



XTR8D2	XTR8D4
XTR10D2	XTR10D4
XTR12D2	XTR12D4
XTR15D2	XTR15D4

SUBWOOFERS

proud to be LOUD!

TABLE OF CONTENTS

Thank you for purchasing this Orion product. Orion products are specifically engineered and designed for the mobile audio environment. This manual contains important information about installation, set-up procedures and integrating your new Orion product into your vehicle. With proper care and installation, your new product will provide you with many years of high performance listening enjoyment. We recommend having an Authorized Orion Dealer install your new product for optimal performance. Before installing your new product, please read through the manual to fully understand the application.

Before making any electrical connections, make sure that you disconnect the battery's ground cable to prevent the possibility of short circuits or damage to your electronic equipment. If your vehicle's stereo (head unit) comes with an Anti-theft code, DO NOT disconnect the battery. If you have the access code for the stereo (head unit), please refer to the vehicle's owner's manual.

ATTENTION

FOR ANY QUESTIONS, ISSUES, RETURNS OR WARRANTY

DO NOT contact the retailer, we recommend that you contact our service department for any and all assistance at support@orioncaraudio.com.

We will do our best to resolve any problem in a professional and timely manner.

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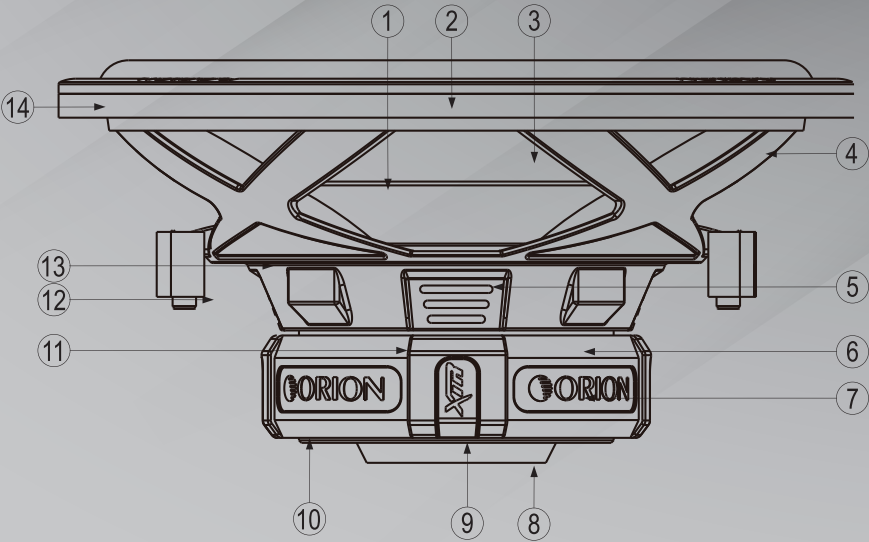
WHAT'S IN THE BOX

- 1 x XTR Subwoofer
- 1 x Owner's Manual
- 1 x Window Sticker



WARNING: This product can expose you to chemicals including DEHP which is known to the State of California to cause cancer, birth defects or other reproduction harm. For more information go to www.P65warnings.ca.gov.

FEATURES



1	Polypropylene dust cap - moisture and UV resistant.
2	SANTOPRENE surround for linear controlled long excursion.
3	Paper cone - moisture and UV resistant.
4	Custom stamped steel frame.
5	Kapton voice coil former.
6	TT steel front plate.
7	Large ceramic magnets.
8	Steel back plate/pole piece T yoke assembly.
9	1.125" vent. Part of the enhanced voice coil cooling system (forced convection).
10	PVC magnet protector.
11	High temperature Copper dual 2 ohm or dual 4 ohm voice coil.
12	Interlaced Conex spider with stitched and looped tinsel leads attached.
13	Spring loaded push terminals.
14	PVC Trim Ring.

SPECIFICATIONS

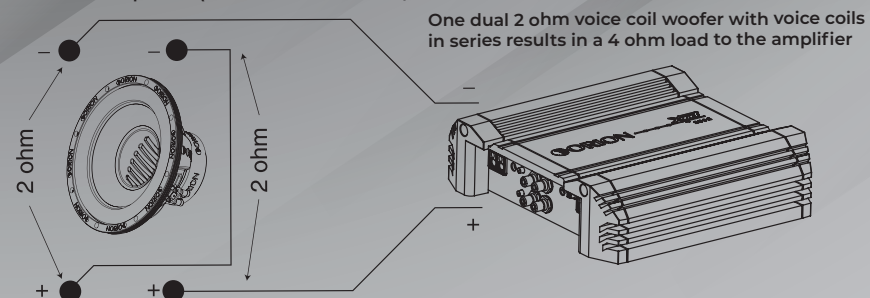
Model Number	XTR8D2	XTR8D4	XTR10D2	XTR10D4	XTR12D2	XTR12D4	XTR15D2	XTR15D4
Fs (free-air resonance, Hz)	33	33.1	29	30.3	26	26.2	21.6	24.6
Vas (equivalent compliance, cu. ft.)	0.578	0.674	0.988	1.088	3.164	4.312	6.006	5.184
Vas (equivalent compliance, liters)	16.382	19.098	27.976	30.835	89.635	122.165	170.144	146.858
Qms (Q, mechanical)	4.6	4.71	5.2	5.35	4.25	4.42	5.45	5.685
Qes (Q, electrical)	0.42	0.46	0.41	0.46	0.45	0.477	0.34	0.361
Qts (total driver Q)	0.44	0.42	0.41	0.43	0.45	0.43	0.32	0.339
Re (DC resistance, ohms)	1.8+1.8	3.6+3.6	1.8+1.8	3.6+3.6	1.8+1.8	3.6+3.6	1.8+1.8	3.6+3.6
Z (nominal impedance, ohms)	2+2	4+4	2+2	4+4	2+2	4+4	2+2	4+4
Efficiency (1W @ 1M, db)	83.4	83.6	84.7	86	86.2	86.8	88.4	89.2
Xmas (one way linear excursion, in.)	0.380	0.372	0.512	0.502	0.512	0.502	0.492	0.480
Xmas (one way linear excursion, mm)	9.65	9.45	13	12.75	13	12.75	12.5	12.2
RMS POWER WATTS	350	350	500	500	600	600	750	750
MAX MUSIC POWER WATTS	1400	1400	2000	2000	2400	2400	3000	3000
Mms (total moving mass, grams)	112.11	97.11	148.71	112.42	175.28	157.49	313.87	273.61
Cms (mechanical compliance, m/N)	0.20	0.24	0.16	0.19	0.21	0.28	0.17	0.15
Bl (motor strength, Tesla-M)	14.86	17.73	14.89	19.14	14.08	18.50	21.63	27.99
Sd (effective radiating area, sq. cm.)	238	238	346	346	543	543	835	835
Sd (effective radiating area, sq. in.)	36.89	36.89	53.63	53.63	84.17	84.17	129.43	129.43
Frequency Range (Hz)	20-300	20-300	20-250	20-250	20-250	20-250	20-250	20-250
Energy Bandwidth Product (EBP)**	82	71	59	61	45	49	56	60

