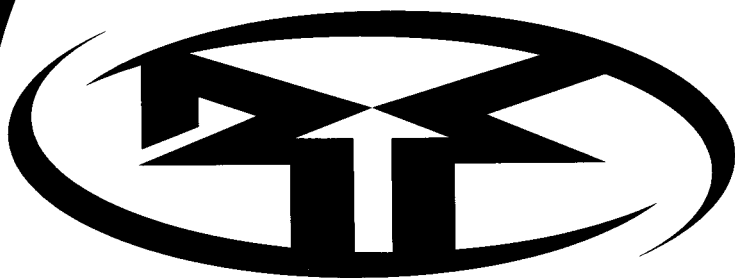


RFP3208  
RFP3210  
RFP3212  
RFP3215

## INSTALLATION & OPERATION

RFD2208  
RFD2110  
RFD2210  
RFD2112  
RFD2212  
RFD2115  
RFD2215  
RFD2218



RFR3110  
RFR3112  
RFR3115

# **PUNCH** *HX2* **POWER** *HX2*

DUAL VOICE COIL

SUBWOOFER

Páginas de Referencia para la Instalación  
Schéma d'Installation  
Installations Beiblatt  
Istruzioni di Installation

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 accessories, 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 product if it is ever stolen.

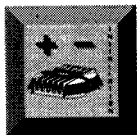
Serial Number: \_\_\_\_\_

Model Number: \_\_\_\_\_

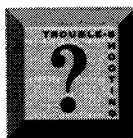
# GETTING STARTED

Welcome to Rockford Fosgate! This manual is designed to provide information for the owner, salesperson and installer. For those of you who want quick information on how to install this product, please turn to the **Installation Section** of this manual or refer to the icons listed below. Other information can be located by using the Table of Contents. We, at Rockford Fosgate, have worked very hard to make sure all the information in this manual is current. But, as we are constantly finding new ways to improve our product, this information is subject to change without notice.

Visit our website for the latest information on all Rockford products



Sections marked  
**INSTALLATION**  
include “slam dunk”  
wiring connections



Sections marked  
**TROUBLESHOOTING**  
include recommendations for  
curing installation problems

# Specifications

	Punch He2 DVC				Punch Hx2 DVC								Power Hx2		
Model	RFP3208	RFP3210	RFP3212	RFP3215	RFD2208	RFD2110	RFD2210	RFD2112	RFD2212	RFD2115	RFD2215	RFD2218	RFR3110	RFR3112	RFR3115
Features															
Diameter	8	10	12	15	8	10	10	12	12	15	15	18	10	12	15
BART Surround	foam	foam	foam	foam	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene	sanoprene
Basket	LX Stamped	LX Stamped	LX Stamped	LX Stamped	LX Cast	LX Cast	LX Cast	LX Cast	LX Cast	LX Cast	LX Cast	LX Cast	Power LX	Power LX	Power LX
Aluminum voice coil diameter	2	2.5	2.5	2.5	2.5	3	3	3	3	3	3	3	4	4	4
Hyper extended pole piece	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Aero-vent pole piece	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enclosure Volume															
Sealed (ft3)	0.3	0.75	1.25	2.50	0.3	0.75	0.75	1.25	1.25	2.5	2.5	4	0.75	1.25	2.5
Sealed (liters)	8.5	21.24	35.4	70.79	8.5	21.24	21.24	35.4	35.4	70.79	70.79	113.28	21.24	35.4	70.79
Vented (ft3)	0.625	1	2	2.5	0.625	1	1	2	2	2.5	2.5	4	1	2	2.5
Vented (liters)	17.7	28.32	56.63	70.79	17.7	28.32	28.32	56.63	56.63	70.79	70.79	113.28	28.32	56.63	70.79

