

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



**SUBWOOFERS**

**HFi12D4 / HFi12S4**

# H I F N I C S

## HFi SERIES CAR AUDIO SUBWOOFERS

**Congratulations on your purchase of the new Hifonics HFi Series subwoofer system.**

**The HFi subwoofer series offer superior sonic accuracy, intense high power sound quality with exotic build materials and outstanding good looks.**

- **Available in DVC & SVC 4-Ohm High-Temp KSV Voice Coils**
- **1" NBR Reinforced Rubber Surround**
- **Large Air Cooled Magnet Assembly**
- **Integrated One Piece Poly Cotton Spider**
- **Injected Poly Light Rigid Cone**
- **Nickel Plated Push & Insert Speaker Terminals**
- **Poly Light Dust Cap**
- **Heat Dispersing Ported Back Plate**
- **Ultra Ridged Chrome Stamped Steel Basket**
- **High Strength ABS Motor Cover**
- **Operates In Sealed & Ported Enclosures**

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

## HIFONICS HF SERIES SUBWOOFERS

Parameters	HFi12S4	HFi12D4	
Wiring	Single	Series	Coils
NomZ	4.2	8.88	Ohm
Sd	0.05	0.05	sqM
Revc	3.5	7.4	Ohm
BL	10.85	13.92	TxM
Vas	104.86	107.4	Liter
Cms	278.74	285.49	uM/N
Mmd	109.41	97.39	Grams
Mms	116.12	104.1	Grams
Fs	27.98	29.2	Hz
Qms	5.12	4.64	
Qes	0.607	0.729	
Qts	0.542	0.63	
no	0.366	0.354	%
SPL@1W	87.7	87.68	dB
Xmax	11	11	mm
Rms	300	300	Watts
Maxx	600	600	Watts

### CLOSED BOX DESIGNS (SEALED)

Standard Tight Bass			
Box Volume	1.25 / 35.4	1.25 / 35.4	Cubic Feet / Liters
Qtc	0.96	0.94	
F3	46	46	Hz
Optimal Sound Quality-Flat Response			
Box Volume	2.15 / 60.88	2.15 / 60.88	Cubic Feet / Liters
Qtc	0.87	0.8	
F3	40	41	Hz

### VENTED BOX DESIGNS (ROUND PORT)

Standard Tight Bass			
Box Volume	1.65 / 46.72	1.75 / 49.55	Cubic Feet / Liters
Fb	40	40	Hz
Port Size (inside diameter)	3 / 76.2	3 / 76.2	Inches/ Millimeters
Port Length	5.6 / 142.2	5 / 127	Inches/ Millimeters
F3	39	39	Hz
Optimal Sound Quality-Flat Response			
Box Volume	2.5 / 70.79	2.5 / 70.79	Cubic Feet / Liters
Fb	33	34	Hz
Port Size (inside diameter)	3 / 76.2	3 / 76.2	Inches/ Millimeters
Port Length	5 / 127	4.6 / 116.84	Inches/ Millimeters
F3	32	33	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.

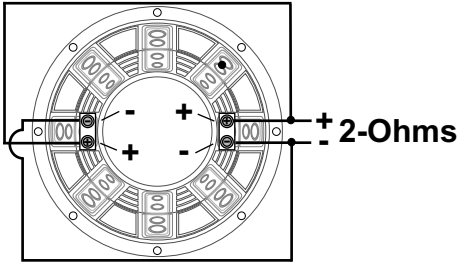
## Glossary of Terms

- Q The energy losses of relative damping (ratio of stored to dissipated energy or ratio of reactive to resistive energy).
- F<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

