to dissipated energy or ratio of reactive to resistive energy).
F <sub>s</sub>	Free air resonance of driver in Hz.
Q <sub>ms</sub>	Mechanical Q.
V <sub>as</sub>	Volume of air equivalent to driver from the rest position.
C <sub>ms</sub>	Mechanical 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

## DVC 4-Ohms

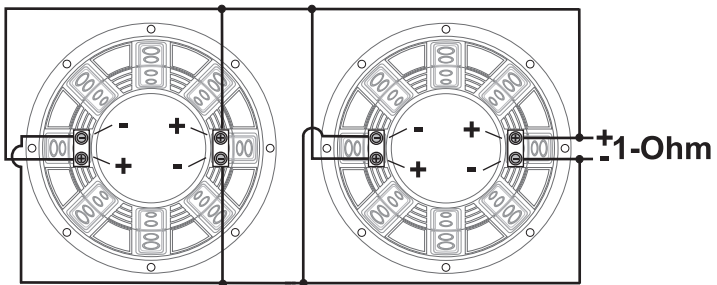
**Parallel**



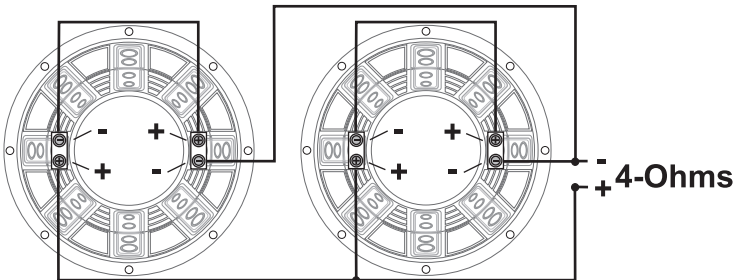
**Series**

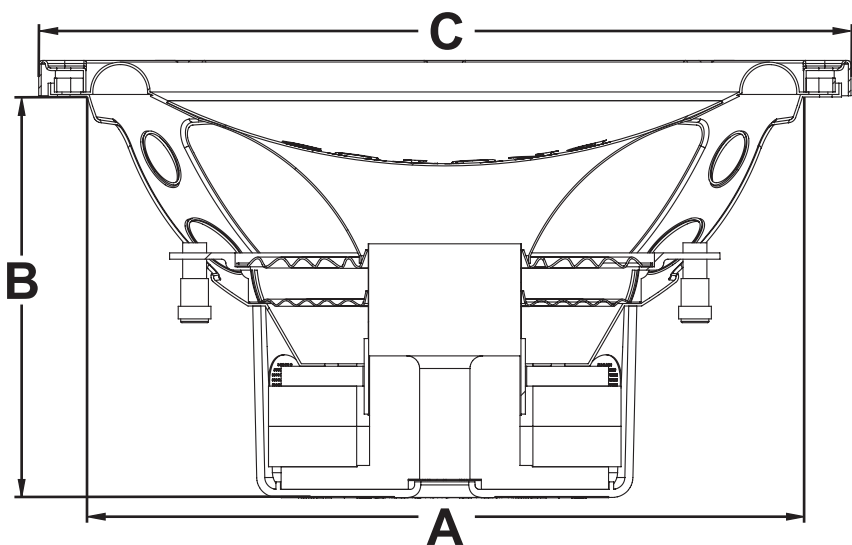


**Parallel Coils / Parallel Subs**



**Series Coils / Parallel Subs**





MODEL	A - CUT OUT DIAMETER	B - MOUNTING DEPTH	C - OUTSIDE DIAMETER
BRZ12D4	11.18"	6.3"	12.7"
BRZ15D4	13.86"	7.13"	15.31"
BRZ12SQD4	11.18"	6.4"	12.7"

**★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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