

— Installation assistance available at: —

# RFTECH

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



**ELEMENT READY™ SUBWOOFERS**

## M2

**M2D4-10I-G2**  
**M2D4-10IB-G2**  
**M2D2-10I-G2**  
**M2D2-10IB-G2**

**M2D4-12I**  
**M2D4-12IB**  
**M2D2-12I**  
**M2D2-12IB**



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Direct: (480) 967-3565 • Toll Free: (800) 669-9899

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

Installation & Operation

# Introduction

Dear Customer,

*Congratulations on your purchase of the world's finest brand of audio products. 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. 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 Rockford Fosgate in your installation. Rockford Fosgate has everything from RCA cables and speaker wire to power wire 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 to hats.*

*Visit our web site for the latest information on all Rockford products; [www.rockfordfosgate.com](http://www.rockfordfosgate.com) or, in the U.S. call 1-800-669-9899 or FAX 1-800-398-3985. For all other countries, call +001-480-967-3565 or FAX +001-480-966-3983.*

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*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.*

### 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.

### PRATIQUEZ UNE ÉCOUTE SANS RISQUES

Une exposition continue à des niveaux de pression acoustique supérieurs à 100 dB peut causer une perte d'acuité auditive permanente. Les systèmes audio de forte puissance pour auto peuvent produire des niveaux de pression acoustique bien au-delà de 130 dB. Faites preuve de bon sens et pratiquez une écoute sans risques

### PRACTIQUE EL SONIDO SEGURO

El contacto continuo con niveles de presión de sonido superiores a 100 dB puede causar la pérdida permanente de la audición. Los sistemas de sonido de alta potencia para automóviles pueden producir niveles de presión de sonido superiores a los 130 dB. Aplique el sentido común y practique el sonido seguro.

### PRAKTIZIEREN SIE SICHEREN SOUND

Fortgesetzte Geräuschdruckpegel von über 100 dB können beim Menschen zu permanentem Hörverlust führen. Leistungsstarke Autosoundsysteme können Geräuschdruckpegel erzeugen, die weit über 130 dB liegen. Bitte wenden Sie gesunden Menschenverstand an und praktizieren Sie sicheren Sound.

### OSSERVATE LE REGOLE DEL SUONO SENZA PERICOLI

La costante esposizione a livelli di pressione acustica al di sopra dei 100dB possono causare la perdita permanente dell'udito. I sistemi audio ad alta potenza possono produrre livelli di pressione acustica ben superiori ai 130dB. Si consiglia il buon senso e l'osservanza delle regole del suono senza pericoli

## Safety

This symbol with "WARNING" is intended to alert the user to the presence of important instructions. Failure to heed the instructions could result in severe injury or death.



**WARNING**

This symbol with "CAUTION" is intended to alert the user to the presence of important instructions. Failure to heed the instructions could result in injury or unit damage.



**CAUTION**

- To prevent injury and damage to the unit, please read and follow the instructions in this manual.
- If you feel unsure about installing this system yourself, have it installed by a qualified Rockford Fosgate technician.
- Before installation, disconnect the battery negative (-) terminal to prevent damage to the unit, fire and/or possible injury.