SPECIFICATIONS

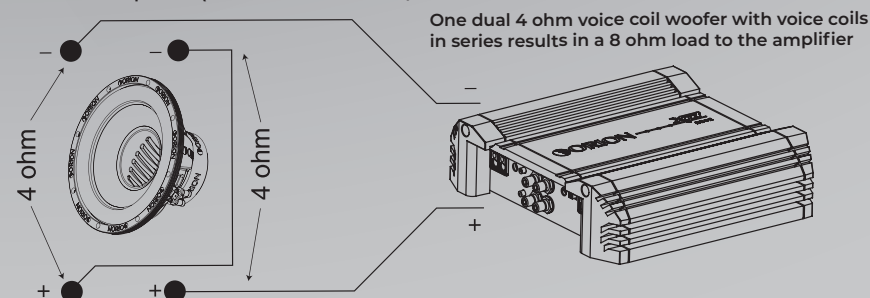
Model Number	XTR8D2	XTR8D4	XTR10D2	XTR10D4	XTR12D2	XTR12D4	XTR15D2	XTR15D4
Physical Dimensions								
Speaker Displacement (cu ft)	0.024	0.024	0.044	0.044	0.069	0.069	0.118	0.118
Speaker Outer Diameter (inches/mm)	8.54/217	8.54/217	10.35/263	10.35/263	12.56/319	12.56/319	15.31/389	15.31/389
Mounting hole diameter (inches/mm)	7.24/184	7.24/184	9.09/321	9.09/321	10.98/279	10.98/279	13.62/346	13.62/346
Mounting depth (inches/mm)	4.41/112	4.41/112	5.43/138	5.43/138	5.71/145	5.71/145	8.27/210	8.27/210
Magnet Weight (Oz)	60	60	60	60	60	60	87+87	87+87
Basket diameter (inches/mm)	8.42/214	8.42/214	10.12/257	10.12/257	12.32/313	12.32/313	15.15/385	15.15/385
Recommended Enclosures								
Typical sealed enclosure (cu. ft.)	0.77	0.77	1	1	1.5	1.5	2	2
Vented enclosure (cu. ft.) ***	0.79	0.79	1	1	1.5	1.5	3	3
Port tuning frequency (Hz)	45	45	40	40	40	40	33	33
Port diameter (inside, inches)	2.75	2.75	3	3	4	4	4	4
Port square equivalent (inches)	1.658*1.658	1.658*1.658	2.659*2.659	2.659*2.659	3.545*3.545	3.545*3.545	3.545*3.545	3.545*3.545
Port length (inches)	7.88	7.88	9.88	9.88	11.26	11.26	5.42	5.42

WIRING CONFIGURATION

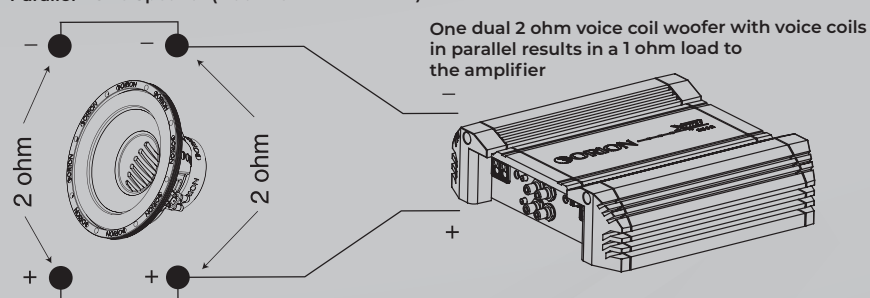
Series - One Speaker (Dual 2 ohm voice coils)



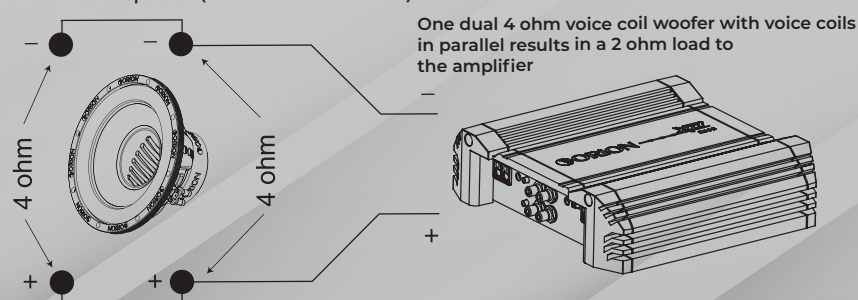
Series - One Speaker (Dual 4 ohm voice coils)



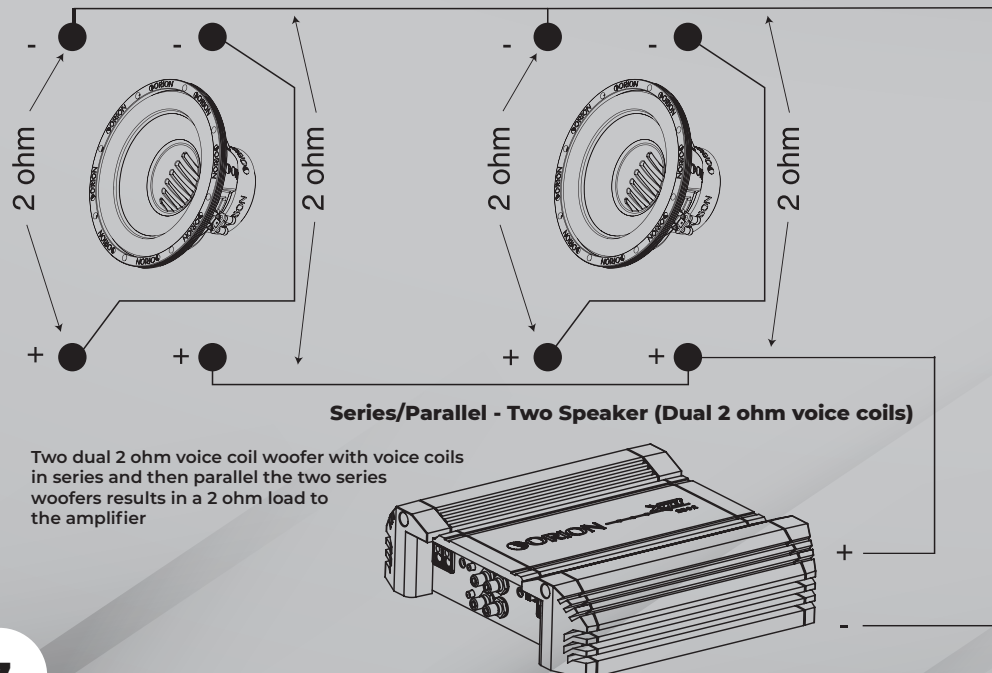
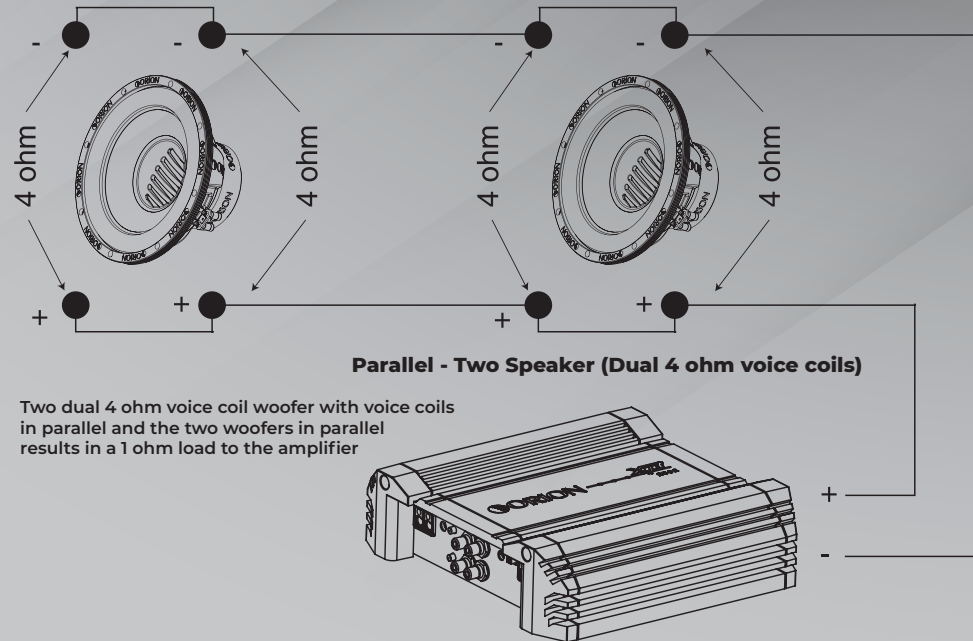
Parallel - One Speaker (Dual 2 ohm voice coils)



