



RFP2208

RFP2210

RFP2212

RFP2215



RFD1208

RFD1210

RFD1212

RFD1215

RFD1218



RFR2210

RFR2212

RFR2215



INSTALLATION & OPERATION

SPECIFICATIONS

MODEL	PUNCH HE2 DVC				PUNCH HX2 DVC				POWER DVC				
	RFP2208	RFP2210	RFP2212	RFP2215	RFD1208	RFD1210	RFD1212	RFD1215	RFD1218	RFRT210	RFRT212	RFRT212	RFRT215
FEATURES													
Cone	SPP	SPP	SPP	SPP	SPP	SPP	SPP	SPP	SPP	SPP	SPP	SPP	SPP
Surround	Foam	Foam	Foam	Foam	Santoprene	Santoprene	Santoprene	Santoprene	Santoprene	Rubber	Rubber	Rubber	Rubber
Basket	LX Stamped	LX Stamped	LX Stamped	LX Stamped	LX Cast	LX Cast	LX Cast	LX Cast	LX Cast	Cast	Cast	Cast	Cast
Voice Coil Diameter	2.0	2.5	2.5	2.5	2.5	3.0	3.0	3.0	4.0	3"	4"	4"	4"
Aluminum Voice Coil	X	X	X	X	X	X	X	X	X	X	X	X	X
Hyper-Extended Pole Piece	X	X	X	X	X	X	X	X	X	X	X	X	X
Vented Pole Piece	X	X	X	X	X	X	X	X	X	X	X	X	X
Aero-Vent. Back Plate	X	X	X	X	X	X	X	X	X	X	X	X	X
Magnet Bumper	X	X	X	X	X	X	X	X	X	X	X	X	X
ENCLOSURE VOLUME													
Sealed (ft ³)	0.30	0.75	1.25	2.5	0.30	0.75	1.25	2.5	4.0	0.75	1.25	1.25	2.5
Sealed (liters)	8.50	21.24	35.40	70.79	8.50	21.24	35.40	70.79	113.28	21.24	35.40	35.40	70.79
Vented (ft ³)	0.625	1.0	2.0	2.5	0.625	1.0	2.0	2.5	4.0	1.0	2.0	2.0	2.5
Vented (liters)	17.70	28.32	56.63	70.79	17.70	28.32	56.63	70.79	113.28	28.32	56.63	56.63	70.79

MODEL	PUNCH HE2 DVC				PUNCH HX2 DVC				POWER DVC			
	RFP2208	RFP2210	RFP2212	RFP2215	RFD1208	RFD1210	RFD1212	RFD1215	RFD1218	RFR1210	RFR1212	RFR1215
SPECIFICATIONS												
Nominal Impedance	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2	4Ω x 2
Fs	35	30	28	22	40	30	26	24	22	28Hz	24Hz	20Hz
Qts	.37	.49	.51	.51	.50	.40	.39	.48	.48	0.34	0.38	0.35
Vas (ft³)	.460	1.483	3.178	9.182	1.060	3.108	4.238	7.063	14.126	1.060	3.29	9.182
Vas (liters)	13	42	90	260	30	88	120	200	400	30	93	260
Xmax (in.)	.43	.51	.51	.51	.55	.55	.55	.55	.75	0.48	0.53	0.53
Xmax (mm)	11.0	13.0	13.0	13.0	14.0	14.0	14.0	14.0	19.0	12.3	13.5	13.5
Sensitivity (dB @1w/1m)	84	85	87	89	83	85	88	89	90	85	87	89
Power Handling (RMS/Peak)	250/500	400/800	400/800	500/1000	400/800	500/1000	500/1000	600/1200	600/1200	500/1000	1000/2000	1000/2000
Speaker Displacement (ft³)	.035	.06	.085	.135	.05	.12	.21	.25	.30	.12	.21	0.25
Mounting Diameter (in.)	7-1/16	9-1/2	11-1/8	13-7/8	6-7/8	9-3/16	10-13/16	13-13/16	16-5/16	9-5/32	11	13-7/8
Mounting Diameter (mm)	179	241	283	252	175	233	275	351	414	233	279	352
Mounting Depth (in.)	4-11/16	5-7/8	6-5/16	7-11/16	4-13/16	5-7/16	5-13/16	6-15/16	8-11/16	5-5/16	6-1/32	7-1/4
Mounting Depth (mm)	119	149	160	195	122	138	148	176	221	135	153	184

Dear Customer,

Congratulations on your purchase of the world's finest brand of car audio speakers. At Rockford Fosgate we are fanatics about musical reproduction at its best, and we are pleased you chose our product. Through years of engineering expertise, hand craftsmanship and critical testing procedures, we have created a wide range of products that reproduce music with all the clarity and richness you deserve.