# Specifications

Specifications															
Nominal Impedance	4 ohms X 2	4 ohms X 2	4 ohms X 2	4 ohms X 2	4 ohms X 2	2 ohms X 2	4 ohms X 2	2 ohms X 2	4 ohms X 2	2 ohms X 2	4 ohms X 2	4 ohms X 2	2 ohms X 2	2 ohms X 2	2 ohms X 2
Fs (Hz)	35	30	28	22	40	27	30	25	29	22	24	20	TBD	TBD	TBD
Qts	0.37	0.49	0.51	0.51	0.5	0.374	0.41	0.407	0.48	0.453	0.53	0.5	TBD	TBD	TBD
Vas (ft3)	0.556	1.13	2.578	8.334	0.318	0.95	0.989	2.86	2.649	6.39	5.756	9.429	TBD	TBD	TBD
Vas (liters)	16	32	73	236	9	26.9	28	81	75	181	163	267	TBD	TBD	TBD
Xmax (in.)	0.43	0.51	0.51	0.51	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.75	TBD	TBD	TBD
Xmax (mm)	11	13	13	13	14	14	14	14	14	14	14	19	TBD	TBD	TBD
Sensitivity (dB @ 1w/1m)	84	85	87	89	83	83.4	85	86.7	88	88.2	89	88	TBD	TBD	TBD
Power handling (RMS/Peak)	250/500	400/800	400/800	500/1000	400/800	400/800	500/1000	500/1000	500/1000	500/1000	600/1200	600/1200	TBD	TBD	TBD
Speaker displacement	0.035	0.06	0.085	0.135	0.05	0.12	0.12	0.21	0.21	0.25	0.25	0.3	TBD	TBD	TBD
Mounting diameter (in)	7-1/16	9-5/16	11-1/8	13-7/8	6-7/8	9-5/16	9-5/16	10-13/16	10-13/16	13-13/16	13-13/16	16-5/16	9-5/16	10-13/16	13-13/16
Mounting diameter (mm)	179	237	283	352	175	237	237	275	275	351	351	414	237	275	351
Mounting depth (in.)	4-11/16	5-7/8	6-5/16	7-11/16	4-13/16	5-7/16	5-7/16	5-13/16	5-13/16	6-15/16	6-15/16	8-11/16	TBD	TBD	TBD
Mounting depth (mm)	119	149	160	195	122	138	138	148	148	176	176	221	TBD	TBD	TBD

# Table of Contents

Dear Customer	i
Getting Started	ii
Specifications	iii
Introduction	v
DVC Woofer Contents	v
Recommended Enclosures	1
Installation	2
Wiring Configurations	4
Building An Enclosure	5
Calculating Volume	5
Subwoofer Crossovers	5
Warranty Information	6
International Information	7

## Introduction

The Punch HE2 DVC, Punch HX2 DVC and Power HX2 DVC are high performance, low frequency drivers with dual voice coils. These woofers were designed for use primarily in small sealed and 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 HE2 DVC**

Punch HE2 DVC Woofer  
Installation & Operation Manual

### **Punch HX2 DVC**

Punch HX2 DVC Woofer  
Installation & Operation Manual

### **Power HX2 DVC**

Power HX2 DVC Woofer  
Installation & Operation Manual

# Recommended Enclosures



This manual outlines two specific types of enclosures that provide distinctly different performance. This section is to help you decide which type is best for your application.

## **Sealed Enclosures**

Sealed enclosures are the simplest to build. The most important part of building a sealed enclosure is to make sure that the enclosure is airtight. Using glue and some type of sealant on all seams will ensure solid construction and prevent air leaks. The box volume will directly impact the performance of the speaker. Larger enclosures will provide flatter response and deeper bass, while smaller boxes will provide a bump in the response curve and generally higher output for greater SPL.

Advantages of sealed enclosures

- Small enclosures
- Linear (Flat) response
- No port noise
- High power handling at all frequencies
- Excellent for sound quality

## **Vented Enclosures**

Vented enclosures vary only from the sealed enclosure in that a vent or port is added to “tune” the enclosure. The enclosures recommended are designed for great overall performance. Larger boxes tend to be easy to tune to lower frequencies, while medium and small boxes are easier to tune to higher frequencies. The vented design is less linear in response than the sealed box but with noticeably more output at the tuning frequency.