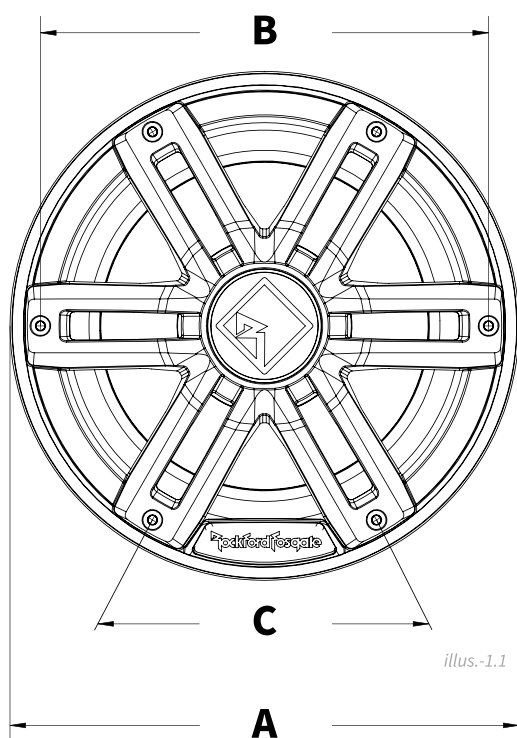
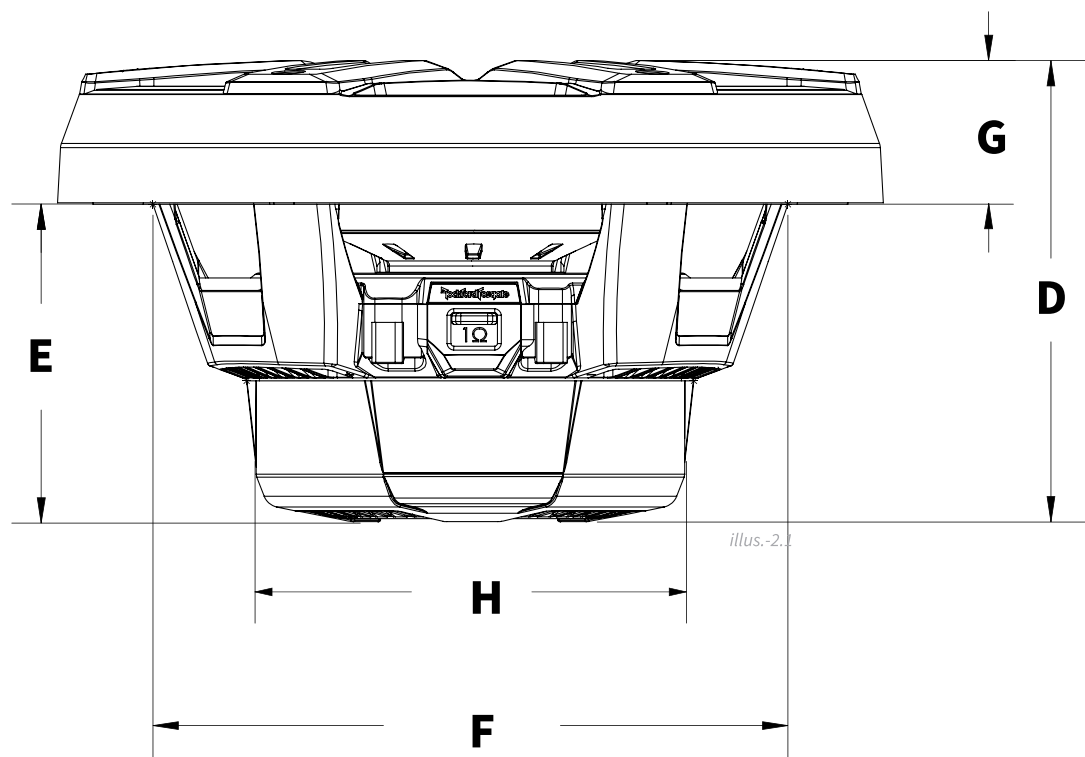
<i>Model</i>	<b>M2D2-10I/IB-G2</b>	<b>M2D4-10I/IB-G2</b>	<b>M2D2-12I/IB</b>	<b>M2D4-12I/IB</b>
<i>Nominal Diameter</i>	10"	10"	12"	12"
<i>Description</i>	Subwoofer	Subwoofer	Subwoofer	Subwoofer
<i>Nominal Impedance (Ohms)</i>	2 $\Omega$ DVC	4 $\Omega$ DVC	2 $\Omega$ DVC	4 $\Omega$ DVC
<i>Frequency Response (Hz)</i>	20-750	20-750	20-750	20-750
<i>Voice Coil Diameter - inch</i>	2" (4-Layer)	2" (4-Layer)	2" (4-Layer)	2" (4-Layer)
<i>Recommended Watts (RMS/Peak)</i>	400/1600	400/1600	400/1600	400/1600
<i>Fs - Free Air Resonance (Hz)</i>	43	43	34	35
<i>Qts</i>	0.74	0.85	0.75	0.93
<i>Vas - cu. ft. (Liter)</i>	1.07 <sup>3</sup> (30.5L)	1.11 <sup>3</sup> (31.5L)	2.47 <sup>3</sup> (70L)	2.40 <sup>3</sup> (68.1L)
<i>Displacement -cu. fl. (Liter)</i>	0.047 <sup>3</sup> (1.33L)	0.047 <sup>3</sup> (1.33L)	0.06 <sup>3</sup> (1.62L)	0.06 <sup>3</sup> (1.62L)
<i>Sensitivity (2.83V/1M)</i>	90.3dB	90.3dB	88.1dB	87.8dB
<i>Xmax - inch (mm)</i>	0.51" (13mm)	0.51" (13mm)	0.65" (16.5mm)	0.65" (16.5mm)
<i>Grille/Trim Ring</i>	YES	YES	YES	YES
<i>LED Current Draw</i>	0.25 Amps	0.25 Amps	0.25 Amps	0.25 Amps
<i>Recommended Fused Rating For LED's (not included)</i>	1 Amp	1 Amp	1 Amp	1 Amp
<i>LED Voltage Range</i>	9-16 Volts	9-16 Volts	9-16 Volts	9-16 Volts