For maximum performance we recommend you have your new Rockford Fosgate product installed by an Authorized Rockford Fosgate Dealer, as we provide specialized training through Rockford Technical Training Institute (RTTI). Please read your warranty and retain your receipt and original carton for possible future use.

Great product and competent installations are only a piece of the puzzle when it comes to your system. Make sure that your installer is using 100% authentic installation accessories from Connecting Punch in your installation. Connecting Punch has everything from RCA cables and speaker wire to Power line and battery connectors. Insist on it! After all, your new system deserves nothing but the best.

To add the finishing touch to your new Rockford Fosgate image order your Rockford wearables, which include everything from T-shirts and jackets to hats and sunglasses.

To get a free brochure on Rockford Fosgate products and Rockford wearables, in the U.S. call 480-967-3565 or FAX 480-967-8132. For all other countries, call +001-480-967-3565 or FAX +001-480-967-8132.

PRACTICE SAFE SOUND™

CONTINUOUS EXPOSURE TO SOUND PRESSURE LEVELS OVER 100dB MAY CAUSE PERMANENT HEARING LOSS. HIGH POWERED AUTOSOUND SYSTEMS MAY PRODUCE SOUND PRESSURE LEVELS WELL OVER 130dB. USE COMMON SENSE AND PRACTICE SAFE SOUND.

If, after reading your manual, you still have questions regarding this product, we recommend that you see your Rockford Fosgate dealer. If you need further assistance, you can call us direct at 1-800-669-9899. Be sure to have your serial number, model number and date of purchase available when you call.

The serial number can be found on the outside of the box. Please record it in the space provided below as your permanent record. This will serve as verification of your factory warranty and may become useful in recovering your speaker if it is ever stolen.

Serial Number: _____

Model Number: _____

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INTRODUCTION

The Punch HE2 DVC, Punch HX2 DVC, Power DVC are high performance, low frequency drivers with dual 4 ohm voice coils. These woofers were designed for use primarily in small sealed & small ported enclosures. By utilizing the latest materials and construction techniques, we are able to offer a speaker with high output at low frequencies while requiring a minimum of operating space.

CONTENTS

Punch HX2 DVC

Power HE2 DVC Woofer
Installation & Operation Manual
4 foam gasket segments

Punch HX2 DVC

Power HX2 DVC Woofer
Installation & Operation Manual
4 foam gasket segments

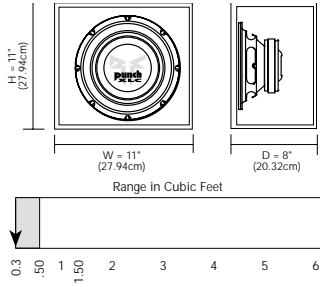
Power DVC

Power DVC Woofer
Installation & Operation Manual
4 foam gasket segments

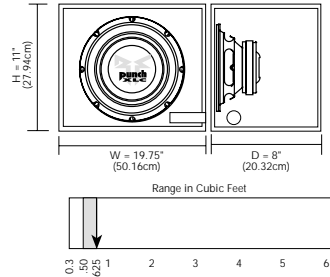
RECOMMENDED ENCLOSURES

Punch HE2 8" - Punch HX2 8"

Recommended Sealed 0.30ft³ (8.50L)



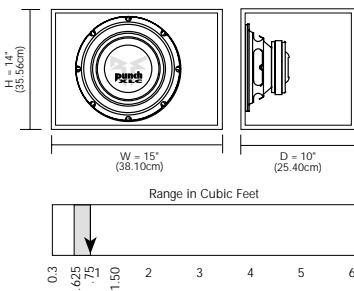
Recommended Vented 0.625 ft³ (17.70L)