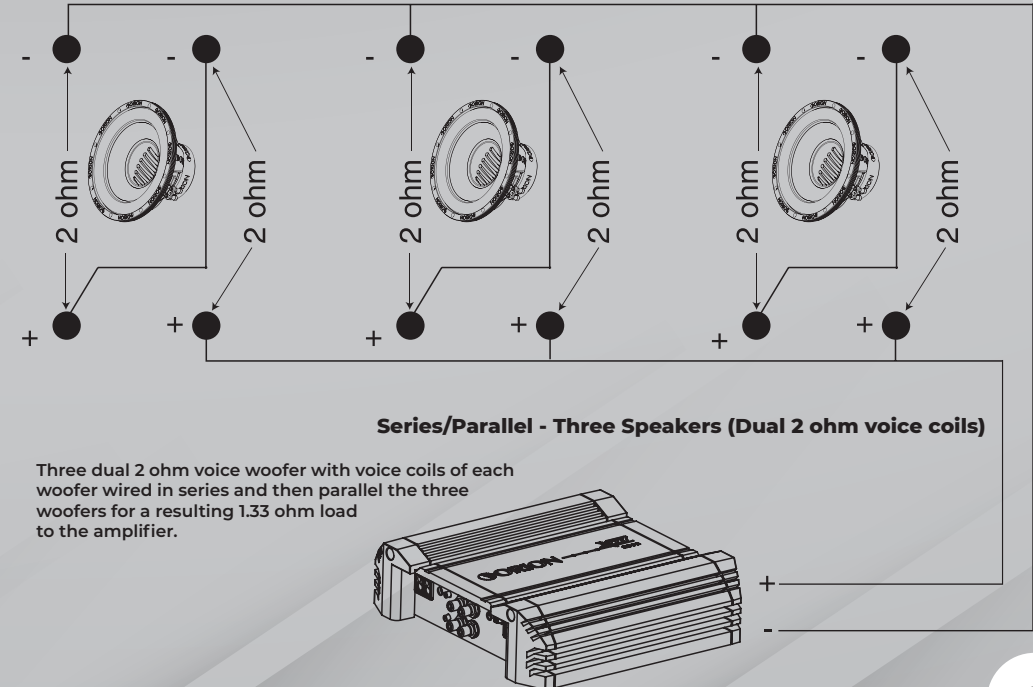
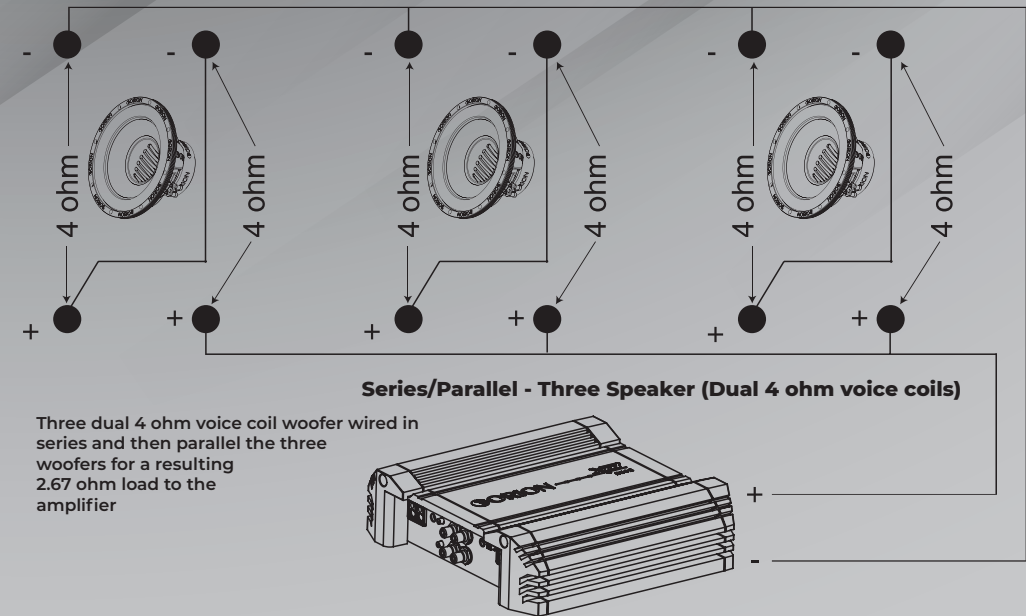
Parallel - One Speaker (Dual 4 ohm voice coils)