**\* All measurements taken with voice coils wired in series**



VERIFIED WITH KLIPPEL

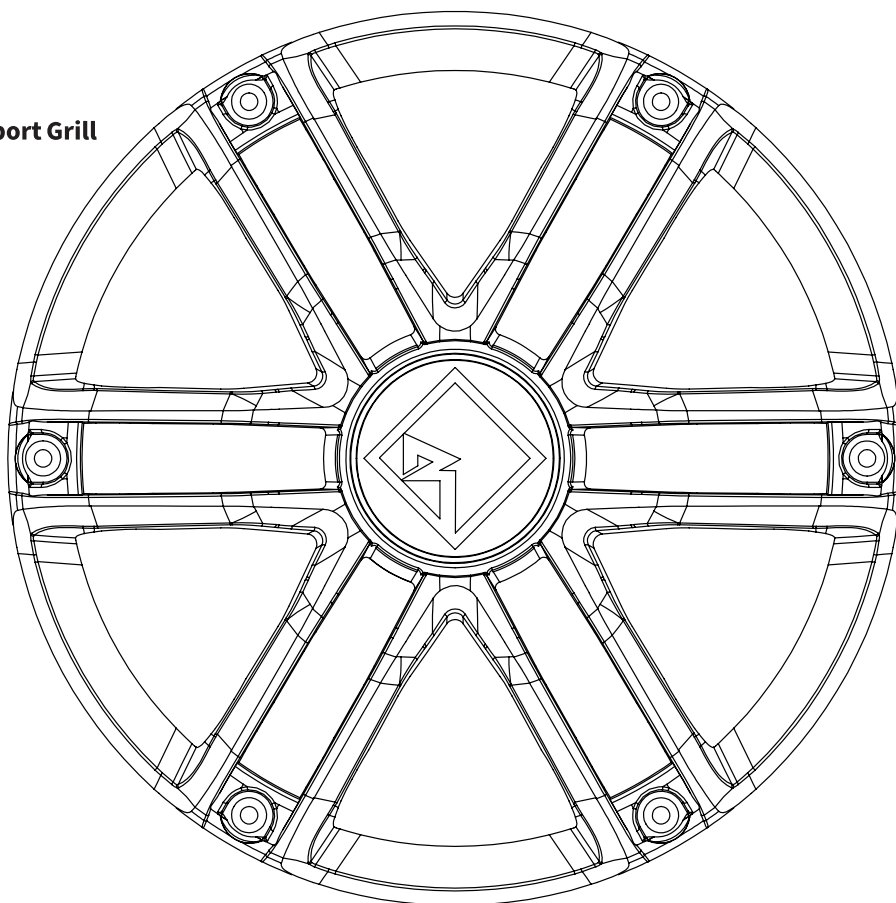
To adorn the 'Verified with Klippel' mark, the qualifying company's loudspeaker engineering personnel must be trained and certified by Klippel prior to using the three separate Klippel systems to design, develop and test. Rockford Fosgate has made the investment in Klippel to deliver the best possible speakers and subwoofers to their customers.