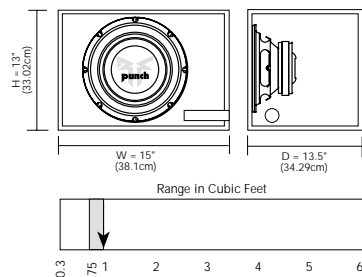
*Fb = 40 Hz Pd = 2.5" (6.35cm)
PI = 11.25" (28.57cm)

Punch HE2 10" - Punch HX2 10" - Power DVC 10"

Recommended Sealed 0.75ft³ (21.24L)



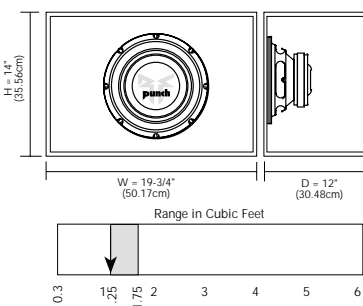
Recommended Vented 1.0 ft³ (28.32L)



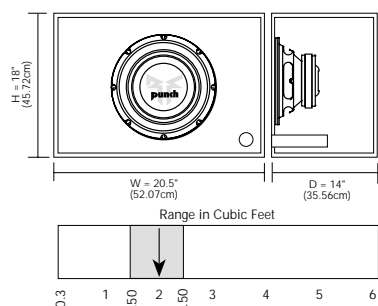
*Fb = 35 Hz Pd = 3" (7.62cm)
PI = 13.25" (33.65cm)

Punch HE2 12" - Punch HX2 12" - Power DVC 12"

Recommended Sealed 1.25ft³ (35.40L)



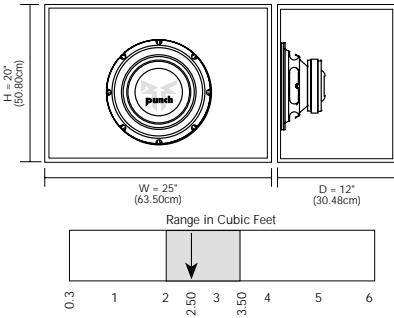
Recommended Vented 2.0 ft³ (56.63L)



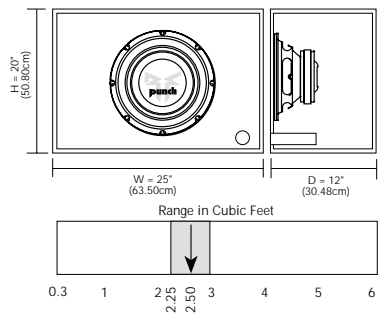
*Fb=35 Hz Pd=4" (10.16cm)
PI=10.75" (27.30cm)

Punch HE2 15" - Punch HX2 15" - Power DVC 15"

Recommended Sealed 2.5ft³ (70.79L)



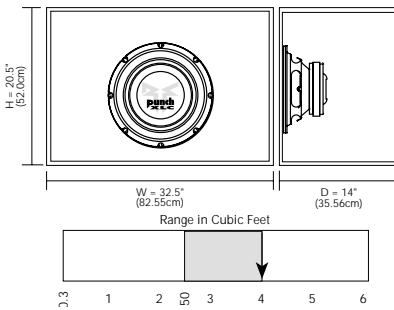
Recommended Vented 2.5ft³ (70.79L)



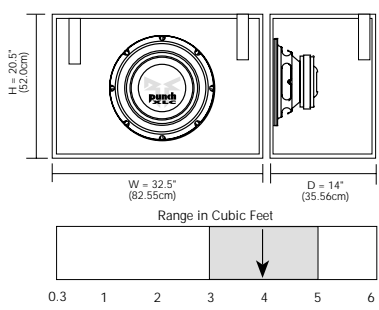
*Fb = 35 Hz Pd = 4" (10.16cm)
PI = 8" (20.32cm)

Punch HX2 18"

Recommended Sealed 4.0ft³ (113.27L)



Recommended Vented 4.0ft³ (113.27L)



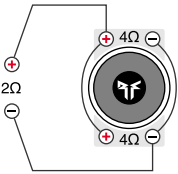
*Fb = 30 Hz Pd = 2x4" (2x10.16cm)
PI = 14.5" (36.83cm)

Fb = Tuning Frequency
Pd = Port Diameter
PI = Port Length

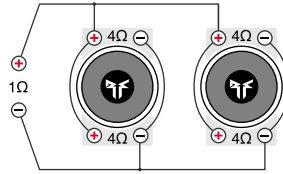
WIRING CONFIGURATIONS

By varying the wiring configuration of your speakers you can create an impedance load to match your system. Since each voice coil of a DVC speaker carries its own impedance, altering the wiring configurations give a range of options for impedance load. Series, Parallel, or Series-Parallel wiring configurations are different techniques for wiring speakers that provide different loads. Series configuration is a string method where speakers are wired end to end. Parallel configuration uses two or more speakers wired across common terminals. Series-Parallel configuration combines both techniques. Choose the wiring diagram below that corresponds the number of woofers and the impedance of your amplifier.

