



Tempest-X



Introduction

Congratulations! You have made a wise purchase. The Tempest-X is a proven design that provides massive output and incredibly low distortion.

What makes the Exodus Audio Subs so much better than other subs?

You can start by simply comparing the specifications. There isn't much in their price category that can compete. We have motors that utilize the XBL² motor technology, providing extremely linear output, in addition to the class leading output. See our XBL² tech paper for more details.

Another factor that makes Exodus special is that our subs are built by one of the largest build-houses in the world. A company that builds millions of transducers a year simply has more experience, resources and methods to achieve better production quality. We get virtually ZERO defects in finished product as a result.

How is Exodus Audio able to offer such kick-butt products at such affordable prices? What gives?

Good question... it reminds me of what my old man used to tell me. "You NEVER get something for nothing".

You won't get to see our name in any magazines. You won't get to hear about us on Paul Harvey. You won't see Exodus drivers sold at your local audio store. You won't get fancy looking drivers made from exotic materials with funky emblems on the cone. We don't advertise, or sponsor NASCAR. We simply build and design products. That's all we do and that's all you get!

What else sets Exodus apart from the crowd? We have some pretty good engineers and we don't cook the numbers for marketing purposes. Our stuff is backed up with real measurements, not snake oil or half-truths.

Another factor that makes Exodus such a great value is that we have a simple direct to the consumer business model. We have relationships with some of the world's largest companies as a result of our OEM (original equipment manufactures) connections. These are relationships that are not available to small "cottage industry" DIY subwoofer manufactures. We leverage those relationships to produce our subs. We know it's cheating... but we do it anyway.

Great. What kind of sub should I build?

Very good question and there is not one correct answer. It depends on your goals. If you want to build a killer subwoofer for your home theater one of the ported designs makes a lot of sense. The port gives you some free output and the ability to extend the bandwidth. For music only systems most people will be happier with one of the sealed box designs. The sealed designs also give the builder a lot more flexibility in making construction mistakes. If you're a first time DIYer, that may be important. Another bonus to the sealed designs is

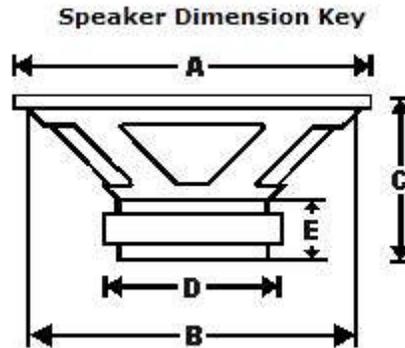
that they are smaller. Skip directly to our box design section if you want to dig right into box designs.

Performance

Operational Specifications: With Voice coils in parallel. Measured with Praxis @ sea level, @ 55 deg. F, drive voltage >1.5V. The driver is broken-in with 12 Hours of operation with a 20Hz sine wave near full excursion. A 12AWG jumper cable is used to connect the voice coils.

Re: DC resistance of VC	3.6 Ohms
Le: Inductance of VC	0.90mH
Fs: Resonance frequency	18.5 Hz
Qms: Mechanical compliance loss	3.4
Qes: Electrical motor loss.	.60
Qts: Total Q of driver	.51
Mms: Moving mass	200g
Cms: Suspension Compliance	0.37 mm/N
Vas: Stiffness of driver scaled by cone size	324L
Sd: Area of the cone	791 cm ² Measured center to center of surround.
Vd: Total Diaphragm Displacement volume	4.27L
BL: Motor Strength	11.86
X-Max: One-way linear excursion	27mm
Pmax: Maximum power (music, not RMS)	600W
SPL: Sensitivity db/1W/1M	87.2
Volume Occupied by driver	.176 ft ³ or 5L

