

Warranty Information

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.

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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

Damage caused by accident, abuse, improper installation, operations, theft, water (on non-Element Ready products).

Any cost or expense related to the removal or re-installation of product.

Service performed by anyone other than Rockford or an authorized Rockford Fosgate service center.

Any product which has had the serial number defaced, altered, or removed.

Subsequent damage to other components.

Any product purchased outside the U.S.

Any product not purchased from an authorized Rockford Fosgate dealer. Refer to 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

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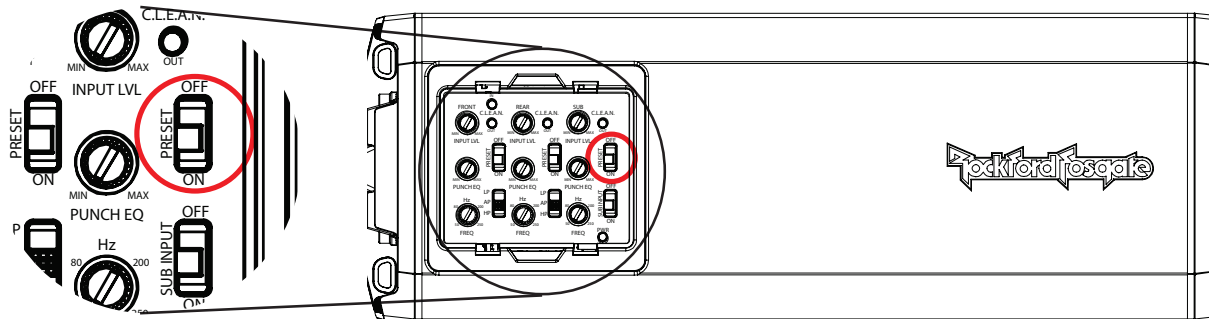


**ELEMENT READY™
AMPLIFIERS**

**M5-800X4
M5-1000X1
M5-1500X5**

600 South Rockford Drive • Tempe, Arizona 85281 United States
Direct: (480) 967-3565 • Toll Free: (800) 669-9899

rockfordfosgate.com



The PRESET switch disables the control panel and sets this amp for the best sound to be used with your ROCKFORD FOSGATE stage kit audio system. Turn the switch OFF to manually adjust this amp.

PRESET SETTINGS

M5-800X4

Rockford Fosgate Stages 3 & 4 SXS kits
 Front Level - 1 O'Clock
 Rear Level - 3 O'Clock
 Front/Rear EQ - MIN
 Input Switch - 4CH*
 Front/Rear Crossover - 80Hz
 Front X-over Switch - HP
 Rear X-over Switch - LP

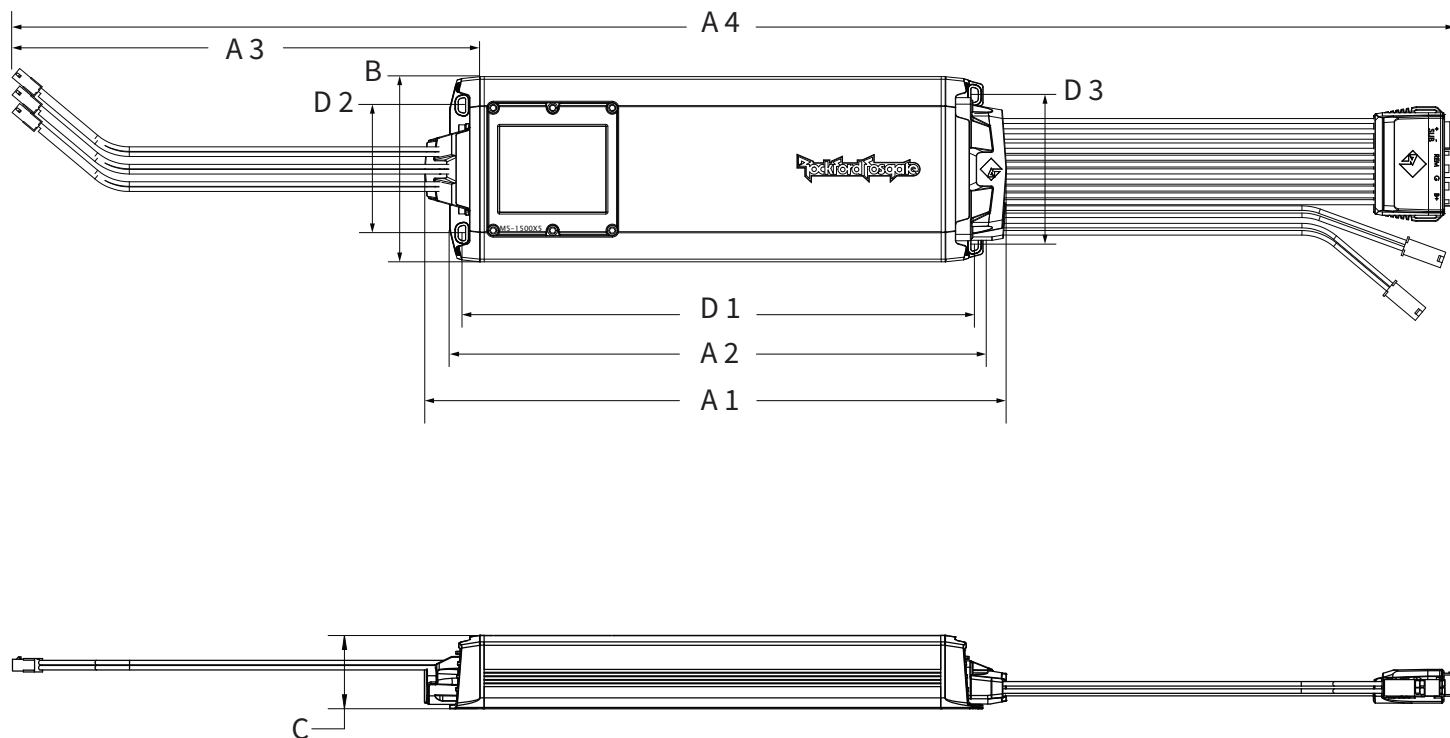
* Input switches are not controlled via preset switch.

