

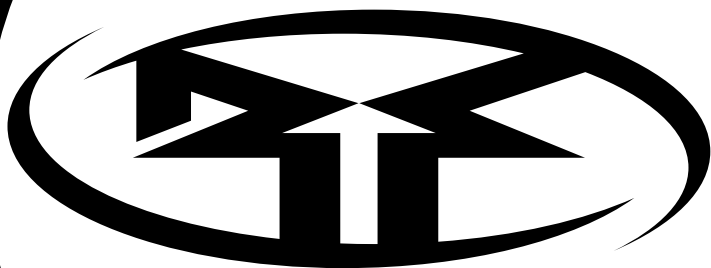


RFP3208  
RFP3210  
RFP3212  
RFP3215

RFD2208  
RFD2110  
RFD2210  
RFD2112  
RFD2212  
RFD2115  
RFD2215  
RFD3118  
RFD3218

RFR3110  
RFR3112  
RFR3115

Installation &  
Operation



***PUNCH*** ***Hx2***  
***POWER*** ***Hx2***

***Dual Voice Coil  
Subwoofers***

Installation et fonctionnement  
Instalación y funcionamiento  
Einbau und Betrieb  
Installazione e funzionamento

## INTRODUCTION

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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 accessories, 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 auto sound 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: \_\_\_\_\_

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**NOTE:** Review each section for more detailed information.

## 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. 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.

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### SAFETY INSTRUCTIONS

#### **WARNING**


This symbol with “**WARNING**” is intended to alert the user to the presence of important instructions. Failure to heed the instructions will result in severe injury or death.

#### **CAUTION**

This symbol with “**CAUTION**” is intended to alert the user to the presence of important instructions. Failure to heed the instructions can result in injury or unit damage.

 **CAUTION:** To prevent injury and damage to the unit, please read and follow the instructions in this manual. We want you to have enjoyment from this system, not a headache.

 **CAUTION** If you feel unsure about installing this system yourself, have it installed by a qualified Rockford Fosgate technician.

 **CAUTION** Before installation, disconnect the battery negative (-) terminal to prevent damage to the unit, fire and/or possible injury.

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### CONTENTS OF CARTON

Either a Punch HE2 DVC, Punch HX2 DVC  
or Power HX2 DVC Woofer

Installation & Operation Manual

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### DESIGN FEATURES

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.

Visit our web site for the latest information on all Rockford products.

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

# 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

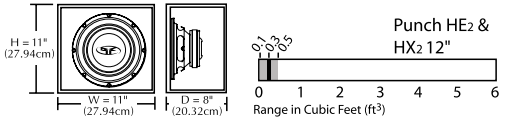
Sealed enclosures are the simplest to build. The most important part of building a sealed enclosure is to make sure that the enclosure is airtight. Using glue and some type of sealant on all seams will ensure solid construction and prevent air leaks. The box volume will directly impact the performance of the speaker. Larger enclosures will provide flatter response and deeper bass where 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

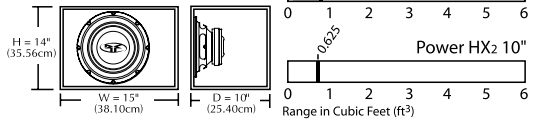
### Punch HE2 & HX2 8"

Recommended Sealed 0.30ft<sup>3</sup> (8.50L)



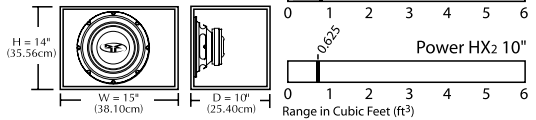
### Punch HE2 & HX2 10"

Recommended Sealed 0.75ft<sup>3</sup> (21.24L)



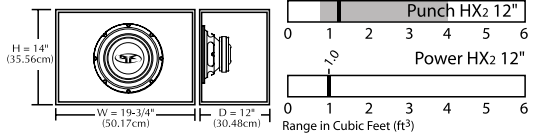
### Power HX2 10"

Recommended Sealed 0.625ft<sup>3</sup> (17.7L)



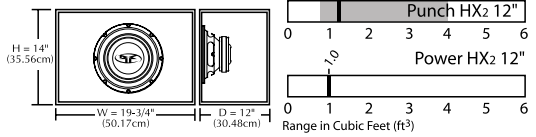
### Punch HE2 & HX2 12"

Recommended Sealed 1.25ft<sup>3</sup> (35.40L)