Advantages of vented enclosures

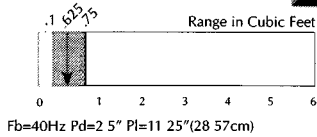
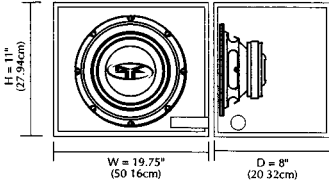
- Higher average output than sealed
- Tuning frequency can be easily adjusted by changing port length
- Deep bass response with lower power requirements
- Great for high output with limited power

# Installation

## Vented

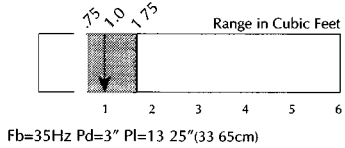
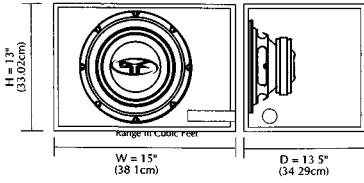
### Punch HE2 8"– Punch HX2 8"

Recommended vented 0.625ft<sup>3</sup> (17.70L)



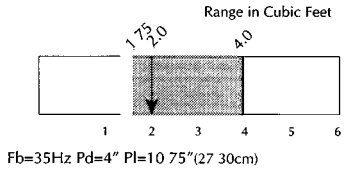
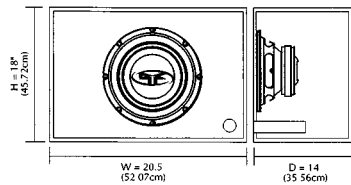
### Punch HE2 10"– Punch HX2 10"– Power HX2 DVC 10"

Recommended vented 1.0ft<sup>3</sup> (28.32L)



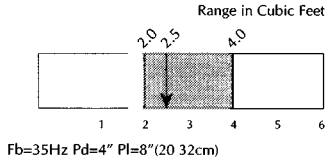
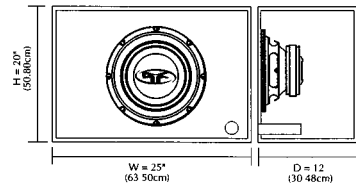
### Punch HE2 12"– Punch HX2 12"– Power HX2 DVC 12"

Recommended vented 2.0ft<sup>3</sup> (56.63L)



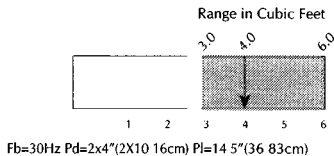
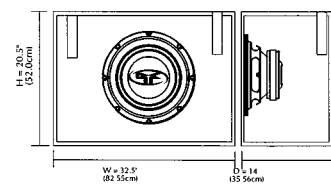
### Punch HE2 15"– Punch HX2 15"– Power HX2 DVC 15"

Recommended vented 2.5ft<sup>3</sup> (70.79L)



### Punch HX2 18"

Recommended vented 4.0ft<sup>3</sup> (113.27L)



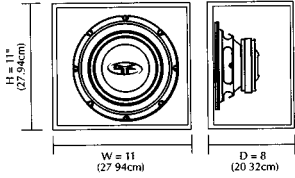
**Fb=Tuning Frequency**  
**Pd=Port Diameter**  
**Pl=Port Length**

# Installation

## Sealed

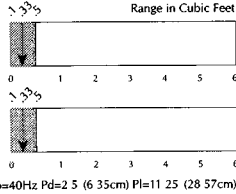
### Punch HE2 8"– Punch HX2 8"

Recommended sealed 0 30ft<sup>3</sup> (8 50L)



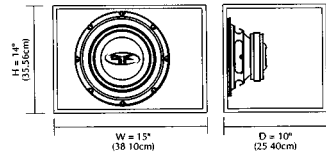
HE2 8"

HX2 8"



### Punch HE2 10"– Punch HX2 10"–Power HX2 DVC 10"

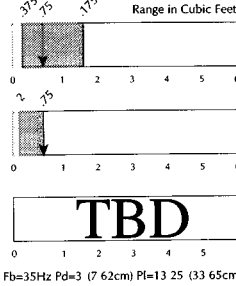
Recommended sealed 0 75ft<sup>3</sup> (21 24L)