M5-1000X1

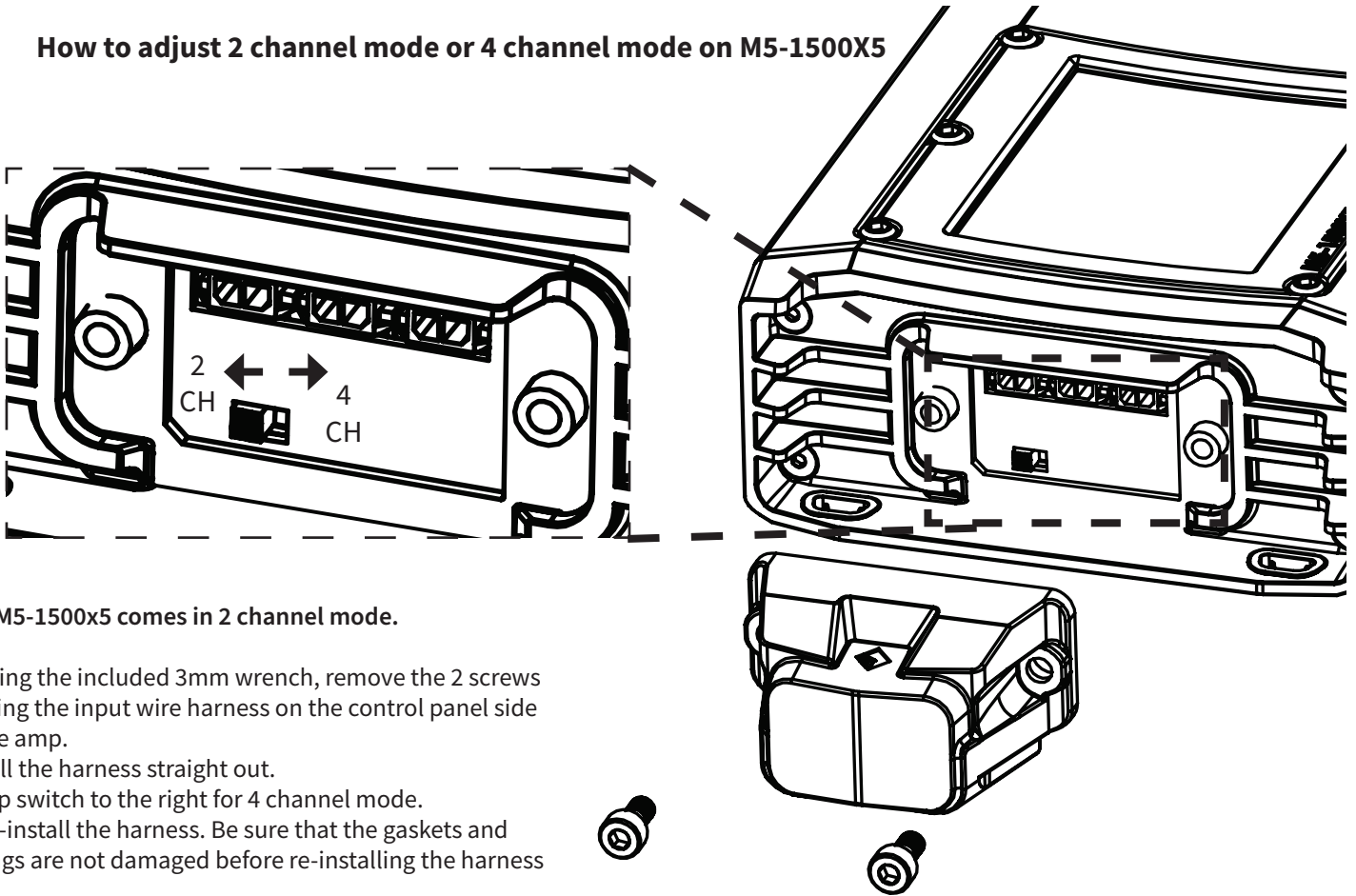
Sub Level - 3 O'Clock
 Punch EQ - MIN
 Sub X-Over Switch - 80Hz

M5-1500X5

Rockford Fosgate Stage 5 SXS kit
 Front /Rear Level - 1 O'Clock
 Sub Level - 3 O'Clock
 Front/Rear/Sub Punch EQ - MIN
 Front/Rear/Sub Crossover - 80Hz
 Front/Rear X-over Switch - HP
 Sub Input - ON*
 Input Switch - 2CH*



How to adjust 2 channel mode or 4 channel mode on M5-1500X5



The M5-1500x5 comes in 2 channel mode.

1. Using the included 3mm wrench, remove the 2 screws holding the input wire harness on the control panel side of the amp.
2. Pull the harness straight out.
3. Flip switch to the right for 4 channel mode.
4. Re-install the harness. Be sure that the gaskets and O-rings are not damaged before re-installing the harness

Model	M5-800X4	M5-1000X1	M5-1500X5
A1 - Overall Amplifier Length	9.7" (245.9mm)	9.7" (245.9mm)	13.4" (339.7mm)
A2 - Chassis Length	8.4" (213mm)	8.4" (213mm)	12.3" (311.4mm)
A3 - Harness Length (Input/Output are the same length)	12" (304.8mm)	12" (304.8mm)	12" (304.8mm)
A4 - Total Length of Amplifier	33.7" (855.5mm)	33.7" (855.5mm)	37.4" (949.3mm)
B - Chassis Width	4.25" (108.1mm)	4.25" (108.1mm)	4.25" (108.1mm)
C - Chassis Height	1.7" (42.7mm)	1.7" (42.7mm)	1.7" (42.7mm)
D1 - Mounting Length	7.8" (198.7mm)	7.8" (198.7mm)	11.8" (299.2mm)
D2 - Mounting Width	2.9" (74.5mm)	2.9" (74.5mm)	2.9" (74.5mm)
D3 - Mounting Width (Input side, M5-1500X5 ONLY)	N/A	N/A	3.4" (86.5mm)

Specifications

Model	M5-800X4	M5-1000X1	M5-1500X5
CTA-2006 Dynamic Power* Rating	125W x 4 @ 4Ohm 200W x 4 @ 2Ohm 400W x 2 @ 4Ohm Bridged	600W x 1 @ 4Ohm 900W x 1 @ 2Ohm 1000W x 1 @ 1Ohm	125W x 4/ 400W x 1 @ 4Ohm 200W x 4/ 700W x 1 @ 2Ohm 700W x 1 @ 1Ohm (Sub Only) 400W x2 @ 4-Ohms Bridged
CTA-2006 Continuous Power Rating	100W x4 @ 4-Ohm 100W x4 @ 2-Ohm 200W x 2 @ 4Ohm Bridged	500W x 1 @ 4-Ohm 750W x 1 @ 2-Ohm 750W x 1 @ 1-Ohm	100W x 4/ 400W x 1 @ 4-Ohm 100W x 4/ 600W x 1 @ 2-Ohm 600W x 1 @ 1-Ohm (Sub Only)
THD @ Rated Power	<1.0%	<1.0%	<1.0%
Signal to Noise Ratio	>105dB	>110dB	>105dB 4CH/ >85dB Sub
Frequency Response	10Hz - 50kHz +/- 1dB	30Hz-245Hz +/- 1dB	10Hz - 50kHz +/- 1dB
MIN/MAX Input Voltage	150mV -12Vrms	150mV -12Vrms	150mV -12Vrms
Low-pass Crossover Freq.	50-250Hz @12dB Per Octave	50-250Hz @12dB Per Octave	50-250Hz @12dB Per Octave
High-pass Crossover Freq.	50-250Hz @12dB Per Octave	N/A	50-250Hz @12dB Per Octave
Infra-sonic Freq.	N/A	30Hz @ 12dB Per Octave	30Hz @ 12dB Per Octave
Punch EQ	YES	YES	YES
Signal Sense/DC Offset Turn On	YES	YES	YES
Power Connections	8 AWG	8 AWG	4 AWG
Fused Rating	100A	120A	200A
Operating Voltage Range	9-16VDC	9-16VDC	9-16VDC
Topology / Class	ad	bd	Front/Rear ad/ SUB bd
IP Rating	IPX6 (Water spray)	IPX6 (Water spray)	IPX6 (Water spray)
Warranty	2 YEAR	2 YEAR	2 YEAR

***Dynamic Power indicates actual, usable power delivered by the amplifier to the speakers when listening to music. Dynamic power ratings are based on CTA-2006 industry standards. Dynamic power has been provided to indicate the actual RMS power output performance of the amplifier in the real world.**

What is the IPX6 testing method? It is the rating given after passing the testing method to show that this product will withstand water ingress of the given test. Here is the breakdown of everything needed for testing of the IPX6 rating.
A 0.5" (12.5mm) nozzle with 15 psi (100 kPa) outputting 100 liters per min of water from a distance of 9.8' (3 meters) from all directions for at least 3 minutes.