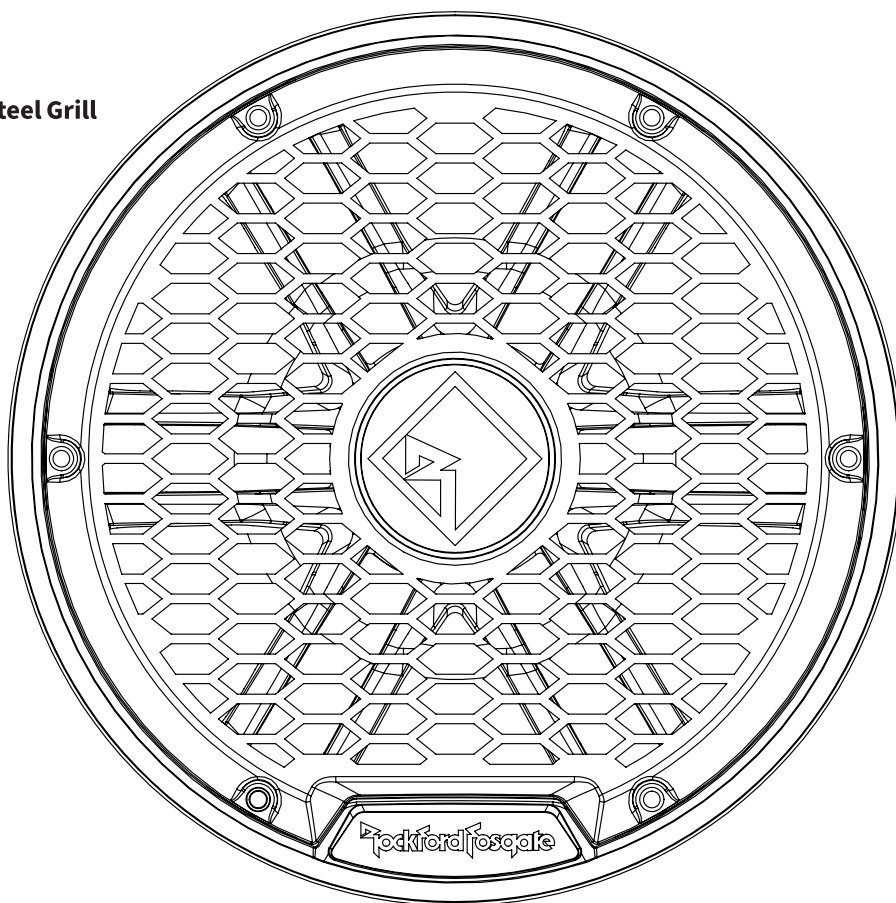
Model	M2D2-10I/IB-G2 M2D4-10I/IB-G2	M2D2-12I/IB M2D4-12I/IB
Overall Diameter (A)	11.54" (293mm)	13.87" (352.2mm)
Screw Mounting Diameter (B)	10.16" (258mm)	12.2" (310mm)
Mounting Screw Angle (C)	6X60°	6X60°
Overall Height (D)	6.7" (169.84mm)	7.53" (191.4mm)
Mounting Depth (E)	4.70" (119.35mm)	5.24" (133.1mm)
Cut-out Diameter (F)	8.98" (228mm)	10.9" (278mm)
Grill Height (G)	2" (51mm)	2.29" (58.2mm)
Magnet Diameter (H)	5.51" (6.3" with rubber boot )	5.79" (7.6" with rubber boot)



**Sport Grill**



**Stainless Steel Grill**



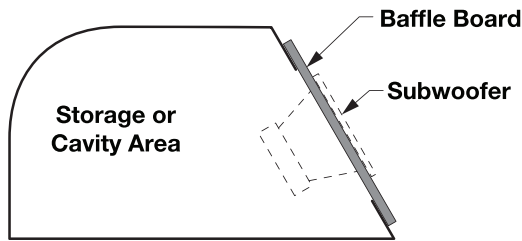
# Installation

## Contents

- (1) Element Ready™ Subwoofer with Sport/ Stainless Grill
- (1) COLOR OPTIX™ Harness
- (1) Socket head driver bit
- (6) Socket Head Stainless Screws
- (1) 1/8" Drill Bit
- Installation and Operation Manual

## OPTIMAL ENCLOSURE

### Infinite Baffle



An Infinite Baffle enclosure design represents an application where the compliance of the air volume within the enclosure is greater than the compliance on the speaker's suspension ( $V_{as}$ ). An infrasonic filter is required for reliable performance.