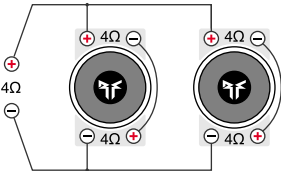
(1) 4 ohm DVC Speaker = 2 ohm Load



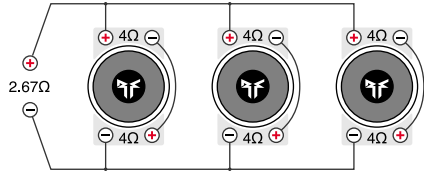
(2) 4 ohm DVC Speakers = 1 ohm Load



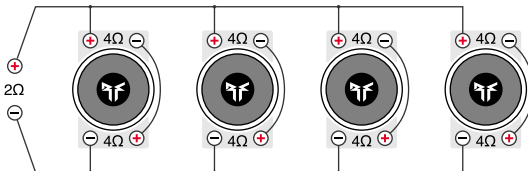
(2) 4 ohm DVC Speakers = 4 ohm Load



(3) 4 ohm DVC Speakers = 2.67 ohm Load



(4) 4 ohm DVC Speakers = 2 ohm Load



BUILDING AN ENCLOSURE

To work properly, the walls of the enclosure must be rigid and not flex when subjected to the high pressures generated by the speaker's operation. For optimum performance, we recommend using 3/4" MDF (Medium Density Fiberboard) and internal bracing. The enclosure should be glued together and secured with nails or screws. MDF is porous; therefore, it is suggested to also seal the outside walls with polyurethane.

CALCULATING VOLUME

Calculating volume is merely a matter of measuring the dimensions in inches and using the formula:

If two facing sides are of uneven length, add them together and divide by two to take the average. Using this number will give you the volume without the necessity of calculating the box in sections and adding the sections together. The thickness of the baffle material reduces the internal volume so this must be subtracted from the outside dimensions to determine the internal volume. The speaker itself also reduces the internal volume. The amount of air displaced by each model is listed on the specification sheet and should also be subtracted from the gross volume calculation.

$$\text{Box Volume} = \frac{\text{Height" x Width" x Depth"}}{1728 \text{ cu. in.}}$$

(cubic feet)

SUBWOOFER CROSSOVERS

There are two operational types of crossovers, passive and active. Passive crossovers (coils or inductors) are placed on the speaker leads between the amplifier and speaker. An active crossover is an electronic filter which separates the audio signal fed to different amplifiers. *For optimum subwoofer performance, we recommend using an active 80-100Hz low-pass crossover at 12dB/octave.*

LIMITED WARRANTY INFORMATION

Rockford Corporation offers a limited warranty on Rockford Fosgate products on the following terms:

- **Length of Warranty**

1 year on speakers	90 days on speaker B-stock (receipt required)
3 years on electronics	90 days on electronic B-stock (receipt required)
1 years on source units	

- **What is Covered**

This warranty applies only to Rockford Fosgate products sold to consumers by Authorized Rockford Fosgate Dealers in the United States of America or its possessions. Product purchased by consumers from an Authorized Rockford Fosgate Dealer in another country are covered only by that country's Distributor and not by Rockford Corporation.

- **Who is Covered**

This warranty covers only the original purchaser of Rockford product purchased from an Authorized Rockford Fosgate Dealer in the United States. In order to receive service, the purchaser must provide Rockford with a copy of the receipt stating the customer name, dealer name, product purchased and date of purchase.

- Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Rockford's discretion.