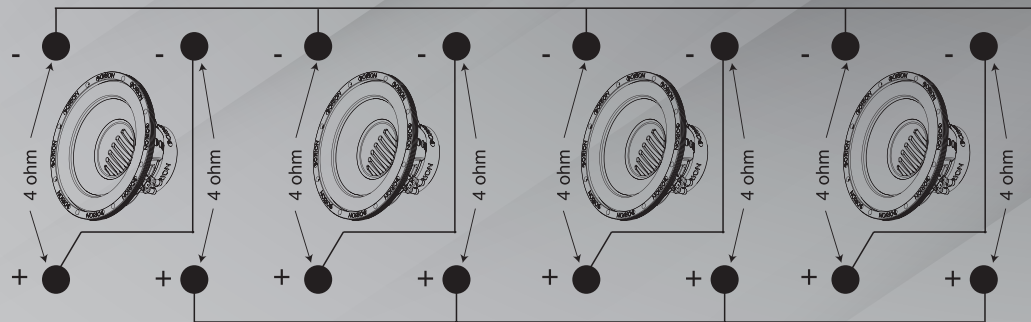
WIRING CONFIGURATION



WIRING CONFIGURATION

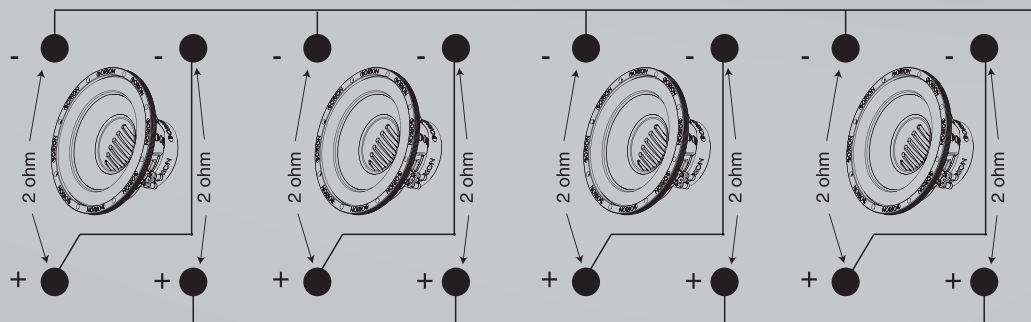
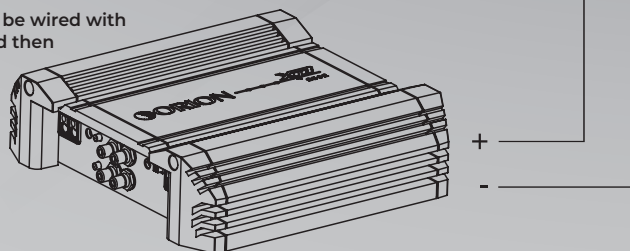


WIRING CONFIGURATION



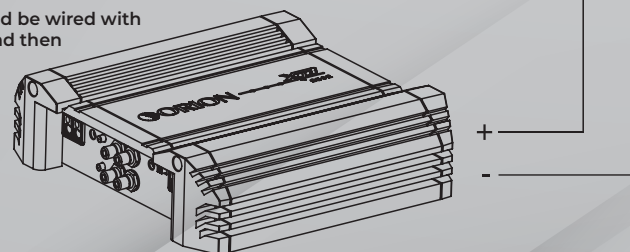
Series/Parallel - Four Speakers (Dual 4 ohm voice coils)

Four dual 4 ohm voice coil woofer should be wired with the voice coil on each woofer in series and then parallel the four woofer for a resulting 2 ohm load to the amplifier



Series/Parallel - Four Speakers (Dual 2 ohm voice coils)

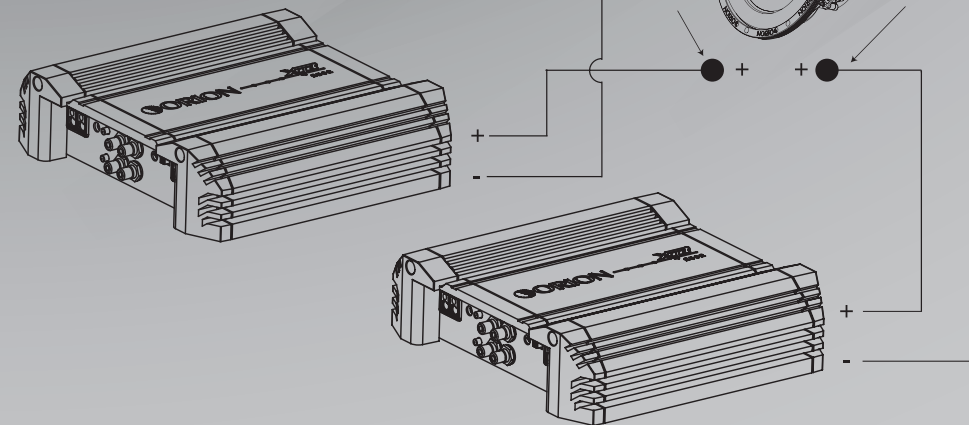
Four dual 2 ohm voice coil woofers should be wired with the voice coil on each woofer in series and then parallel the four woofer for a resulting 1 ohm load to the amplifier



WIRING CONFIGURATION

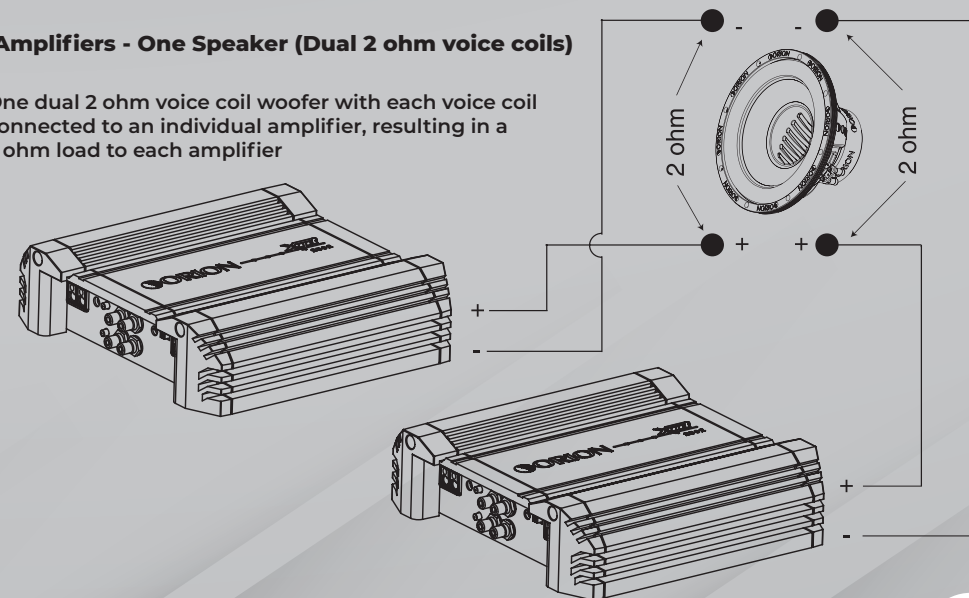
2 Amplifiers - One Speaker (Dual 4 ohm voice coils)

One dual 4 ohm voice coil woofer with each voice coil connected to an individual amplifier, resulting in a 4 ohm load to each amplifier



2 Amplifiers - One Speaker (Dual 2 ohm voice coils)

One dual 2 ohm voice coil woofer with each voice coil connected to an individual amplifier, resulting in a 2 ohm load to each amplifier



If you're planning to build your own enclosure and are confused in what type of enclosure best suits your needs this page will help you choose what enclosure best fits your needs. There are many different types of enclosures. The two most common used enclosures are sealed and vented enclosure. This page will show the advantages and disadvantages of the two enclosures.