**IMPORTANT: A subsonic or "infrasonic" filter at or above the resonant frequency ( $F_s$ ) of the speaker is required.**

**NOTE: Infinite baffle installations will result in lower speaker power handling when compared to fully enclosed applications such as sealed or vented enclosures.**

### Wiring Configurations

By varying the wiring configuration of your speakers you can create an impedance load to match your system. 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 that corresponds to the number of woofers and the impedance of your amplifier.

### 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 that 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.

## OPTIONAL ENCLOSURE

### Vented Enclosures

**NOTE:  $V_b$  is the internal volume, before any speaker and/or port displacement is added. All external dimensions were based on the use of 3/4" (1.90cm) materials.**

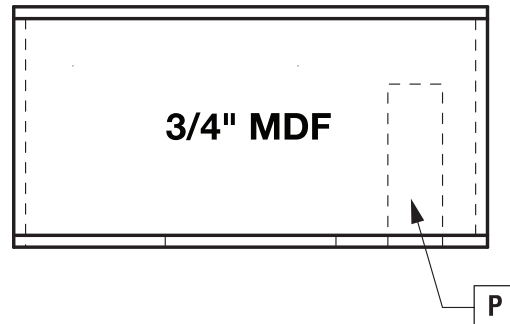
**NOTE:** When using enclosures other than recommended, call Technical Support for correct application.

### Optimum Vented (Ported) Enclosure Sizes

Vented Enclosures	10"	12"
Total Internal Volume cu. ft. (Liter)	1.4 (41.06)	2.00 (56.64)
Woofer Displacement cu. ft. (Liter)	0.047 (1.33)	0.06 (1.62)
Port Displacement cu. ft. (Liter)	0.1 (2.83)	0.03 (0.85)
$V_b$ - Net Internal Volume cu. ft. (Liter)	1.25 (35.40)	1.875 (49.80)
$F_B$ - Tuning Frequency (Hz)	46	40
$F_3$ - 3dB Point (Hz)	38	36
H - Height - inch (cm)	15.0 (38.10)	15.25 (38.74)
W - Width - inch (cm)	14.5 (36.83)	22 (55.80)
D - Depth - inch (cm)	15.25 (38.74)	13.75 (34.93)
P - Port Diameter and Length - inch (cm)	4 x 9.5 (7.62 x 24.13)	4 x 8.25 (7.62 x 14.59)

**NOTE:** The port shown can be placed on any face of the enclosure as long as the port ends are not obstructed.

**NOTE:** When using vented enclosures, for maximum reliability and power handling ensure, that a subsonic or "infrasonic" filter is used so that only usable low frequency signal is sent to the subwoofer.