CTA 2006

Power ratings on Rockford Fosgate amplifiers conform to CTA-2006 industry standards. These guidelines mean your amplifier's output power ratings are REAL POWER numbers, not inflated marketing ratings.

— Installation assistance available at: —
RFTECH
— www.rockfordfosgate.com/rftech —



COLOR OPTIX™ MOTO-CANS

M1WL-65MB
M2WL-65MB

600 South Rockford Drive • Tempe, Arizona 85281 United States
Direct: (480) 967-3565 • Toll Free: (800) 669-9899

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 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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	German
	Italian
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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

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

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.

Model	M1WL-65MB	M2WL-65MB
Nominal Diameter - inch (mm)	6.5 (165mm).	6.5 (165mm).
Description	2-Way	2-Way
Nominal Impedance (Ohms)	4Ω	4Ω
Frequency Response (Hz)	38-22kHz	40-24kHz
Power Handling - Watts (RMS/Peak)	75/300	150/600
Sensitivity (2.83V/1M)	92dB	92dB
Grille/Trim Ring	YES (mounted)	YES (mounted)
LED Current Draw	.25 Amps	.25 Amps
Recommended Fused Rating	1 Amp	1 Amp
LED Voltage Range	9-16 Volts	9-16 Volts
Overall Speaker (A)	7.11" (180.5mm)	7.11" (180.5mm)
Bolt Diameter (B)	6.12" (155.5mm)	6.12" (155.5mm)
Overall Height (C)	9.57" (243.2mm)	9.57" (243.2mm)
Overall Length (D)	8.16" (207.3mm)	8.16" (207.3mm)

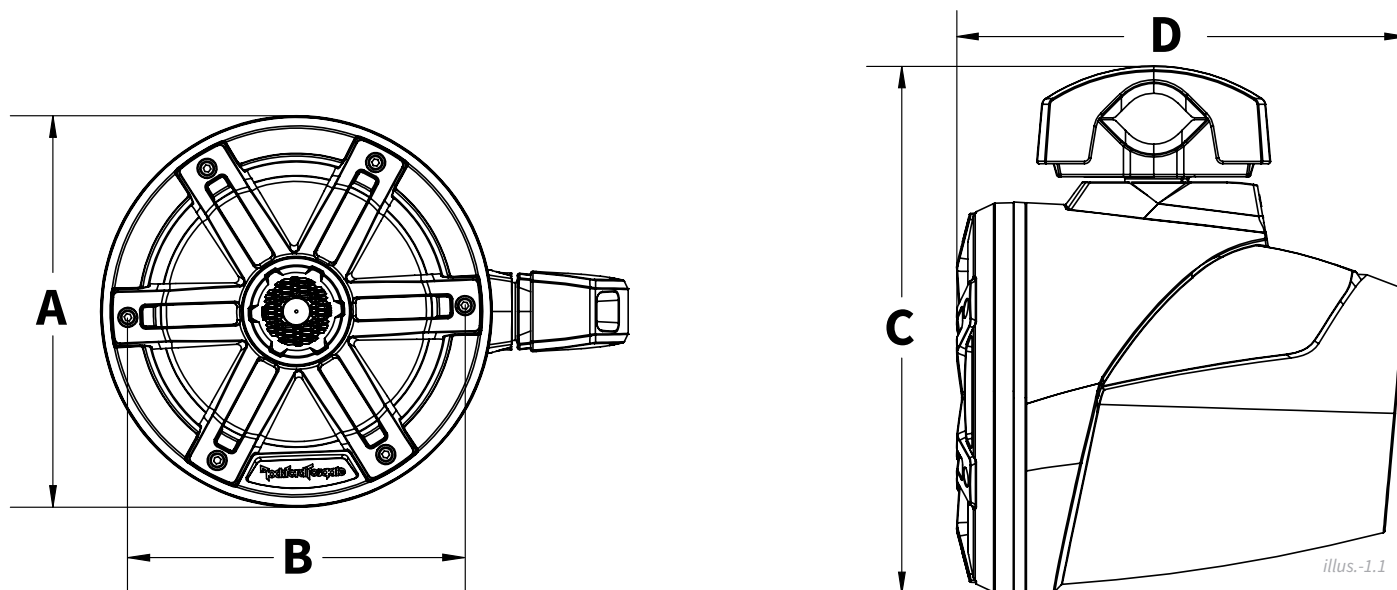
★ *Rockford Fosgate determines its rated frequency response range at -6 dB below its nominal sensitivity at upper and lower extents of a speaker's output.*



VERIFIED WITH KLIPPEL

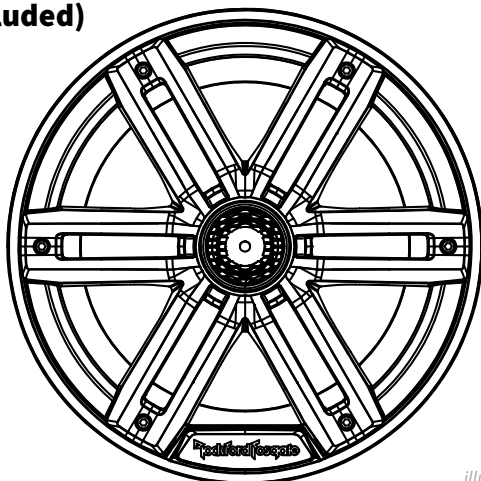
To adorn the 'Verified with Klippel' mark, the qualifying company's loudspeaker engineering personnel must be trained and certified by Klippel prior to using the three separate Klippel systems to design, develop and test. Rockford Fosgate has made the investment in Klippel to deliver the best possible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