ADVANTAGES OF A SEALED ENCLOSURES

- High power handling capability
- Great transient response
- Tolerant of minor enclosure size variation
- Easy to construct
- Smooth roll off (12dB/octave)

DISADVANTAGES OF A SEALED ENCLOSURES

- Requires a woofer with a long excursion for better low bass frequency response.
- Can have lower sensitivity than ported enclosures.
- When using high power and small enclosures, the woofer is not in an ideal cooling environment.
- Lower bass as compared to a properly tuned vented enclosure above the ported tuning frequency.

ADVANTAGES OF A VENTED ENCLOSURE

- Increased output around vented tuning
- Higher power handling above the port tuning frequency
- Extended frequency response
- Magnet is in a good cooling environment
- Handles higher bass frequencies with less distortion

DISADVANTAGES OF A VENTED ENCLOSURE

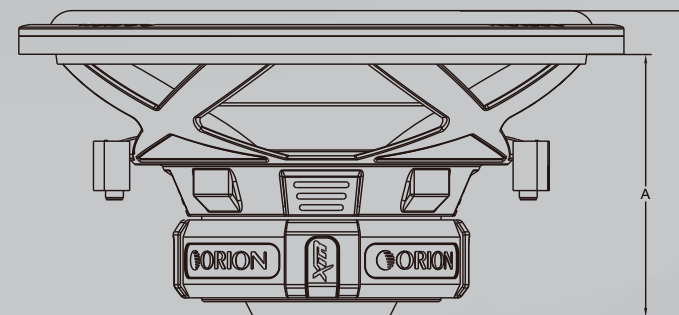
- Vented enclosure transient response is not as good as sealed boxes because of the resonant effect of the vent tuning
- Midrange sound coming from inside the enclosure through the vent can produce unpleasant sound coloration.
- Loss of cone movement control below vent tuning, which can result in high distortion and mechanical failure of the driver.
- Lower power handling below the port tuning frequency

ENCLOSURE DETAILS

1. Parameters listed are for conventional applications only, for further help please call Sound Pros Tech Support.
2. At least 0.75" MDF (Medium Density Fiberboard) is recommended for any XTR enclosure.
3. Recommended enclosures are NET box volumes, speaker and port displacement are calculated into the volume of the enclosure, you will need to add these volumes to calculate GROSS volume for the enclosure.

NOTES

- * Due to the high power capabilities and long excursion of the XTR woofers, the Thiele/Small Parameters were calculated and measured using Klippel analyzer system.
- ** Energy Bandwidth Product (EBP) is determined by the following formula $F_s/Q_{es}=EBP$. EBP values of 50 and lower suggest a sealed enclosure is best, 50 to 90 means the subwoofer versatile and 90 and above mean vented Enclosure is recommended.
- *** Subsonic filter should always be used and adjusted specifically for vented box designs.



	XTR8D2	XTR8D4	XTR10D2	XTR10D4	XTR12D2	XTR12D4	XTR15D2	XTR15D4
Dimensions inches/mm, Dimensions po/mm, Dimensiones plg./mm, Abmessungen Zoll/mm, Dimensioni pollici/millimetri, Dimensões polegadas/mm								
A	4.39"	4.39"	5.13"	5.13"	5.44"	5.44"	8.25"	8.25"
B	5.11"	5.11"	5.86"	5.86"	6.35"	6.35"	9.24"	9.24"

ENCLOSURE RECOMMENDATION

XTR8D2 & XTR8D4 SEALED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —

Type: Closed Box

Shape: Prism, Square

— Box Parameters —

Vb = 0.77 cu.ft

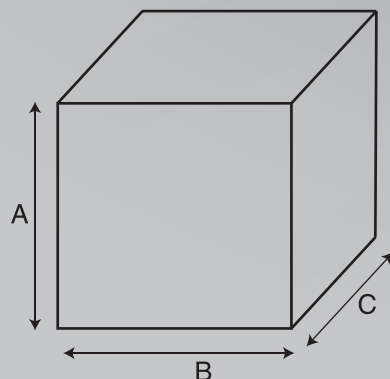
V(total) = 0.794 cu.ft

Qtc = 0.682

QL = 7

F3 = 44.92

Fill = none



External Dimensions

A = 12.25 in. (311 mm)

B = 12.25 in. (311 mm)

C = 11.5 in. (292 mm)

Internal Dimensions

A = 10.75 in. (273 mm)

B = 10.75 in. (273 mm)

C = 10 in. (254 mm)

Wall Thickness

Front = 0.75 in. (19 mm)

Side = 0.75 in. (19 mm)

—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (C) = 11.5 in. (292 mm)

width (B) = 12.25 in. (311 mm)

thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

height (A) = 10.75 in. (273 mm)

width (D) = 10.75 in. (273 mm)

thickness = 0.75 in. (19 mm)

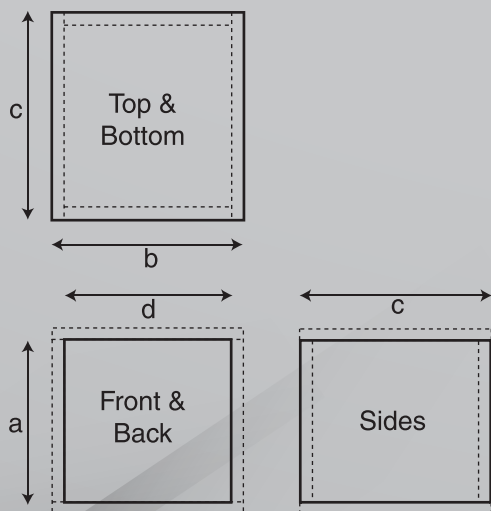
2 Sides: height (A) = 10.75 in. (273 mm)

depth (C) = 11.5 in. (292 mm)

thickness = 0.75 in. (19 mm)

—Driver Mounting—

Front



ENCLOSURE RECOMMENDATION

XTR8D2 & XTR8D4 VENTED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —

Type: Vented Box

Shape: Prism, Square

— Box Parameters —

Vb = 0.79 cu. ft

V(total) = 0.814 cu. ft

Fb = 45 Hz

QL = 6.733

F3 = 42 Hz

Fill = none

— Vents —

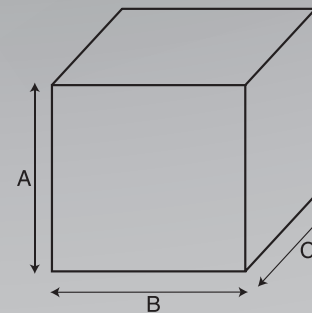
No. of Vents = 1

Vent shape = round

Vent ends = one flush

Dv = 2.75 in. (70 mm)

Lv = 7.88 in. (200 mm)



External Dimensions

A = 11 in. (279 mm)

B = 13 in. (330 mm)

C = 12 in. (305 mm)

Internal Dimensions

A = 9.5 in. (241 mm)