PHYSICAL SPECIFICATIONS



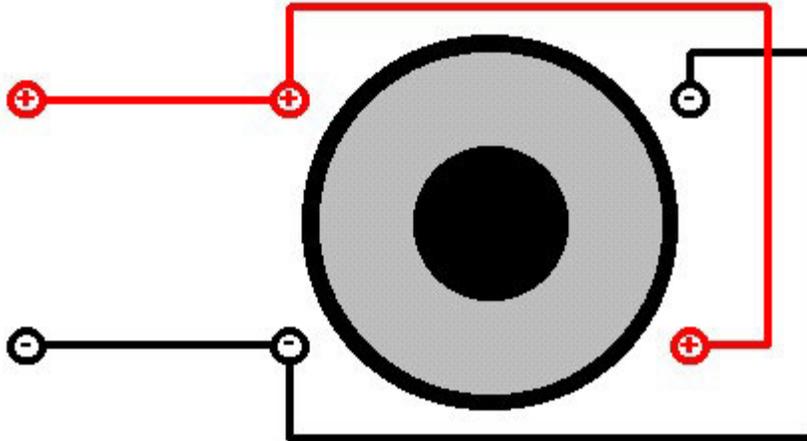
Exodus Audio Tempest-X	
A: Overall Diameter	15 9/16" inches
B: Cutout Hole	14 1/16" inches
C: Mounting Depth	8 1/2" inches
D: Motor Width	7 3/16" inches
E: Motor Depth	3 1/2" inches
Weight	34lbs raw 38lb shipping

Connection Diagrams:

DUAL VOICE COIL WIRING

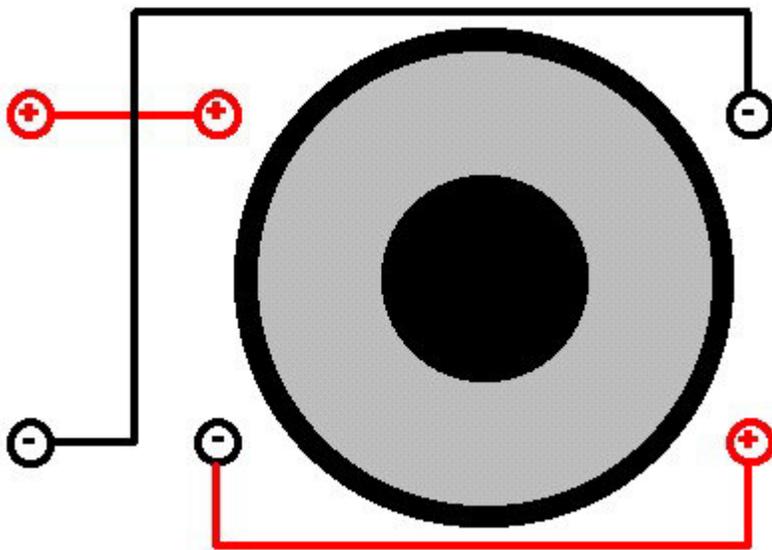
Wiring dual voice coil (DVC) drivers can often be confusing. With a single driver, you're dealing with 3 sets of connections. Two drivers, we're looking at 5 sets of connections!

There are two basic means of connecting a DVC driver: parallel and series. When parallel connecting a driver, this means connecting both voice coils to the amp in the same way. All plus terminals connect, all minus terminals connect:



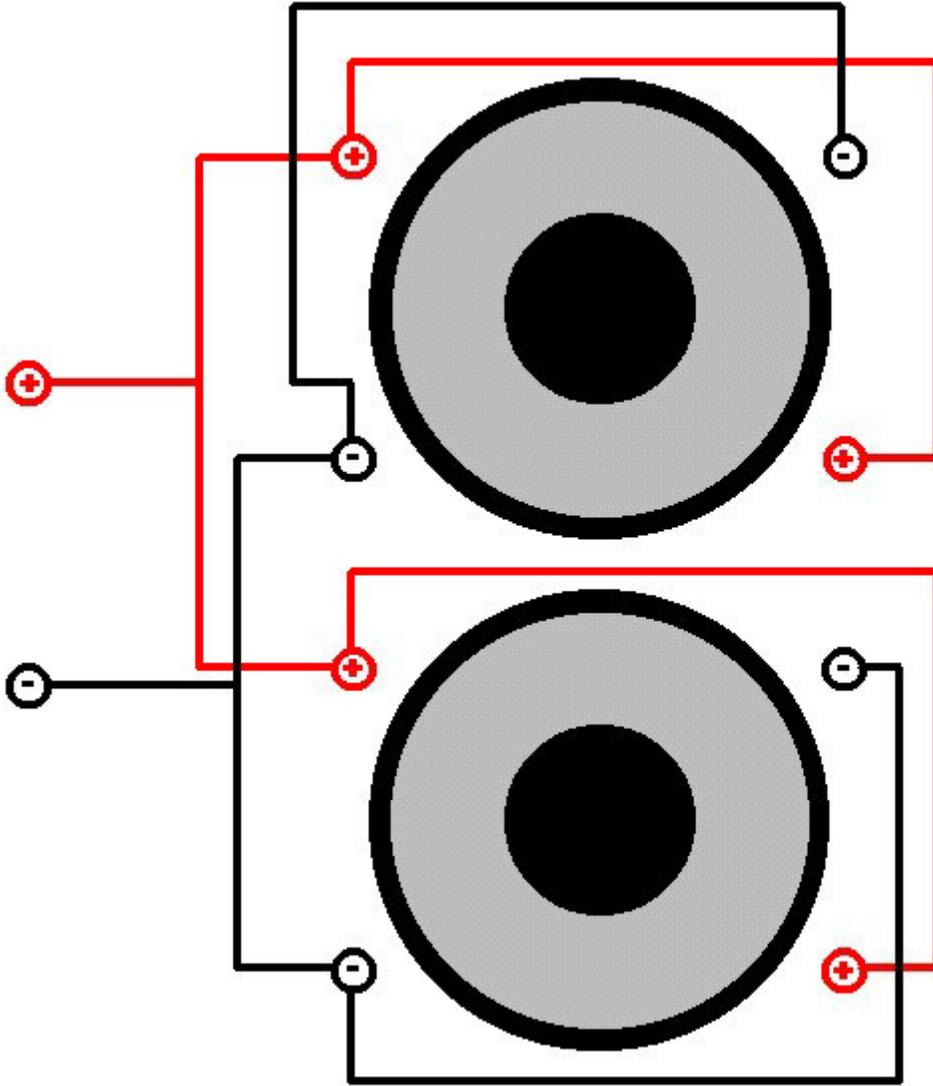
This method of wiring is the most common for DVC wiring. For our dual 8-ohm voice coil drivers, it results in a nominal 4-ohm load (parallel connecting voice coils of the same impedance results in half the impedance of either voice coil). This maximizes the output of our home plate amps, and also produces an impedance compatible with most car stereo equipment.

The other method of connecting DVC drivers is to wire the voice coils in series. This means connecting from the amp to the input of one voice coil, from the output of that voice coil to the input of the other voice coil, then from the output of the second voice coil back to the amp:



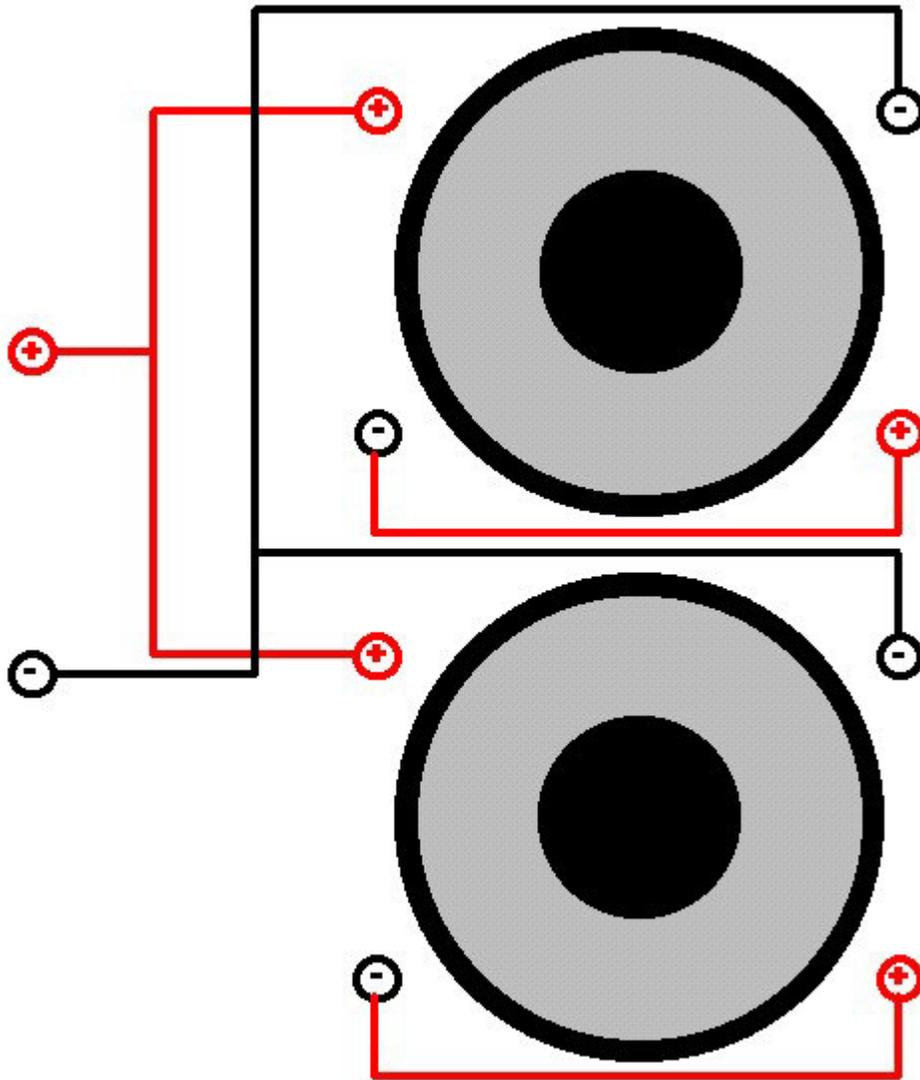
This method of wiring is not as widely used as the parallel case. For our dual 8-ohm voice coil drivers, it results in a nominal 16-ohm load (series connecting voice coils results in the sum of the impedances of all voice coils). This method of wiring is often used when wiring DVC drivers for use in large arrays, or in prosound applications (where 16 ohm loads are widely used).

Combinations of drivers make things a bit more difficult. Wiring two drivers in parallel with voice coils in parallel is often used in car audio. With nominal 8-ohm voice coil drivers, you would end up with 2 ohms, which can maximize power output of many car audio amps:



Note that all the positive terminals are connected together, and all the negative terminals are connected together. The total load, assuming dual 8-ohm voice coil drivers, is 2 ohms.

For home audio arrays, it is often desirable to keep the impedance between 4 and 8 ohms. For DVC drivers with 8-ohm voice coils, it is typical to wire each driver in series, and parallel the drivers:



This results in a final 8-ohm load, assuming each driver has dual 8-ohm voice coils. While this may not "maximize" power output of an amp optimized for a 4-ohm load, it will result in more linear output for the same power input as a single driver.

For additional driver connections, use combinations of the above wiring diagrams. For 4 DVC drivers (each with dual 8 ohm voice coils), wire all drivers in parallel together to create a nominal 1-ohm load. Using the same drivers, wiring each driver's voice coils in series and paralleling each driver will result in an effective 4-ohm load.

Is there anything I need to know before turning it on for the first time?

Once your sub is built put on some music or a movie and enjoy the fruits of your labor. Break-in will occur naturally as the driver suspension loosens up. It's nothing that need concern you though. Enjoy!

Care

The Exodus Subs are built to the highest standards, and are designed to require a minimum of care. Basically... use your head. If you decide to clean the cone, use non-solvent based cleaners. Water based products are the safest.

Warranty

Well, you've made it to the Exodus Audio Plain English Warranty.

We'll cover any manufacturing problems for:

- 12 months from date of purchase for any materials defect the transducer that isn't related to abuse.

This warranty covers things that are the direct result of manufacturing problems only. You connect the low-level inputs to the wall socket, or put a screwdriver through the cone, it's not covered. Likewise cigarette burns, cup rings, or other damage from abuse or misuse. Basically, if you take care of the unit, and treat it in a sane manner (don't use it as jack stand, etc.), then you've got nothing to worry about.

Any warranty claim must be handled through direct communication with us.

We reserve the right to act as the final authority with regard to a valid claim. We reserve the right to decide to repair or replace any problem that qualifies for warranty work. The customer is solely responsible for shipping charges related to warranty repair.

We don't want to scare you with our liability wavier but the Tempest-X is a very simple device that should give many years of service without need for service or repair.