M1/M2 Moto Can Dimensions

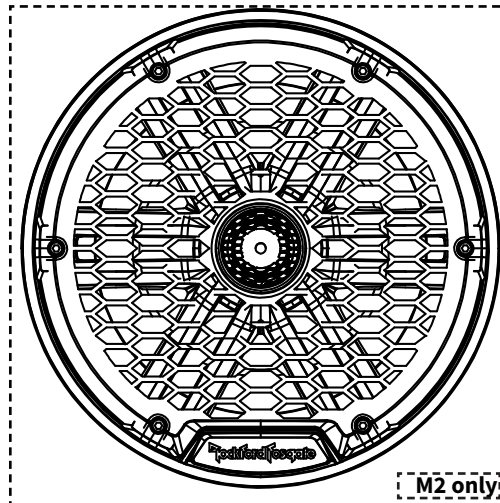


illus.-1.1

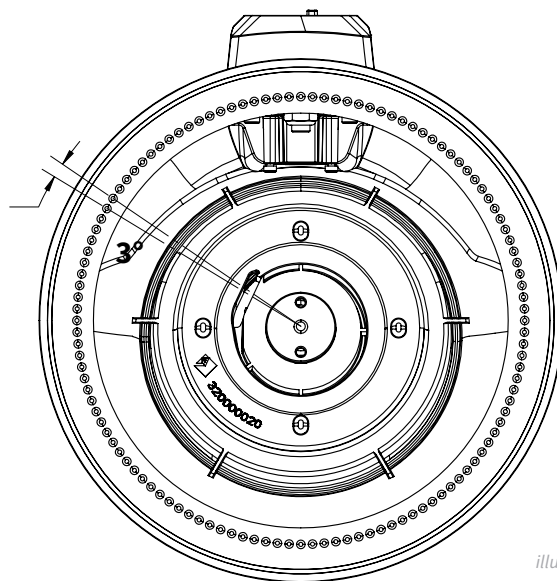
Grill Options (Included)



illus.-2.1



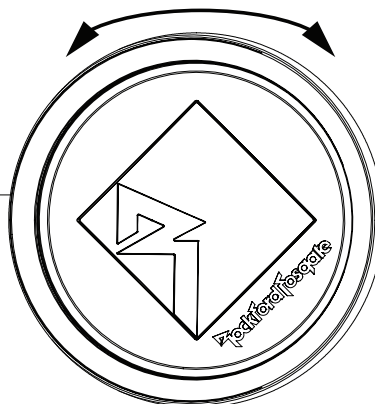
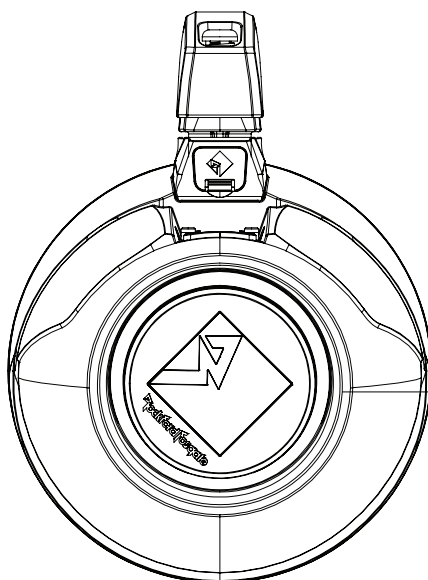
Speaker Adjustment



illus.-3.1

Remove the speaker to reveal the multi-point mounting option to make sure your speaker is mounted correctly. No matter what direction the speaker is mounted, it should always look like the image above.

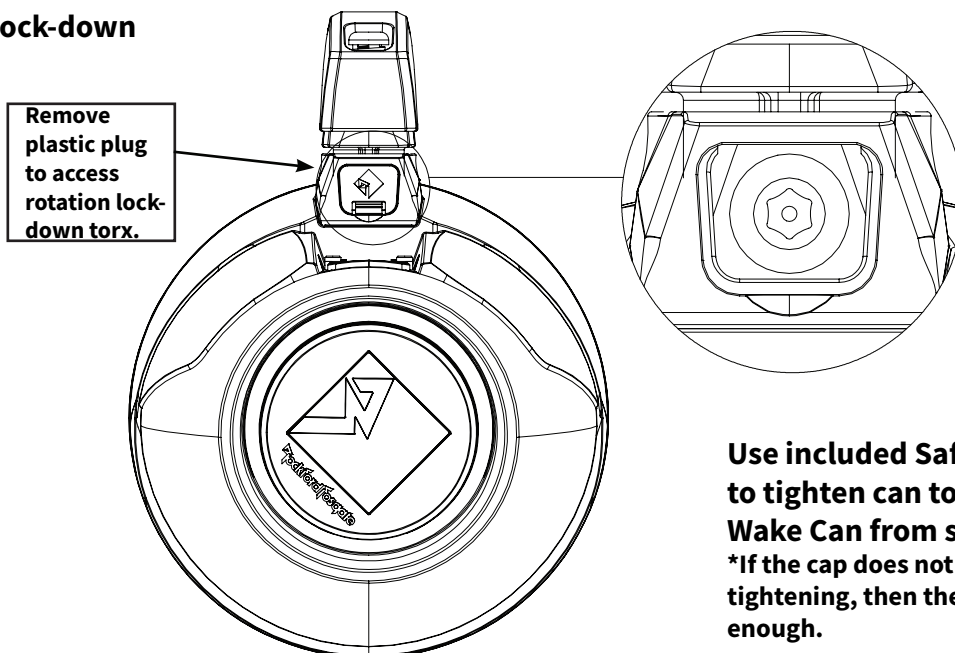
Rear Medallion Rotation



illus.-3.2

Rotate Medallion to look like image after mounting Wake Cans
The bottom of the Diamond R should be down like the image when mounted

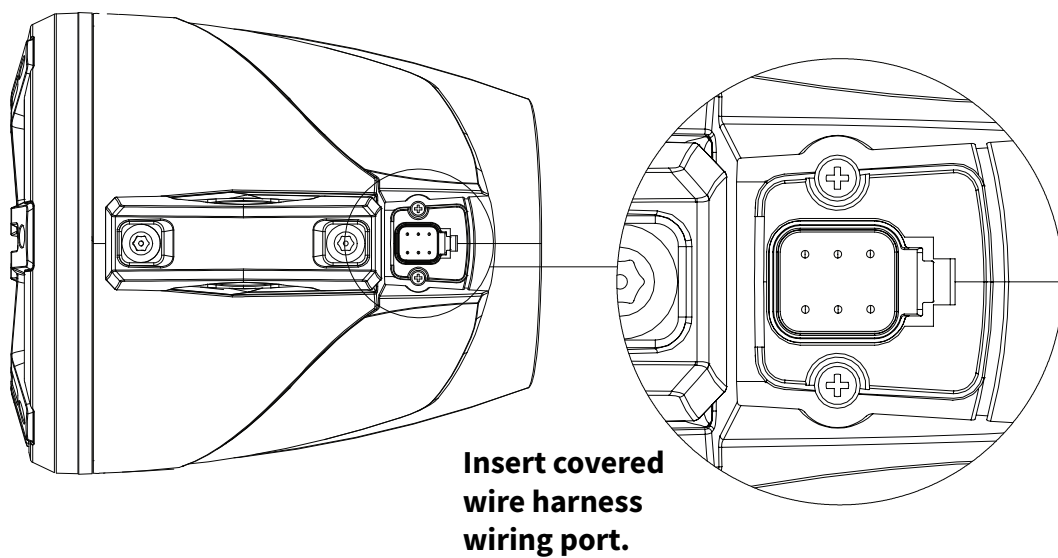
Rotation Lock-down



illus.-3.3

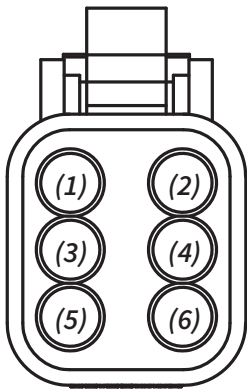
Use included Safety Torx Wrench to tighten can to clamp to keep Wake Can from swivling.
***If the cap does not fully snap in after tightening, then the bolt is not tight enough.**