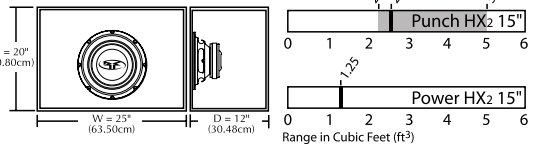
### Power HX2 12"

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



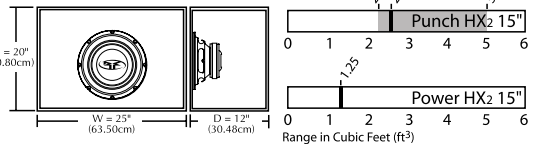
### Punch HE2 & HX2 15"

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



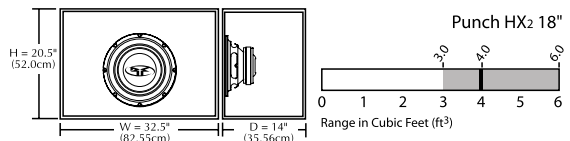
### Power HX2 15"

Recommended Sealed 1.25ft<sup>3</sup> (35.40L)



### Punch HX2 18"

Recommended Sealed 4.0ft<sup>3</sup> (113.28L)



**VENTED ENCLOSURES**

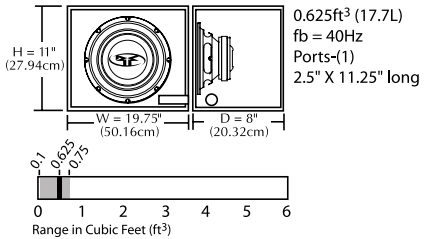
Vented enclosures vary only from the sealed enclosure in that a vent or port is added to “tune” the enclosure. The enclosures recommended are designed for great overall performance. Larger boxes tend to be easy to tune to lower frequencies while medium and small boxes are easier to tune to higher frequencies. 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

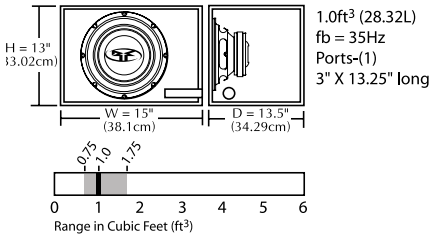
**Punch HE2 & HX2 8"**

Recommended Vented 0.625ft<sup>3</sup> (17.7L)



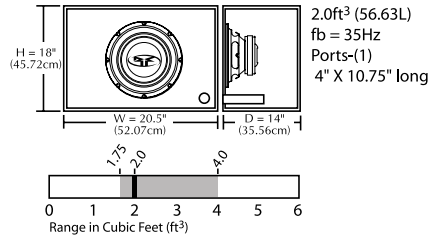
**Punch HE2 & HX2 10"**

Recommended Vented 1.0t<sup>3</sup> (28.32L)



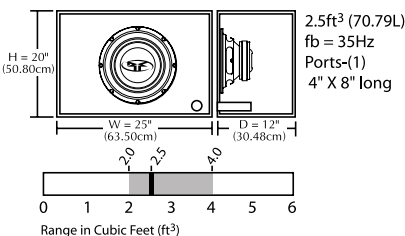
**Punch HE2 & HX2 12"**

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



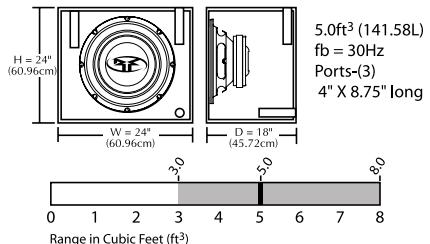
**Punch HE2 & HX2 15"**

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



**Punch HX2 18"**

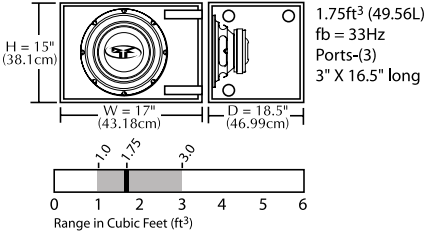
Recommended Vented 5.0ft<sup>3</sup> (141.58L)



# RECOMMENDED ENCLOSURES

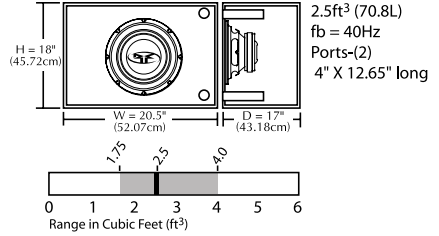
## Power HX2 10"