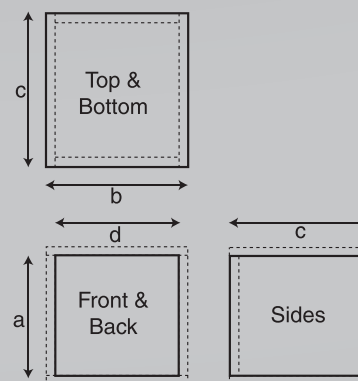
B = 11.5 in. (292 mm)

C = 10.5 in. (267 mm)

Wall Thickness

Front = 0.75 in. (19 mm)

Side = 0.75 in. (19 mm)



—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (C) = 12 in. (305 mm)

width (B) = 13 in. (330 mm)

thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

height (A) = 9.5 in. (241 mm)

width (D) = 11.5 in. (292 mm)

thickness = 0.75 in. (19 mm)

2 Sides:

height (A) = 9.5 in. (241 mm)

depth (C) = 12 in. (305 mm)

thickness = 0.75 in. (19 mm)

—Driver Mounting—

Mounting: Flush



Vent Parts

1 Duct:

Outside Diameter (e) = 2.75 in. (70 mm)

Inside Diameter (f) = 2.65 in. (67 mm)

Length (h) = 7.88 in. (200 mm)

ENCLOSURE RECOMMENDATION

XTR10D2 & XTR10D4 SEALED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —

Type: Closed Box

Shape: Prism, Square

— Box Parameters —

Vb = 1 cu.ft
V(total) = 1.055 cu.ft
Qtc = 0.692
QL = 7
F3 = 36.53 Hz
Fill = none

External Dimensions

A = 13.5 in. (343 mm)
B = 13.5 in. (343 mm)
C = 14.16 in. (360 mm)

Internal Dimensions

A = 12 in. (305 mm)
B = 12 in. (305 mm)
C = 12.66 in. (322 mm)

Wall Thickness

Front = 0.75 in. (19 mm)
Side = 0.75 in. (19 mm)

—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (c) = 14.16 in. (360 mm)
width (b) = 13.5 in. (343 mm)
thickness = 0.75 in. (19 mm)

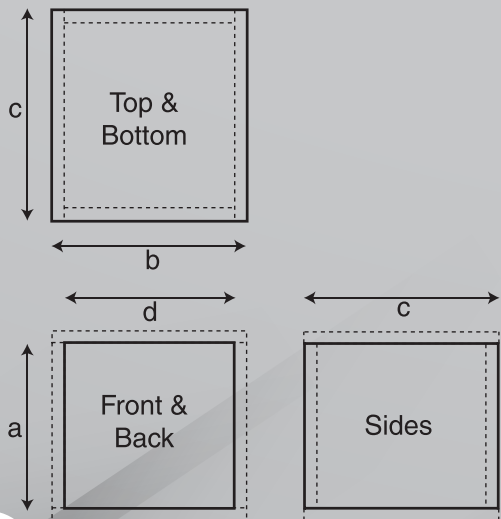
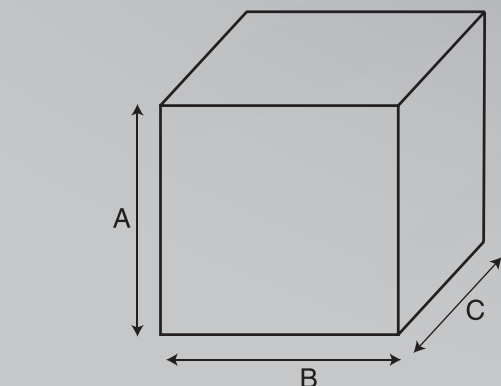
1 Front, 1 Back:

height (a) = 12 in. (305 mm)
width (d) = 12 in. (305 mm)
thickness = 0.75 in. (19 mm)

2 Sides: height (a) = 12 in. (305 mm)
depth (c) = 14.16 in. (360 mm)
thickness = 0.75 in. (19 mm)

—Driver Mounting—

Front



ENCLOSURE RECOMMENDATION

XTR10D2 & XTR10D4 VENTED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —

Type: Vented Box

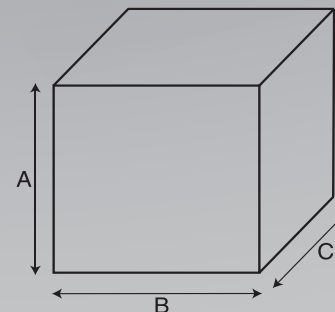
Shape: Prism, Square

— Box Parameters —

Vb = 1 cu.ft
V(total) = 1.111 cu.ft
Fb = 40 Hz
QL = 6.733
F3 = 32 Hz
Fill = none

— Vents —

No. of Vents = 1
Vent shape = round
Vent ends = one flush
Dv = 3 in. (76 mm)
Lv = 9.879 in. (251 mm)



External Dimensions

A = 12 in. (305 mm)
B = 15.5 in. (394 mm)
C = 14.57 in. (370 mm)

Internal Dimensions

A = 10.5 in. (267 mm)
B = 14 in. (356 mm)
C = 13.07 in. (305 mm)

Wall Thickness

Front = 0.75 in. (19 mm)
Side = 0.75 in. (19 mm)

—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (c) = 14.57 in. (370 mm)
width (b) = 15.5 in. (394 mm)
thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

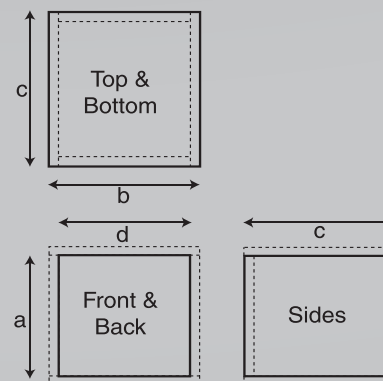
height (a) = 10.5 in. (267 mm)
width (d) = 14 in. (356 mm)
thickness = 0.75 in. (19 mm)

2 Sides:

height (a) = 10.5 in. (267 mm)
depth (c) = 14.57 in. (370 mm)
thickness = 0.75 in. (19 mm)

—Driver Mounting—

Mounting: Flush



Vent Parts

1 Duct:

outside diameter (e) = 3.25 in. (83 mm)
inside diameter (g) = 3 in. (76 mm)
length (h) = 9.879 in. (251 mm)

ENCLOSURE RECOMMENDATION

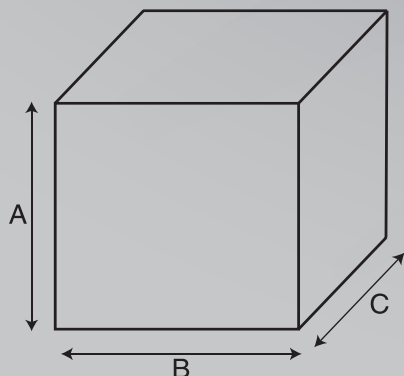
XTR12D2 & XTR12D4 SEALED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —
Type: Closed Box
Shape: Prism, Square

— Box Parameters —

Vb = 1.5 cu.ft
V(total) = 1.601 cu.ft
Qtc = 0.732
QL = 7
F3 = 37.35 Hz
Fill = none