HE2 10"

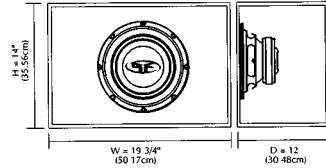
HX2 10"

Power  
HX2 10"



### Punch HE2 12"– Punch HX2 12"

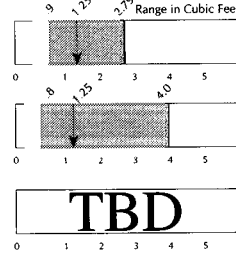
Power HX2 DVC 12"  
Recommended sealed 1 25ft<sup>3</sup> (35 40L)



HE2 12"

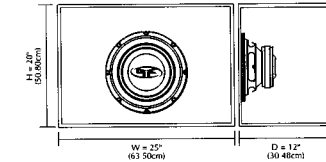
HX2 12"

Power  
HX2 12"



### Punch HE2 15"– Punch HX2 15"

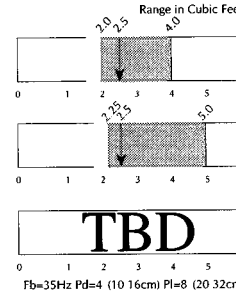
Power HX2 DVC 15"  
Recommended sealed 2 5ft<sup>3</sup> (70 79L)



HE2 15"

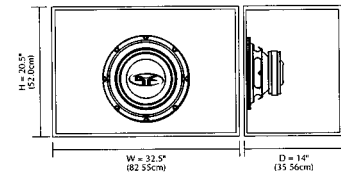
HX2 15"

Power  
HX2 15"

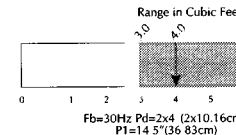


### Punch HX2 18"

Recommended sealed 4 0ft<sup>3</sup> (113 27L)



HX2 18"

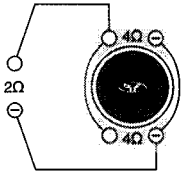




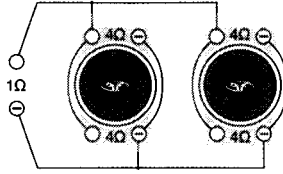
# Wiring Configurations

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 to 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 to the number of woofers and the impedance of your amplifier.

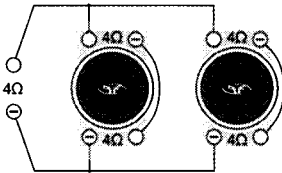
**(1) 4 ohm DVC Speaker = 2 ohm Load**



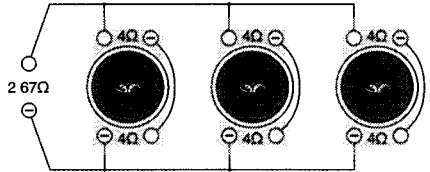
**(2) 4 ohm DVC Speakers = 1 ohm Load**



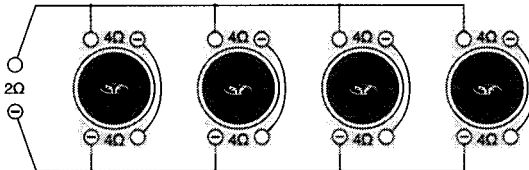
**(2) 4 ohm DVC Speakers = 4 ohm Load**



**(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:

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

(cubic feet)

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.

## 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. Always include Proof of Purchase. Mark RA# on *outside* of shipping carton.

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#: \_\_\_\_\_

Installation assistance available at:

**RFTECH**

[www.rockfordfosgate.com/rftech](http://www.rockfordfosgate.com/rftech)

### **MADE IN U.S.A.**

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.



Rockford Corporation

546 South Rockford Drive

Tempe, Arizona 85281 U S A

In U S A , (480) 967-3565

In Europe, Fax (49) 8503-934014

In Japan, Fax (81) 559-79-1265

[www.rockfordfosgate.com](http://www.rockfordfosgate.com)