Recommended Vented 1.75ft<sup>3</sup> (49.56L)



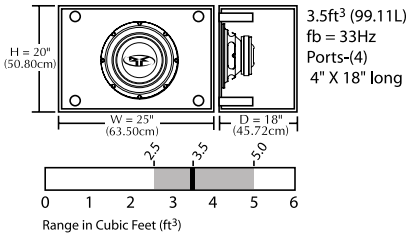
## Power HX2 12"

Recommended Vented 2.5ft<sup>3</sup> (70.8L)



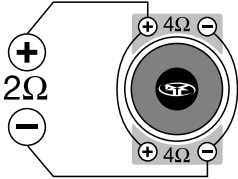
## Power HX2 15"

Recommended Vented 3.5ft<sup>3</sup> (99.11L)

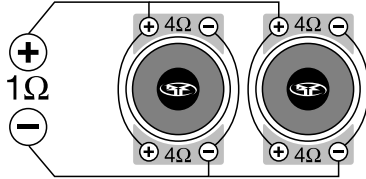


By varying the wiring configuration of your speakers you can create an impedance load to match your system. Since each voice coil of a DVC speaker carries its own impedance, altering the wiring configurations gives a range of options for impedance loads. Series, Parallel, or Series-Parallel wiring configurations 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 to the number of woofers and the impedance of your amplifier.

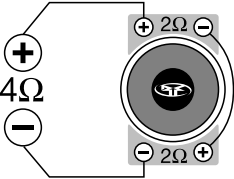
**(1) 4 ohm DVC Speaker = 2 ohm Load**



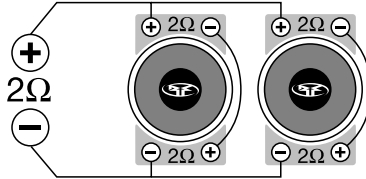
**(2) 4 ohm DVC Speaker = 1 ohm Load**



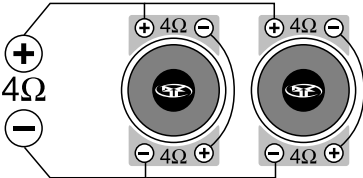
**(1) 2 ohm DVC Speaker = 4 ohm Load**



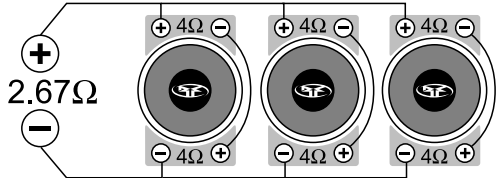
**(2) 2 ohm DVC Speaker = 2 ohm Load**



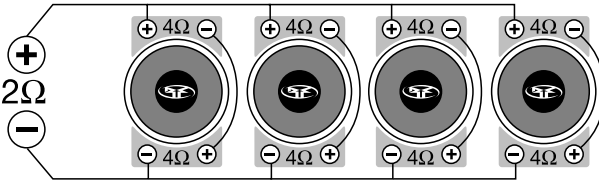
**(2) 4 ohm DVC Speaker = 4 ohm Load**



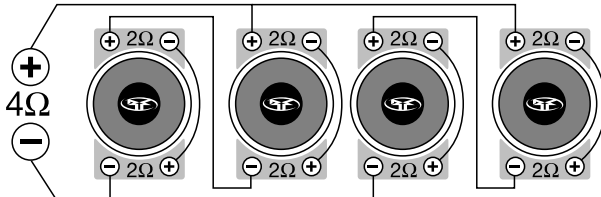
**(3) 4 ohm DVC Speaker = 2.67 ohm Load**



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



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



## **BUILDING AN ENCLOSURE**

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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:

<b>Box Volume =</b>	<b>Height " x Width" x Depth"</b>
<b>(cubic feet)</b>	<b>1728 cu. in./cu. ft.</b>

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.

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## **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.