External Dimensions

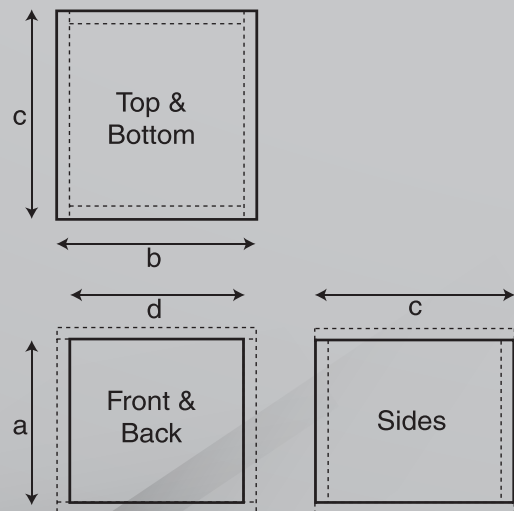
A = 16 in. (406 mm)
B = 16 in. (406 mm)
C = 14.66 in. (372 mm)

Internal Dimensions

A = 14.5 in. (368 mm)
B = 14.5 in. (368 mm)
C = 13.16 in. (334 mm)

Wall Thickness

Front = 0.75 in. (19 mm)
Side = 0.75 in. (19 mm)



—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (c) = 14.66 in. (372 mm)
width (b) = 16 in. (406 mm)
thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

height (a) = 14.5 in. (368 mm)
width (d) = 14.5 in. (368 mm)
thickness = 0.75 in. (19 mm)

2 Sides:

height (a) = 14.5 in. (368 mm)
depth (c) = 14.66 in. (372 mm)
thickness = 0.75 in. (19 mm)

Driver Mounting
Mounting: Front

ENCLOSURE RECOMMENDATION

XTR12D2 & XTR12D4 VENTED ENCLOSURE RECOMMENDATIONS

Box Properties

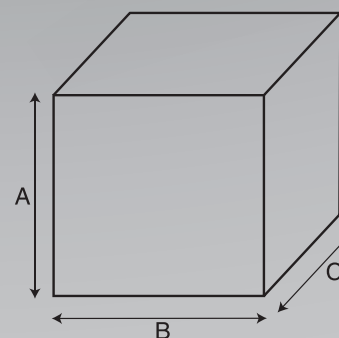
— Description —
Type: Vented Box
Shape: Prism, Square

— Box Parameters —

Vb = 1.5 cu.ft
V(total) = 1.705 cu.ft
Fb = 40 Hz
QL = 6.288
F3 = 33.47 Hz
Fill = none

— Vents —

No. of Vents = 1
Vent shape = round
Vent ends = one flush
Dv = 4 in. (102 mm)
Lv = 11.26 in. (286 mm)



External Dimensions

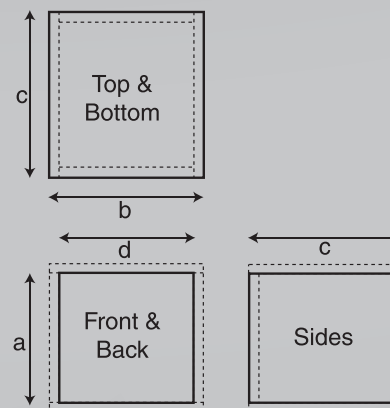
A = 13.5 in. (343 mm)
B = 18.5 in. (470 mm)
C = 15.95 in. (405 mm)

Internal Dimensions

A = 12 in. (305 mm)
B = 17 in. (432 mm)
C = 14.45 in. (367 mm)

Wall Thickness

Front = 0.75 in. (19 mm)
Side = 0.75 in. (19 mm)



—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (c) = 15.95 in. (405 mm)
width (b) = 18.5 in. (470 mm)
thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

height (a) = 12 in. (305 mm)
width (d) = 17 in. (432 mm)
thickness = 0.75 in. (19 mm)

2 Sides:

height (a) = 12 in. (305 mm)
depth (c) = 15.95 in. (405 mm)
thickness = 0.75 in. (19 mm)

—Driver Mounting—

Mounting: Flush

Vent Parts

1 Duct:

outside diameter (e) = 4.25 in. (108 mm)
inside diameter (g) = 4 in. (102 mm)
length (h) = 11.26 in. (286 mm)



ENCLOSURE RECOMMENDATION

XTR15D2 & XTR15D4 SEALED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —

Type: Closed Box

Shape: Prism, Square

— Box Parameters —

Vb = 2 cu.ft

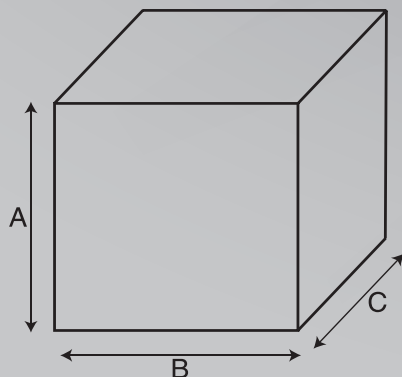
V(total) = 2.182 cu.ft

Qtc = 0.954

QL = 6.519

F3 = 33.02 Hz

Fill = none



External Dimensions

A = 17.5 in. (445 mm)

B = 17.5 in. (445 mm)

C = 16.23 in. (412 mm)

Internal Dimensions

A = 16 in. (406 mm)

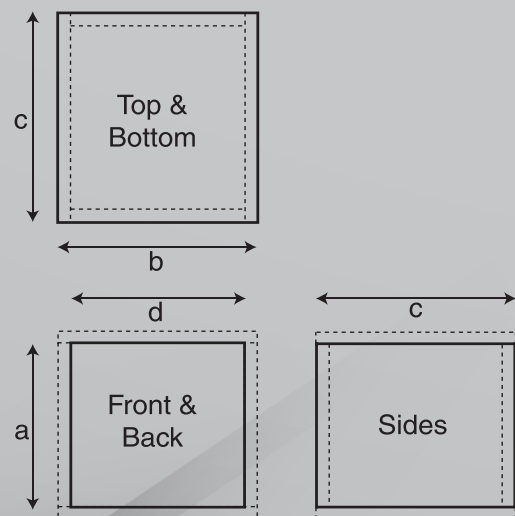
B = 16 in. (406 mm)

C = 14.73 in. (14.73 mm)

Wall Thickness

Front = 0.75 in. (19 mm)

Side = 0.75 in. (19 mm)



—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (c) = 16.23 in. (412 mm)

width (b) = 17.5 in. (445 mm)

thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

height (a) = 16 in. (406 mm)

width (d) = 16 in. (406 mm)

thickness = 0.75 in. (19 mm)

2 Sides:

height (a) = 16 in. (406 mm)

depth (c) = 16.23 in. (412 mm)

thickness = 0.75 in. (19 mm)