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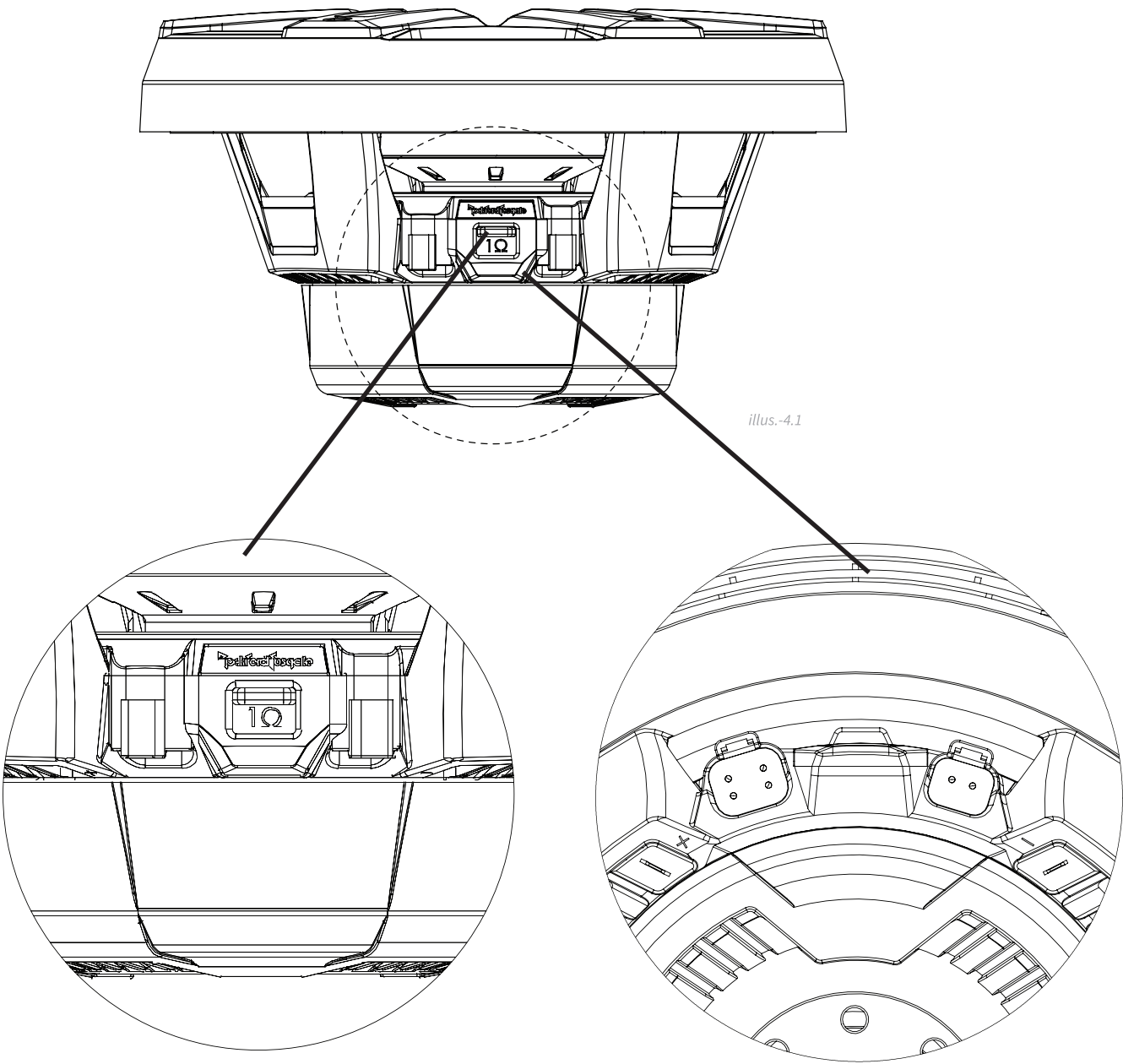
## Installation Considerations

*Before beginning any installation, follow these simple rules:*

- 1. Be sure to carefully read and understand the instructions before attempting to install these speakers.*
- 2. For easier assembly, we suggest you run all wires prior to mounting your speakers in place.*
- 3. Use high quality connectors for a reliable installation and to minimize signal or power loss.*
- 4. Think before you drill! Be careful not to cut or drill into gas tanks, fuel lines, brake or hydraulic lines, vacuum lines or electrical wiring when working on any vehicle. If installation in a boat, take care not to cut or drill through the main hull.*
- 5. Never run wires underneath the vehicle. Running the wires inside the vehicle or hull area provides the best protection.*
- 6. Avoid running wires over or through sharp edges. Use rubber or plastic grommets to protect any wires routed through metal, especially the firewall.*