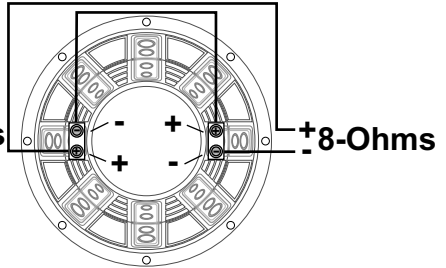
# HFi12D4

DVC 40hms

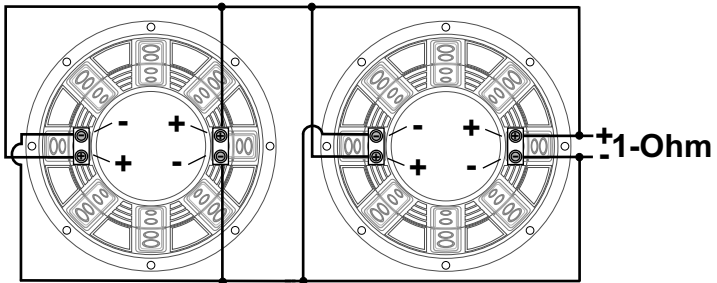
**Parallel**



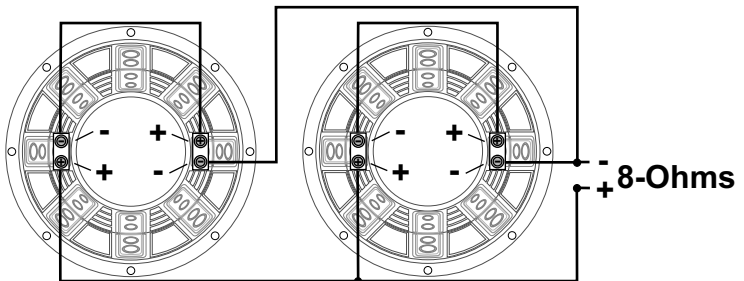
**Series**



**Parallel Coils / Parallel Subs**

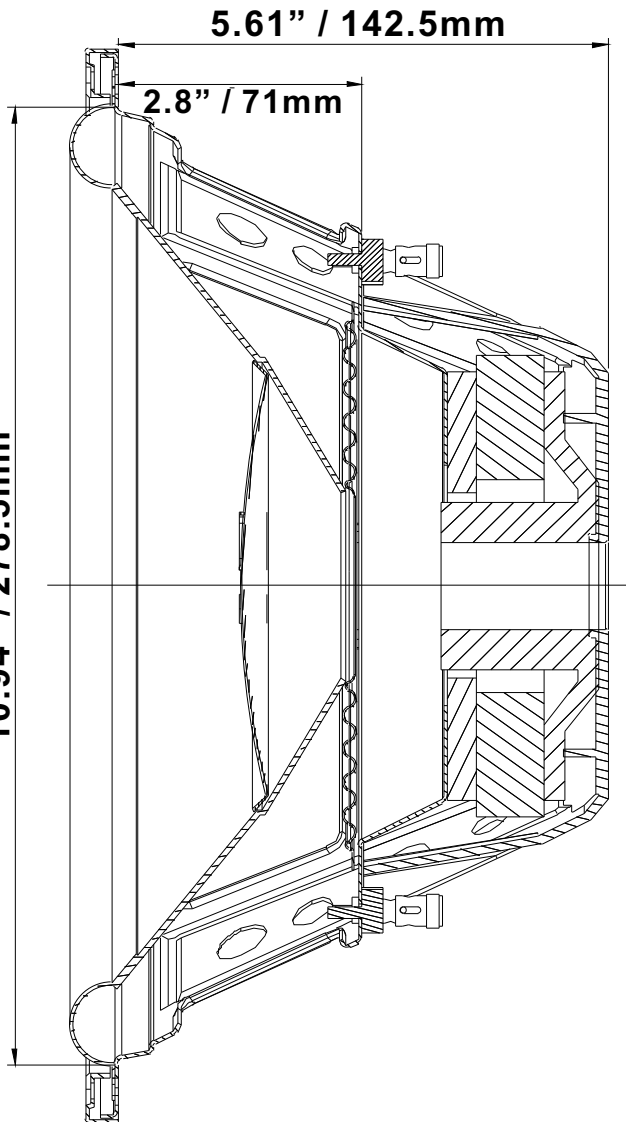


**Series Coils / Parallel Subs**



# Subwoofer Dimensions

10.94" / 278.5mm



## **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 warrantied 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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