Driver Mounting

Mounting: Front

ENCLOSURE RECOMMENDATION

XTR15D2 & XTR15D4 VENTED ENCLOSURE RECOMMENDATIONS

Box Properties

— Description —

Type: Vented Box

Shape: Prism, Square

— Box Parameters —

Vb = 3 cu.ft

V(total) = 3.247 cu.ft

Fb = 36 Hz

QL = 5

F3 = 30.63 Hz

Fill = none

— Vents —

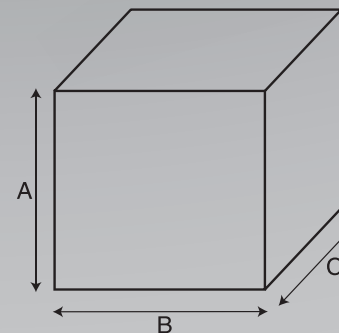
No. of Vents = 1

Vent shape = round

Vent ends = one flush

Dv = 4 in. (102 mm)

Lv = 5.422 in. (138 mm)



External Dimensions

A = 18.5 in. (470 mm)

B = 23.5 in. (597 mm)

C = 16.58 in. (421 mm)

Internal Dimensions

A = 17 in. (432 mm)

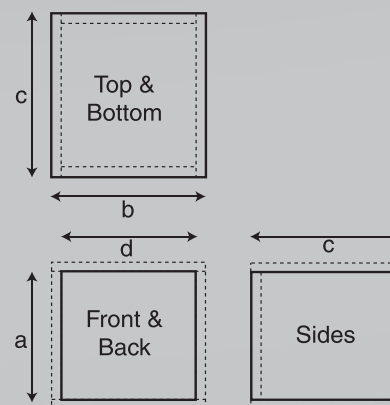
B = 22 in. (559 mm)

C = 15.08 in. (383 mm)

Wall Thickness

Front = 0.75 in. (19 mm)

Side = 0.75 in. (19 mm)



—Box Parts—

Box Shape: Square Prism

1 Top, 1 Bottom:

depth (c) = 16.58 in. (421 mm)

width (b) = 23.5 in. (597 mm)

thickness = 0.75 in. (19 mm)

1 Front, 1 Back:

height (a) = 17 in. (432 mm)

width (d) = 22 in. (559 mm)

thickness = 0.75 in. (19 mm)

2 Sides:

height (a) = 17 in. (432 mm)

depth (c) = 16.58 in. (421 mm)

thickness = 0.75 in. (19 mm)

Driver Mounting

Mounting: Flush

Vent Parts --- Square

1 Duct:

outside diameter (e) = 4.25 in. (108 mm)

inside diameter (g) = 4 in. (102 mm)

length (h) = 5.422 in. (138 mm)



Investigate the layout of your vehicle thoroughly before drilling or cutting. Take care when you work near the gas tank, gas lines, hydraulic lines, electrical components and electrical wiring. Do not use the equipment unmounted. Attach this system securely to prevent damage, particularly in the event of an accident or aggressive driving. Do not mount the system so that wire connections are unprotected or are subjected to pinching or damage from nearby objects. Before connecting or disconnecting power connections at the system power terminals, disconnect the +12V DC wire at the battery end. Confirm that your source unit and other equipment are turned off while connecting the input terminals. If you need to replace the power fuse, replace it only with a fuse identical to the amperage recommended. Using a fuse of different type or rating may result in damage to the system, which is not covered by the manufacturer's warranty. Do not install any product where it may be subjected to excessive heat, moisture and dust or where it may be repeatedly kicked, brushed or bumped. Make absolutely sure that the terminals for the products are connected to the proper inputs and outputs from the music source. Never run the wiring on the outside of the vehicle or under it where it can be damaged by road hazards or any moving parts of the vehicle. Use existing wire channels, sills, panels and molding strips inside the vehicle to hide the wiring for safety and a neat appearance.

DISCLAIMER

IMPORTANT: Never cut any metal that is an integral part of the vehicle's safety or structural support system. If you are unsure, it is best to have the product professionally installed by an Authorized ORION Dealer. Never sacrifice your safety for sound.

Symptom	Check Point	Remedy
No Soud	Is the amplifier power LED illuminated?	1. Check fuses in amplifier 2. Check turn-on lead 3. Check signal lead 4. Check gain control 5. Check source unit volume 6. Clean contacts on fuse holders
	Is the amplifier overload LED illuminated?	Check speaker for short or amplifier for overheating
	Check impedance with Ohm meter	If no reading, replace speaker
	Check that the speaker moves freely	If speaker won't move, replace speaker
Speaker is making a rattling noise	Check that speaker is secured properly and tightened with screws	Tighten mounting screws
	Check enclosure construction	Check that the enclosure is debris free
	Check speaker polarity	Correct polarity
No sound from one coil	Check speaker leads	1. Inspect for short circuits 2. Check for open connections Reverse left and right speaker leads to determine if it is occurring before the speaker
Speaker is distorting at high volume levels	Check speaker load impedance capabilities for the amplifier	Confirm that the speaker load impedance recommendations are followed. Check the wiring configuration of the speaker. (To verify proper load impedance, use an OHM meter to measure the total load for each channel of the amplifier.
	Verify that amplifier and/or crossover settings are correct	Select low-pass setting

WARRANTY

Orion, warrants this product against all defects in material and workmanship for a period of one (1) year from the date of original purchase provided it was purchased from an Authorized Orion Dealer.

The conditions of this warranty and the extent of the responsibility of Orion, under this warranty are as follows:

1. DATED PROOF OF PURCHASE IS REQUIRED FOR WARRANTY SERVICE OF THIS PRODUCT. Information about Orion authorized warranty service may also be obtained at www.orioncaraudio.com or by emailing Orion at support@orioncaraudio.com.
2. This warranty will become void if service is performed by anyone other than an approved Orion Warranty Service Center.
3. This warranty does not apply to any product which has been subjected to misuse, neglect or accident, or which has had the warranty seal broken, serial number altered, defaced or removed, or which has been connected, installed adjusted or repaired other than in accordance with the instructions furnished by Orion.
4. This warranty does not cover car static, electrical interference, adjustments or labor costs for the removal or reinstallation of the unit for repair.
5. The sole responsibility of Orion under this warranty shall be limited to the repair or replacement thereof, at the sole discretion of Orion.
6. If it becomes necessary to send the product or any defective part to Orion or an authorized service station, the product must be shipped in its original or equivalent carton, fully insured, with shipping charges prepaid. Orion will not assume any responsibility for any loss or damage incurred in shipping.

WARRANTY

7. This warranty is not transferable and protects the original purchaser provided they reside and made their purchase in the United States. International consumers may contact their local retailer or distributor for warranty information.
8. ALL IMPLIED WARRANTIES, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, SHALL HAVE NO GREATER DURATION THAN THE WARRANTY PERIOD SET FORTH ABOVE. UNDER NO CIRCUMSTANCES SHALL ORION BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT BECAUSE SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.
9. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.
10. Should you have any difficulties with the performance of this product during warranty or with any Orion authorized service center, you may contact Orion by emailing us at support@orioncaraudio.com.

ATTENTION

FOR ANY QUESTIONS, ISSUES, RETURNS OR WARRANTY

DO NOT contact the retailer, we recommend that you contact our service department for any and all assistance at support@orioncaraudio.com. We will do our best to resolve any problem in a professional and timely manner.



NOTES

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NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



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