## Mounting

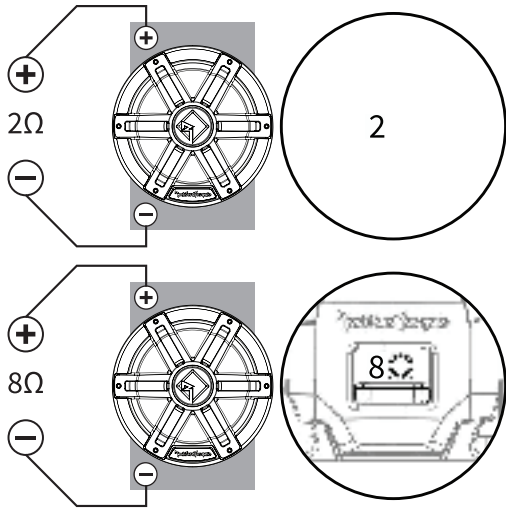
- 1. Determine where the speakers will be mounted. Ensure an area large enough for the speaker to mount evenly. Be sure that the mounting location is deep enough for the speaker to fit; if mounting in a door, operate all functions (windows, locks, etc.) through their entire operating range to ensure there is no obstruction.*
- 2. Refer to the specification chart to determine the proper diameter hole to cut for your speaker model. Cutting and mounting templates can be found at [www.rockfordfosgate.com](http://www.rockfordfosgate.com).*
- 3. Mark the locations for the mounting screws. Drill the holes with a 1/8" bit.*
- 4. Feed the speaker wires through the cutout and connect to the speaker terminals. Be sure to observe proper polarity when connecting the wires. The speaker's positive terminal is indicated with a "+".*
- 5. Fit the trim ring over the speaker and mount into place using the four (4) screws that are provided.*
- 6. Tighten the screws until the speaker is snug in place to prevent rattling. Do not over tighten the screws.*