Wiring



illus.-4.2

Installation

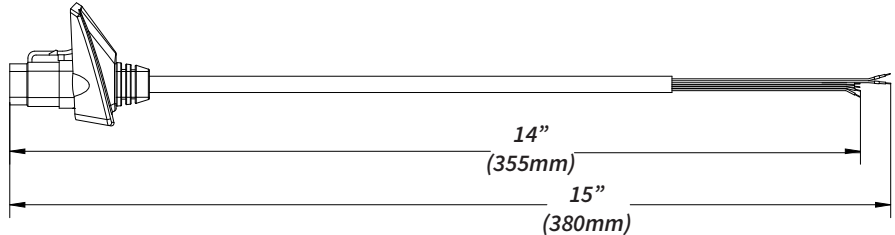


- 1 - BLACK (Speaker Negative, 18 AWG)
- 2 - YELLOW (12V + Input, 22 AWG)
- 3 - RED (Speaker Positive, 18 AWG)
- 4 - GREEN (Ground Input, 22 AWG)
- 5 - RED (Ground Input, 22 AWG)
- 6 - BLUE (Ground Input, 22 AWG)

Included with speakers

Connector is DEUTSCH™/Amphenol style DT06-4S

illus.-4.3



illus.-4.4

Contents

- (1) Pair Moto Can Speakers
- (1) Pair Universal Clamps
- (4) Grommets
- (4) Safety Inserts for Screw Clamp
- (2) 1" to 1.6" Rubber Clamp Inserts and Stainless Hardware
- (2) 1.6" to 2" Rubber Clamp Inserts and Stainless Hardware
- (2) Speaker Harnesses
- (1) Pair Sport Grills (Installed on M1)
- (1) Pair Sport Grills (Installed on M2, not available on M1)
- (1) Allen Bit For Speaker Removal For Rotation
- (1) Safety Torx Wrench

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 safety, disconnect the negative lead from the battery prior to beginning the installation.
3. For easier assembly, we suggest you run all wires prior to mounting your speakers in place.
4. Use high quality connectors for a reliable installation and to minimize signal or power loss.
5. 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.
6. Never run wires underneath the vehicle. Running the wires inside the vehicle or hull area provides the best protection.
7. 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. Be sure that the mounting location has sufficient clearance in all direction for the speaker to swivel; conduct a full rotation to ensure there is not obstruction.
2. Mark the location where the wiring will come out near where the Moto can will be mounted. Drill a 7/16" hole in the location you marked for your wire exit. The wiring will connect to the rear of the can *illus.-4.2*.
3. Insert the supplied grommet and feed the wire harness through. Be sure to observe proper polarity when connecting the wires. The speaker harness's negative wire is the BLACK 18 AWG wire and the Positive is the RED 18 AWG wire in the 6 pin connector *illus.-4.3*.
4. Remove the plastic cover over the safety torx bolt to allow access to loosen/tighten the wake can. Do this to adjust the angle of the wake can, then tighten the safety torx bolt to make sure it does not move. Replace plastic cover over safety torx bolt *illus.-3.3*.
5. Rotate the medalion on the rear of the wake can to look like the image in *illus.-3.2*. This can be turned left or right to align the medalion. You will hear/feel a clicking when you rotate it.
6. If you need to rotate the speaker, remove the (6) screws holding the speaker and grill on. Pull the speaker slightly towards you and rotate it until it looks like *illus.-1.1*. Use the predrilled holes to reinstall the speaker *illus.-3.1*.

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— Installation assistance available at: —

RFTECH

— www.rockfordfosgate.com/rftech —



ELEMENT READY™ SPEAKERS

M1

M1-6

M1-6B

M1-65

M1-65B

M1-8

M1-8B



600 South Rockford Drive • Tempe, Arizona 85281 United States
Direct: (480) 967-3565 • Toll Free: (800) 669-9899

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<i>Model</i>	M1-6 M1-6B	M1-65 M1-65B	M1-8 M1-8B
<i>Nominal Size</i>	6" (152.4mm)	6.5" (165mm)	8" (203.2mm)
<i>Description</i>	2-Way	2-Way	2-Way
<i>Nominal Impedance (Ohms)</i>	4Ω	4Ω	4Ω
<i>Frequency Response (Hz)*</i>	42-22kHz	38-22kHz	35-22kHz
<i>Power Handling - Watts (RMS/Peak)</i>	75/300	75/300	150/600
<i>Sensitivity</i>	89dB	90dB	92dB
<i>Grille/Trim Ring</i>	YES	YES	YES
<i>LED Current Draw</i>	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
<i>LED Voltage Range</i>	9-16 Volts	9-16 Volts	9-16 Volts