- **What is Not Covered**

1. Damage caused by accident, abuse, improper operations, water, theft
2. Any cost or expense related to the removal or reinstallation of product
3. Service performed by anyone other than Rockford or an Authorized Rockford Fosgate Service Center
4. Any product which has had the serial number defaced, altered, or removed
5. Subsequent damage to other components
6. Any product purchased outside the U.S.
7. Any product not purchased from an Authorized Rockford Fosgate Dealer

- **Limit on Implied Warranties**

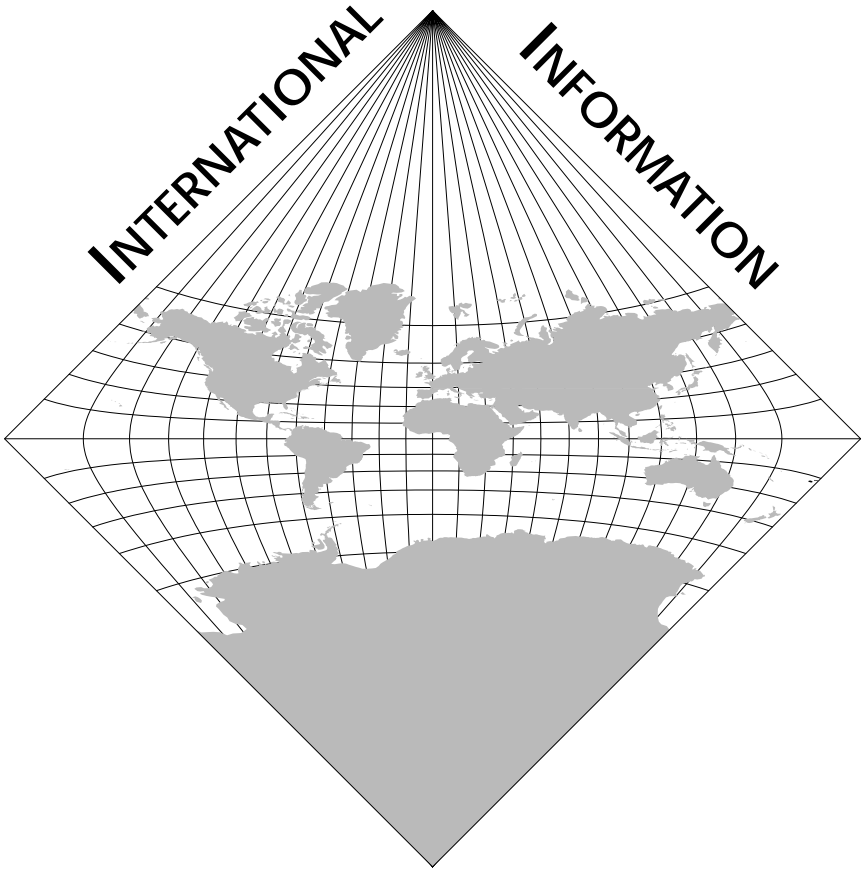
Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Rockford Fosgate any other liability in connection with the sale of the product.

- **How to Obtain Service**

Please call 1-800-669-9899 for Rockford Customer Service. You must obtain an RA# (Return Authorization number) to return any product to Rockford Fosgate. You are responsible for shipment of product to Rockford.

Ship to: **Electronics**
Rockford Corporation
Warranty Repair Department
2055 E. 5th Street
Tempe, AZ 85281
RA#: _____

Ship to: **Speakers**
Rockford Acoustic Design
(Receiving-speakers)
609 Myrtle N.W.
Grand Rapids, MI 49504
RA#: _____



LEA DETENIDAMENTE LAS SIGUIENTES INSTRUCCIONES DE INSTALACIÓN DEL PRODUCTO.

INTRODUCCIÓN

Los woofers Power DVC son una gama completa de drivers de baja frecuencia que comprenden diámetros de 10" a 15". Diseñada para ofrecer la máxima calidad, los Woofers ofrecen al entusiasta principiante en sistemas de car audio, la oportunidad para disfrutar de un bajo sólido en las bajas frecuencias. Nuestros ingenieros han seleccionado materiales y técnicas para la construcción de nuestros altavoces con el objetivo de ofrecer características y confianza comparable a otros altavoces vendidos much más caros.