**FEATURES - Punch HE2 DVC**

- BART Surround - Foam
- Basket - LX Stamped
- Hyper extended pole piece
- Aero-vent pole piece

<b>Model - Punch HE2 DVC</b>	<b>RFP3208</b>	<b>RFP3210</b>	<b>RFP3212</b>	<b>RFP3215</b>
Nominal Impedance (ohms)	4 (2)	4 (2)	4 (2)	4 (2)
Voice Coil Diameter-inch (mm)	2.0 (50.8)	2.5 (63.5)	2.5 (63.5)	2.5 (63.5)
FS (Hz)	35	30	28	22
QTS	0.37	0.49	0.51	0.51
VAS-cu.ft. (liter)	0.56 (16)	1.13 (32)	2.58 (73)	8.33 (236)
Xmax-inch (mm)	.43 (11)	.51 (13)	.51 (13)	.51 (13)
SPL (dB @ 1w/1m)	84	85	87	89
Power Handling (RMS)	250	400	400	500
Power Handling (Max)	500	800	800	1000
Mounting Dia.-inch (mm)	7-1/16 (179)	9-5/16 (237)	11-1/8 (283)	13-7/8 (352)
Mounting Depth-inch (mm)	4-11/16 (119)	5-7/8 (149)	6-5/16 (160)	7-11/16 (195)
Speaker Dis.-cu. ft. (liter)	0.031 (0.88)	0.05 (1.42)	0.066 (1.87)	0.103 (2.91)
Sealed Box Vol.-cu. ft. (liter)	0.3 (8.5)	0.75 (21.24)	1.25 (35.4)	0.25 (7.079)
Vented Box Vol.-cu. ft. (liter)	0.625 (17.7)	1.0 (28.32)	2.0 (56.63)	2.5 (70.79)
Port Diameter & Length (in.)	(1) 2.5 x 11.25	(1) 3 x 13.25	(1) 4 x 10.75	(1) 4 x 8
Port Diameter & Length (cm)	(1) 6.35 x 28.57	(1) 7.6 x 33.65	(1) 10.2 x 27.3	(1) 10.2 x 20.32

**FEATURES - Punch HX2 DVC**

*Number of ports noted in ( )*

- BART Surround - Santoprene
- Basket - LX Cast
- Hyper extended pole piece
- Aero-vent pole piece

<b>Model - Punch HX2 DVC</b>	<b>RFD2208</b>	<b>RFD2110</b>	<b>RFD2210</b>	<b>RFD2112</b>
Nominal Impedance (ohms)	4 (2)	2 (2)	4 (2)	2 (2)
Voice Coil Diameter-inch (mm)	2.5 (63.5)	3.0 (76.2)	3.0 (76.2)	3.0 (76.2)
FS (Hz)	40	27	30	25
QTS	0.5	0.347	0.41	0.407
VAS-cu.ft. (liter)	0.32 (9)	0.95 (26.9)	0.99 (28)	2.86 (81)
Xmax-inch (mm)	.55 (14)	.55 (14)	.55 (14)	.55 (14)
SPL (dB @ 1w/1m)	83	83.4	85	86.7
Power Handling (RMS)	400	500	500	500
Power Handling (Max)	800	1000	1000	1000
Mounting Dia.-inch (mm)	6-7/8 (175)	9-5/16 (237)	9-5/16 (237)	10-13/16 (275)
Mounting Depth-inch (mm)	4-13/16 (122)	5-7/16 (138)	5-7/16 (138)	5-13/16 (148)
Speaker Dis.-cu. ft. (liter)	0.041 (1.16)	0.055 (1.55)	0.055 (1.55)	0.069 (1.95)
Sealed Box Vol.-cu. ft. (liter)	0.3 (8.5)	0.75 (21.24)	0.75 (21.24)	1.25 (35.4)
Vented Box Vol.-cu. ft. (liter)	0.625 (17.7)	1.0 (28.32)	1.0 (28.32)	2.0 (56.63)
Port Diameter & Length (in.)	(1) 2.5 x 11.25	(1) 3 x 13.25	(1) 3 x 13.25	(1) 4 x 10.75
Port Diameter & Length (cm)	(1) 6.35 x 28.57	(1) 7.6 x 33.65	(1) 7.6 x 33.65	(1) 10.2 x 27.3