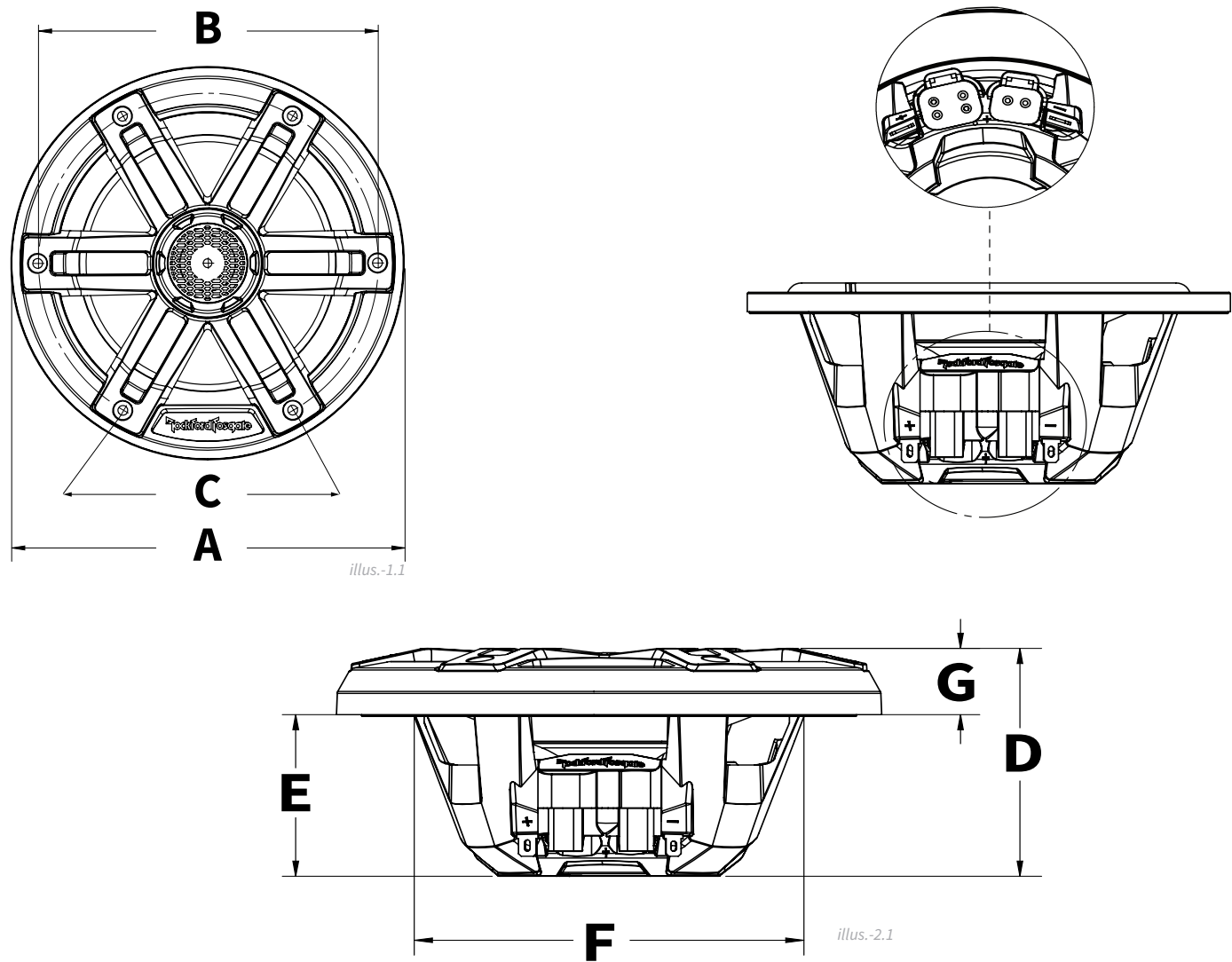
* Rockford Fosgate determines its rated frequency response range at -6 dB below its nominal sensitivity at upper and lower extents of a speaker's output.



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Diagrams



Model	M1-6 M1-6B	M1-65 M1-65B	M1-8 M1-8B
Overall Diameter (A)	7.09" (108.1mm)	7.09" (108.1mm)	8.23" (209.1MM)
Screw Mounting Diameter (B)	6.12" (155.5mm)	6.12" (155.5mm)	7.76" (197.1mm)
Mounting Screw Angle (C)	6@60°	6@60°	6@60°
Overall Height (D)	3.54" (90mm)	3.54" (90mm)	4.63" (117.6mm)
Mounting Depth (E)	2.52" (63.9mm)	2.52" (63.9mm)	3.3" (83.9mm)
Cut-out Diameter (F)	5.07" (128.7mm)	5.36" (136.15mm)	7.1" (180.2mm)
Grill Height (G)	1.06" (26.1mm)	1.06" (26.1mm)	1.33" (33.7mm)

COLOR OPTIX™ Wiring

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-RGB. See COLOR OPTIX™ wiring chart for wiring options.
- Rockford recommends a minimum of 20 gauge wire when hardwiring 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 specifications to determine the size of fuse (not included) needed

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

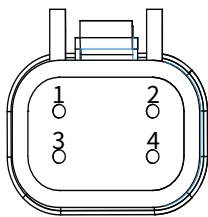
COLOR OPTIX™ WIRING OPTIONS

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™ Pin Out (wire side)



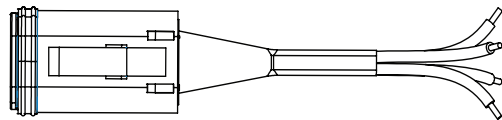
- 1 - RED
- 2 - Yellow
- 3 - Blue
- 4 - Green

Included with speakers

Connector is DEUTSC™ style DT06-4S

illus.-4.1

COLOR OPTIX™ Connector



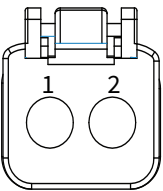
Included

illus.-4.2

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™/Ampaenol connector (not included) input next to the COLOR OPTIX™ connector.



Speaker Pin Out (wire side)

- 1 - RED - Positive Speaker Input
 - 2 - BLACK - Negative Speaker Input
- NOT included with speakers**

Connector is DEUTSCH™ style DT06-2S

illus.-4.3

Contents

- (1) Pair Marine Grade Speakers
- (13) Socket head stainless screws
- (2) Allen/Hex key drill bit adaptor
- (1) 1/8" Drill Bit
- (2) COLOR OPTIX™ Harness

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.*
3. *Mark the locations for the mounting screws. Drill the holes with the included 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.*

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 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.

— Installation assistance available at: —

RFTECH

— www.rockfordfosgate.com/rftech —



ELEMENT READY™ SUBWOOFERS

M1

M1D2-8

M1D2-8B

M1D4-8

M1D4-8B

M1D2-10

M1D2-10B

M1D4-10

M1D4-10B

M1D2-12

M1D2-12B

M1D4-12

M1D4-12B



600 South Rockford Drive • Tempe, Arizona 85281 United States
Direct: (480) 967-3565 • Toll Free: (800) 669-9899

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 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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2	Introduction
3-4	Specifications
5-6	Enclosures
7-9	Wiring
10-29	Additional Languages
	French
	Spanish
	German
	Italian
32	Limited Warranty Information

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.

Safety

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

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

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

- 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>	M1D2-8/B M1D4-8/B	M1D2-10/B M1D4-10/B	M1D2-12/B M1D4-12/B
<i>Nominal Size</i>	8" (203.2mm)	10" (254mm)	12" (304.8mm)
<i>Description</i>	Subwoofer	Subwoofer	Subwoofer
<i>Nominal Impedance (Ohms)</i>	2 or 4 Ω DVC	2 or 4 Ω DVC	2 or 4 Ω DVC
<i>Frequency Response (Hz)*</i>	28-750	28-750	28-750
<i>Voice Coil Diameter - inch (mm)</i>	1.5" (4-Layer) (38.6mm)	1.95" (4-Layer) (49.5mm)	1.95" (4-Layer) (49.5mm)
<i>Power Handling - Watts (RMS/Peak)</i>	150/600	300/1200	300/1200
<i>Fs - Free Air Resonance (Hz)</i>	44.5	34	26
<i>Qts</i>	0.9	0.44	0.53
<i>Vas - cu. ft. (Liter)</i>	0.55 ³ (15.7L)	1.56 ³ (44.2L)	4.03 ³ (114.2L)
<i>Displacement - cu. fl. (Liter)</i>	0.05 ³ (1.41L)	0.1 ³ (2.8L)	0.12 ³ (3.49L)
<i>Sensitivity (2.83V/1M)</i>	87.5dB	91.5dB	92dB
<i>Xmax - inch (mm)</i>	0.28" (7mm)	0.28" (7mm)	0.28" (7mm)
<i>Grille/Trim Ring</i>	YES	YES	YES
<i>LED Current Draw</i>	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
<i>LED Voltage Range</i>	9-16 Volts	9-16 Volts	9-16 Volts