CALCULO DEL VOLUMEN

Para calcular el volumen sólo se han de medir las dimensiones en centímetros y aplicar la fórmula:

$$\text{Volumen du la caja = (en litros)} = \frac{\text{Alto x Ancho x Profundidad}}{1000}$$

Si dos caras opuestas son de diferente tamaño, súmelas y divida el total por dos para obtener el promedio. Usando esta técnica se ahorrara el cálculo por secciones. El espesor del material con que está construida la caja reduce el volumen interno, de manera que ha de restarse de las dimensiones exteriores para determinar el volumen interior. La cantidad de aire que ocupa cada modelo viene especificado en la hoja de características y también debe sustraerse para obtener el volumen neto interior.

CONSTRUCCION DE UN RECINTO

Para un buen funcionamiento las paredes del recinto han de ser rígidas y sin flexión a altas presiones de aire. Recomendamos usar un espesor de 1.9 cm de conglomerado de alta densidad o fibra de media densidad. Si el recinto es muy grande es necesario reforzarlo internamente. Las juntas deben ser encoladas y aseguradas con tornillos o grapas. Internamente las juntas deben ser selladas con silicona para prevenir las fugas de aire. La cola para madera es la mejor opción. Debido a la porosidad del conglomerado de alta densidad y la fibra es recomendable sellar exteriormente la caja con poliuretano.

VEUILLEZ LIRE LES INSTRUCTIONS SUIVANTES POUR L'INSTALLATION DE CE PRODUIT.

INTRODUCTION

Les woofers Power DVC sont une gamme complète de haut-parleurs de graves allant de 25 à 38 cm et disponibles en 4Ωx2. En utilisant les techniques et les matériaux de construction les plus récents, nous sommes parvenus à construire un haut-parleur fournissant un rendement élevé dans les graves tout en requérant un volume opérationnel minimum.

CALCUL DU VOLUME

On calcule le volume en mesurant la dimension de chaque côté et en utilisant la formule suivante:

$$\text{Volume du caisson (Litres)} = \frac{\text{Hauteur (cm)} \times \text{Longueur (cm)} \times \text{Largeur (cm)}}{1000}$$

Si les deux côtés qui se font face n'ont pas la même longueur, additionnez les et divisez le résultat par deux pour obtenir la moyenne des deux longueurs. Utilisez le nombre ainsi obtenu dans la formule pour déterminer le litrage. Cette méthode permet d'obtenir le volume du caisson sans devoir faire de calculs compliqués de section de volume. L'épaisseur du matériau dont est fait le caisson réduit le volume interne de celui-ci. Lorsqu'on mesure les côtés du caisson il ne faut donc pas oublier d'oter des mesures l'épaisseur du matériau. Le haut-parleur lui-même diminue le volume interne du caisson. Le volume d'air déplacé par chaque modèle de haut-parleur est repris dans les spécifications techniques et doit également être soustrait du volume total.

CONSTRUIRE UN CAISSON

Pour fonctionner convenablement les parois du caisson doivent être rigides lorsqu'elles sont soumises aux hautes pressions dues au fonctionnement du haut-parleur. Nous vous recommandons d'utiliser des panneaux de bois aggloméré à haute ou moyenne densité de particules de type "MDF". Ces panneaux sont disponibles dans la plupart des magasins de bricolage. Pour un caisson de grand volume il est recommandé de placer des renforts à l'intérieur du caisson. Les différents côtés devront être collés (colle à bois) et vissés (ou éventuellement cloués). Il est recommandé de mettre un joint de silicone dans les arêtes internes du caisson afin d'éviter les fuites d'air. Du fait de la porosité des matériaux que nous vous conseillons il est préférable de recouvrir l'extérieur du caisson avec du polyuréthane.

BITTE LESEN SIE DIESE GEBRAUCHSANLEITUNG ZUERST SORGFÄLTIG DURCH. DAS KANN SIE VOR FALSCHEM EINSATZ, AUSFALLEN ODER SOGAR BESCHÄDIGUNG DES PRODUKTES ODER IHRES FAHRZEUGES SCHÜTZEN.

EINLEITUNG

Die Power DVC Woofer sind eine komplette Produktlinie von Tief-Frequenzlautsprechern mit Durchmesser von 25 cm bis zu 38 cm, erhältlich in der Impedanz 4 Ohm x 2. Durch die Verwendung neuester Materialien und Produktionstechniken können wir Ihnen heute einen Lautsprecher vorstellen, der hohe Lautstärken und tiefe Frequenzen selbst in sehr kleinen Volumen reproduzieren kann.