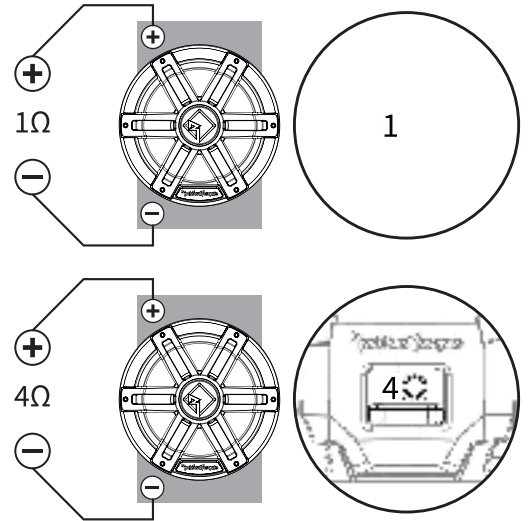
**SPEAKER TERMINAL SWITCH**

**SPEAKER & COLOR OPTIX™ TERMINALS**

### D4 Impedance Options

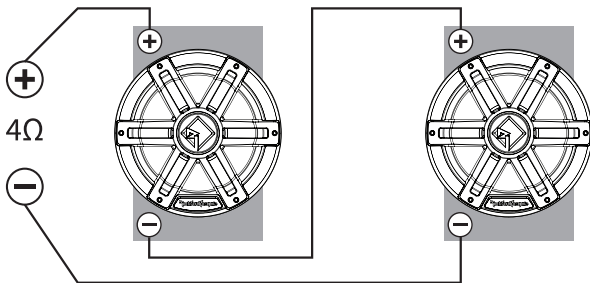


### D2 Impedance Options

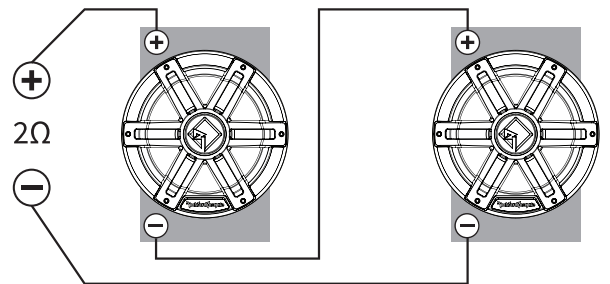


### Woofer Series Wiring Options

**D4 with Switch on 2Ω**

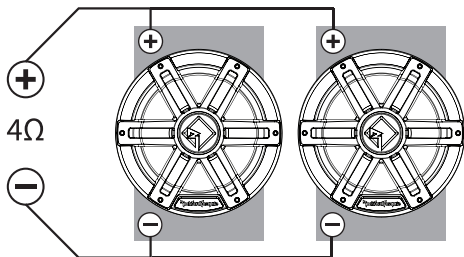


**D2 with Switch on 1Ω**

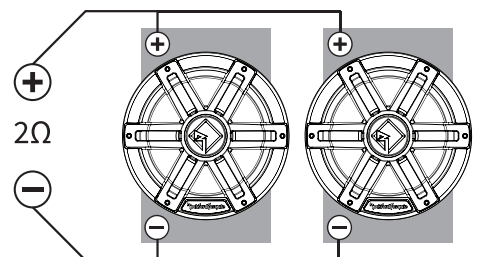


### Woofer Parallel Wiring Options

**D4 with Switch on 8Ω**

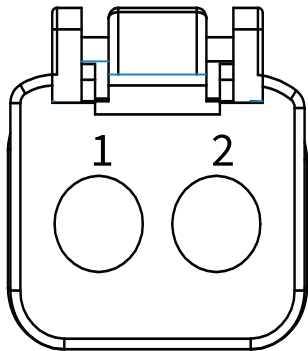


**D2 with Switch on 4Ω**



SPEAKER Wiring

There are (2) different options for wiring your speakers.  
Use the included spade connectors (included) as seen in illustration 3.1  
You can also utilize the DEUTSCH™/Amphenol style connector (not included) input next to the COLOR OPTIX™ connector.



illus.-4.3

Speaker Pin Out (wire side)  
1 - RED - Positive Speaker Input  
2 - BLACK - Negative Speaker Input  
**NOT included with speakers**

Connector is DEUTSCH™/Amphenol style DT06-2S

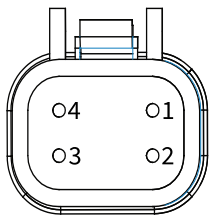
COLOR OPTIX™ Wiring

If not using the PMX-RGB, follow the diagrams below for proper pin out and hard wiring instructions.

COLOR OPTIX™ Wiring Precautions

- Do not connect to 24 Volt electrical systems
- We recommend only using the COLOR OPTIX™ wiring chart or connecting to the PMX-RGB. Connecting any other way could cause damage to the speakers or the device you have connected to.
- We recommend installing a fuse (not included) on the Yellow 12 Volt wire whenever you are NOT using the PMX-COLOR OPTIX™. See COLOR OPTIX™ wiring chart for wiring options.
- Rockford recommends a minimum of 20 gauge wire when hard wiring your COLOR OPTIX™ speakers.
- Never wire the COLOR OPTIX™ lights directly to 12 volts. Utilize either the PMX-RGB or a toggle switch (not included) connected to a fused 12 volt power supply. Refer to the specification to determine the size of fuse (not included) needed

COLOR OPTIX™ Pin Out (wire side)



illus.-4.1

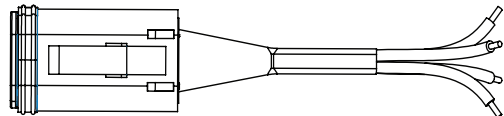
1 - Yellow (12V + Input)  
2 - Green (Ground Input)  
3 - Blue (Ground Input)  
4 - Red (Ground Input)  
**Included with speakers**  
Connector is DEUTSCH™/Amphenol style DT06-4S

COLOR OPTIX™ WIRING OPTIONS

LED OUTPUT COLOR	CONNECT THIS COLOR WIRE TO GROUND
RED	RED
GREEN	GREEN
BLUE	BLUE
YELLOW	RED & GREEN
PINK	RED & BLUE
AQUA	GREEN & BLUE
WHITE	RED, GREEN & BLUE

Connect colored wires on right to make output color on left.  
Connect all Yellow wires together to switched 12 Volts. See Wiring Precautions.

COLOR OPTIX™ Connector



illus.-4.2

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

### **Length of Warranty**

POWER Amplifiers – 2 Years

BMW® Direct Fit Speakers – 2 Years

PUNCH® & PRIME® Amplifiers – 1 Year

Speakers, Signal Processors, Accessories and Capacitors – 1 Year

All marine, motorcycle, motorsport products - 2 Years

Any Factory Refurbished Product – 90 Days (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. Products 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 installation, operations, theft, water (on non-Element Ready products).*
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. Refer to [rockfordfosgate.com](http://rockfordfosgate.com) dealer locator for more detail.*

### **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.*