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

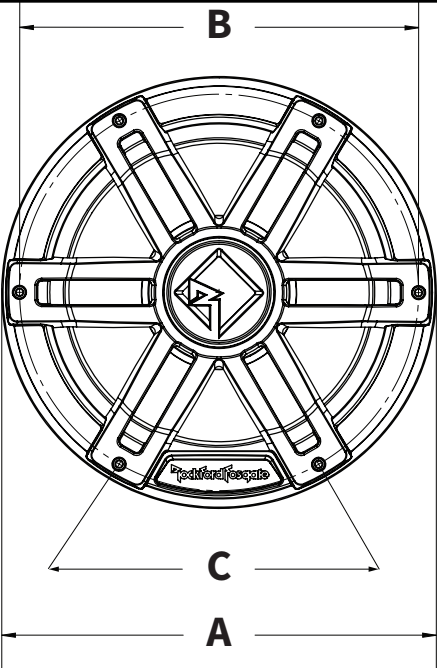
★ Rockford Fosgate determines its rated frequency response range at -6 dB below its nominal sensitivity at upper and lower extents of a speaker's output.



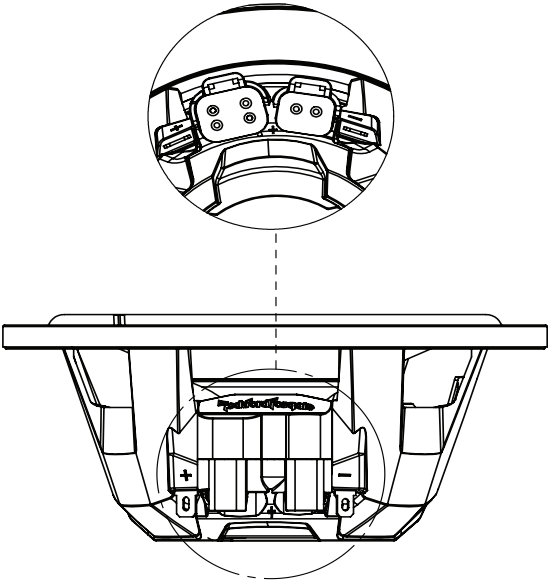
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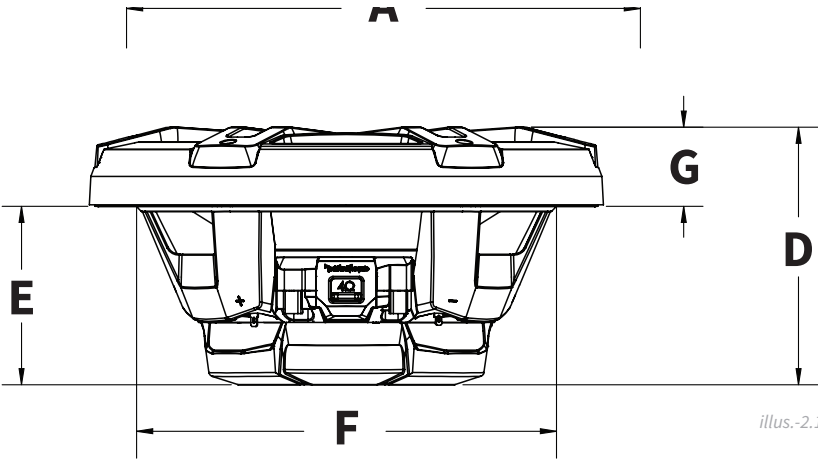
Specifications



illus.-1.1



illus.-3.1



illus.-2.1

Model	M1D2-8/B M1D4-8/B	M1D2/4-10 M1D2/4-10	M1D2/4-12 M1D2/4-12
Overall Diameter (A)	9" (230mm)	11" (281.1mm)	13.28" (337.3mm)
Screw Mounting Diameter (B)	7.76" (197mm)	10.16" (258mm)	12.19" (309.6mm)
Mounting Screw Angle (C)	6@60°	6@60°	6@60°
Overall Height (D)	4.76" (120.8mm)	5.87" (149mm)	6.65" (169.1mm)
Mounting Depth (E)	3.43" (87.1mm)	4.23" (107.4mm)	4.6" (117.1mm)
Cut-out Diameter (F)	7.1" (180.2mm)	8.9" (226mm)	10.85" (275.6mm)
Grill Height (G)	1.33" (33.7mm)	1.64" (41.7mm)	2" (51.9mm)

Carton Contents

- (1) Element Ready™ Subwoofer with fixed Sport Grill
- (1) COLOR OPTIX™ Harness
- (1) Socket head driver bit
- (6) Socket Head Stainless Screws
- (1) 1/8" Drill Bit
- Installation and 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 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
- Extended low frequency output when compared to vented enclosures

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

Infinite Baffle Design

These designs typically called "IB", are the easiest enclosure types to build. The reason is that you are not actually building an enclosure, but rather simulating one. This is done by closing off a cavity area (ie; car trunk, enclosed area of a boat hull) with a baffle board. This creates your "IB" sub-woofer system. Essentially, an "IB" design can just be considered a large sealed enclosure design. Given that an "IB" design does not rely on a volume of air for its suspension, the low frequency output is driven by the speaker's inherent damping or "Qtc".

Advantages of infinite baffle design:

- Easy to build
- Light-weight
- Deep bass response with lower power requirements

Vented vs Sealed vs Infinite Baffle

The graph shown here is a sample of how SPL and Excursion differs

between the various enclosures.

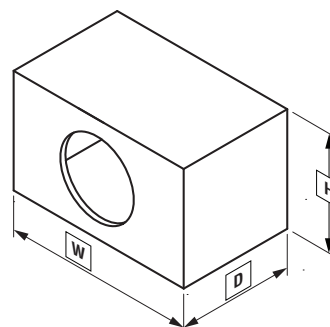
Building an Enclosure

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.

Calculating Volume

Calculating volume is merely a matter of measuring the dimensions in inches and using the formula: H x W x D divided by 1728 (cubic feet). See block below.

Box Volume	Height" x Width" x Depth"
Divided by (cubic feet)	1728



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.