**Specifications subject to change without notice**

*Number of ports noted in ( )*

## SPECIFICATIONS

Model - Punch HX2 DVC	RFD2212	RFD2115	RFD22215	RFD3118
Nominal Impedance (ohms)	4 (2)	2 (2)	4 (2)	2 (2)
Voice Coil Diameter-inch (mm)	3.0 (76.2)	3.0 (76.2)	3.0 (76.2)	4.0 (101.6)
FS (Hz)	29	22	24	24
QTS	0.48	0.453	0.53	0.325
VAS-cu.ft. (liter)	2.65 (75)	6.39 (181)	5.76 (163)	6.41 (182)
Xmax-inch (mm)	.55 (14)	.55 (14)	.55 (14)	.74 (19)
SPL (dB @ 1w/1m)	88	88.2	89	90.6
Power Handling (RMS)	500	500	600	1000
Power Handling (Max)	1000	1000	1200	2000
Mounting Dia.-inch (mm)	10-13/16 (275)	13-13/16 (351)	13-13/16 (351)	16-5/16 (414)
Mounting Depth-inch (mm)	5-13/16 (148)	6-15/16 (176)	6-15/16 (176)	9-1/8 (232)
Speaker Dis.-cu. ft. (liter)	0.069 (1.95)	0.109 (3.08)	0.109 (3.08)	0.244 (6.92)
Sealed Box Vol.-cu. ft. (liter)	1.25 (35.4)	2.5 (70.79)	2.5 (70.79)	4.0 (113.28)
Vented Box Vol.-cu. ft. (liter)	2.0 (56.63)	2.5 (70.79)	2.5 (70.79)	5.0 (141.58)
Port Diameter & Length (in.)	(1) 4 x 10.75	(1) 4 x 8	(1) 4 x 8	(3) 4 x 8.75
Port Diameter & Length (cm)	(1) 10.2 x 27.3	(1) 10.2 x 20.32	(1) 10.2 x 20.32	(3) 10.2 x 22.23

### FEATURES - Power HX2 DVC

*Number of ports noted in ( )*

- BART Surround - Santoprene
- Basket - Power LX Cast
- Hyper extended pole piece
- Aero-vent pole piece

### Model - Power HX2 DVC

Model - Punch HX2 DVC	RFD3218	RFR3110	RFR3112	RFR3115
Nominal Impedance (ohms)	4 (2)	2 (2)	2 (2)	2 (2)
Voice Coil Diameter-inch (mm)	4.0 (101.6)	4.0 (101.6)	4.0 (101.6)	4.0 (101.6)
FS (Hz)	24	28	26	22
QTS	0.451	0.313	0.338	0.388
VAS-cu.ft. (liter)	7.03 (199)	0.60 (17)	1.46 (41)	4.45 (126)
Xmax-inch (mm)	.74 (19)	.74 (19)	.74 (19)	.74 (19)
SPL (dB @ 1w/1m)	89.4	83	85	87.5
Power Handling (RMS)	1000	1000	1000	1000
Power Handling (Max)	2000	2000	2000	2000
Mounting Dia.-inch (mm)	16-5/16 (414)	9-3/16 (234)	10-13/16 (275)	13-13/16 (351)
Mounting Depth-inch (mm)	9-1/8 (232)	6-11/16 (170)	7-1/16 (180)	8-3/16 (208)
Speaker Dis.-cu. ft. (liter)	0.244 (6.92)	0.115 (3.25)	0.127 (3.60)	0.185 (5.23)
Sealed Box Vol.-cu. ft. (liter)	4.0 (113.28)	0.625 (17.7)	1.0 (28.32)	1.25 (35.4)
Vented Box Vol.-cu. ft. (liter)	5.0 (141.58)	1.75 (49.56)	2.5 (70.8)	3.5 (99.11)
Port Diameter & Length (in.)	(3) 4 x 8.75	(3) 3 x 16.5	(2) 4 x 12.65	(4) 4 x 18
Port Diameter & Length (cm)	(3) 10.2 x 22.23	(3) 7.6 x 41.91	(2) 10.2 x 32.13	(4) 10.2 x 45.72

*Number of ports noted in ( )*

**Specifications subject to change without notice**

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

***Length of Warranty***

**PUNCH Amplifiers – 2 years**

**All Other Amplifier Models – 3 years**

**Source Units – 1 year**

**Speakers – 1 year**

**90 days on speaker, amplifier and source unit B-stock (receipt required)**

***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.

***EU Warranty***

This product meets the current EU warranty requirements, see your Authorized dealer for details.

**Ship to: Electronics**

Rockford Corporation  
Warranty Repair Department  
2055 E. 5th Street  
Tempe, AZ 85281  
RA#: \_\_\_\_\_

**Ship to: Speakers**

Rockford Acoustic Design  
Speaker Returns  
2356 Turner Ave. NW  
Grand Rapids, MI 49544  
RA#: \_\_\_\_\_



**Rockford Fosgate®**

Installation assistance available at:

**RFTECH**

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



**Rockford Fosgate**

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)