VOLUMEN-BERECHNUNG

Zur Volumen-Berechnung benötigen sie die genauen Maße und Dimensionen in Zentimetern.

Gehäuse- Volumen = (Kubik Liter)	Höhe (cm) x Breite (cm) x Tiefe (cm) <hr/> 1000
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Sollten zwei gegenüberliegende Seiten ungleich lang sein, so können sie die Maße zusammen rechnen und durch zwei dividieren um den Durchschnitt zu erhalten. Dies macht Ihnen die Berechnung leichter und Sie müssen das Gehäuse nicht in Sektionen berechnen, die Sie danach wieder mühselig zusammen zählen müssen. Die Materialstärke beeinflusst natürlich auch das Innen-Volumen, so muss für eine präzise Berechnung die Materialstärke von Außen-Volumen abgezogen werden. Der Lautsprecher verringert ebenfalls das Innen-Volumen, auch er sollte natürlich heraus gerechnet werden. Jedes Lautsprecher-Volumen ist unter "Specifications" genau aufgelistet.

DER GEHÄUSE BAU

Um das Gehäuse so präzise wie möglich zu bauen, sollten die Gehäusewände sehr steif und luftundurchlässig sein, um dem entstehenden Luftdruck des Lautsprechers standhalten zu können. Wir empfehlen 1,9 cm mittelverdichtete Faserplatte (MDF), die in den meisten Baumärkten angeboten wird. Bei einem größeren Gehäuse sollten Sie Versteifungen durch Holzbalken montieren. Diese sollten – wie auch das gesamte Gehäuse – mit Holzleim geklebt und verschraubt oder vernagelt sein. Um eine höhere Dichte zu erreichen, empfiehlt es sich, die Kanten und Verschraubungen mit Silikon abzudichten und das Gehäuse von innen mit einer Hohlraumversiegelung zu behandeln.

LEGGERE CON ATTENZIONE LE SEGUENTI ISTRUZIONI PRIMA DELL'INSTALLAZIONE DEL PRODOTTO.

INTRODUZIONE

I woofer Power DVC sono una linea completa di altoparlanti per basse frequenze con diametri che vanno da 25 a 38 cm e disponibili sia a 4 ohm x 2. Impiegando le piú aggiornate tecnologie e materiali, siamo in grado di offrire altoparlanti che possono riprodurre un'elevata pressione sonora alle basse frequenze mantenendo i volumi di impiego assolutamente ridotti.

CALCOLO DEL VOLUME

Calcolare il volume é essenzialmente solo un problema di misurazione delle dimensioni in centimetri della cassa e di applicazione della formula: Se due pareti parallele sono di dimensioni diverse (prisma), semplicemente

Volume della cassa = (litri)	$\frac{\text{Alteza x Larghezza x Profonditá}}{1000}$
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sommatele e dividete il risultato per due. Impiegando il risultato ottenuto potete calcolare il volume senza dividere la cassa i sezioni. Lo spessore del legno riduce il volume interno, per cui é necessario sottrarlo dalle dimensioni esterne. Anche il volume dell'altoparlante stesso riduce il volume della cassa e deve essere sottratto. Il volume che ciascun altoparlante contribuisce a togliere dalla cassa é indicato nelle tabelle con le specifiche.

COSTRUIRE UNA CASSA

Per ottenere le prestazioni massime, le pareti della cassa devono essere rigide e non flettere sotto la sollecitazione della elevata pressione generata dal woofer. Noi raccomandiamo l'impiego di MDF con uno spessore minimo di 19 mm, materiale facilmente reperibile in tutte le falegnamerie. Per casse di dimensioni molto grandi é indispensabile prevedere dei rinforzi interni. Le giunture devono essere incollate e fissate con viti o chiodi in abbondanza. Interamente le giunture devono essere siliconate per impedire trafilati d'aria. Anche la colla da legno funziona bene. Essendo il MDF un materiale poroso si consiglia di sigillare l'esterno con materiali poliuretani.

Installation assistance available at:

RFTECH

<http://www.rockfordfosgate.com/rftech>

MADE IN THE USA

This product is designed, developed and assembled in the USA by a dedicated group of American workers. The majority of the components used in the construction of this product are produced by American companies. However, due to the global nature of their manufacturing facilities and the loudspeaker parts industry in general, some parts may be manufactured in other countries.

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