Sealed Enclosure

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 Sealed Enclosure Recommendation

Sealed Enclosures	8"	10"	12"
Total Internal Volume cu. ft. (Liter)	0.55 (15.62)	1.1 (31.15)	1.65 (46.72)
Woofer Displacement cu. ft. (Liter)	0.05(1.41)	0.1 (2.83)	0.12 (3.4)
V _b - Net Internal Volume cu. ft. (Liter)	0.50 (14.2)	1.0 (28.32)	1.53 (43.32)
F ₃ - 3dB Point (Hz)	47.7	58.4	43.1
Qtc - Enclosure Damping	1.19	0.66	0.88
H - Height - inch (cm)	12 (30.48)	14.0 (35.56)	15.0 (38.1)

Enclosures

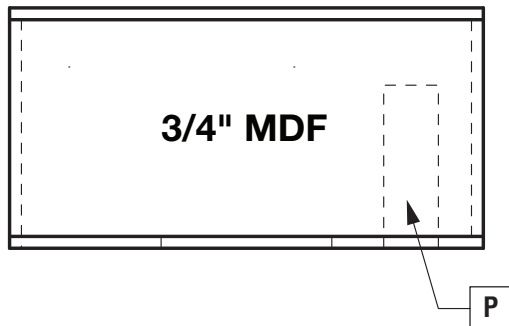
W - Width - inch (cm)	12 (30.48)	16.0 (40.64)	16.0 (40.64)
D - Depth - inch (cm)	10 (25.4)	13.25 (33.66)	15.0 (38.1)

Recommended Sealed Enclosure Volume Range

Sealed Enclosures	8"	10"	12"
V _b - Volume range cu. ft. (Liter)	0.4 to 0.75 (11.34 - 21.24)	0.75 to 1.25 (21.24 - 35.4)	1.25 to 1.75 (35.4 - 49.55)

Vented Enclosures

NOTE: V_b is the internal volume, before any speaker and/or port displacement is added. All external dimensions were based on



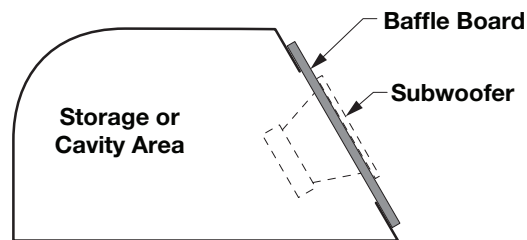
the use of 3/4" (1.90cm) materials.

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

Optimum Vented (Ported) Enclosure Sizes

Vented Enclosures	8"	10"	12"
Total Internal Volume cu. ft. (Liter)	1.10 (31.15)	1.45 (41.06)	2.45 (69.38)
Woofer Displacement cu. ft. (Liter)	0.05 (1.41)	0.1 (2.83)	0.12 (3.4)
Port Displacement cu. ft. (Liter)	.03 (.85)	0.1 (2.83)	0.33 (9.35)
V _b - Net Internal Volume cu. ft. (Liter)	1.0 (28.3)	1.25 (35.4)	2.0 (56.63)
F _b - Tuning Frequency (Hz)	45	40	35
F ₃ - 3dB Point (Hz)	34.7	39	36
H - Height - inch (cm)	12 (30.48)	15.0 (38.1)	16.0 (40.64)
W - Width - inch (cm)	16 (40.64)	15.0 (38.1)	20.0 (50.8)
D - Depth - inch (cm)	14 (35.56)	15.25 (38.74)	17.5 (44.45)
P - Port Diameter and Length - inch (cm)	3 x 9.4 (7.62 x 23.9)	3 x 9.5 (7.62 x 24.13)	4 x 14 (10.16 x 35.56)

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.

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.

Infinite Baffle	8"	10"	12"
F ₃ - 3dB Point (Hz)	42.7	69.4	43.3
V _{as} - cu. ft. (Liter)	0.63 (17.9)	1.77 (50.2)	4.03 (114.2)
Q _{tc} - Enclosure Damping	0.66	0.43	0.54

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

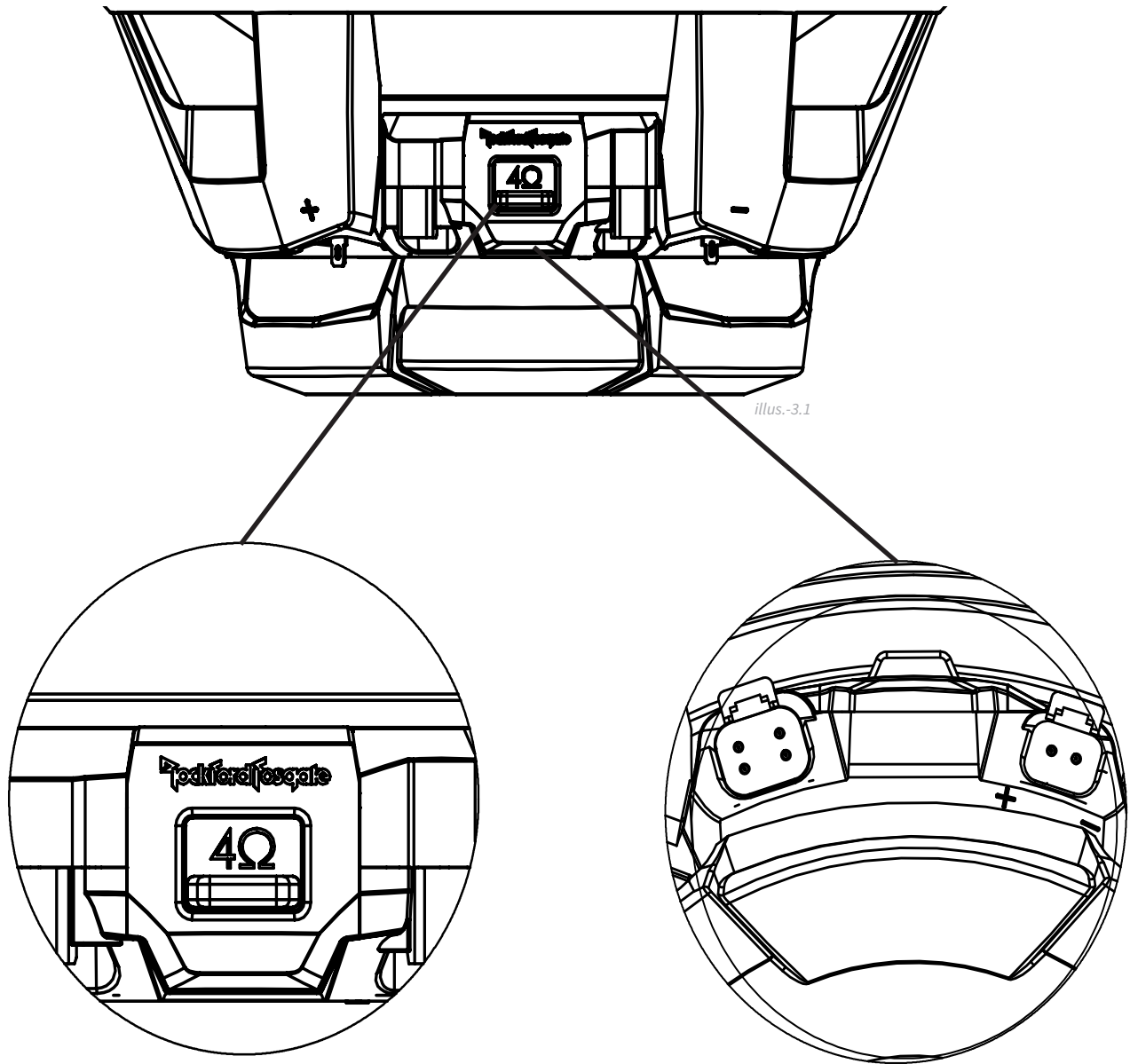
NOTE: Infinite baffle installations will result in lower speaker power handling when compared to fully enclosed applications such as sealed or vented enclosures.

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

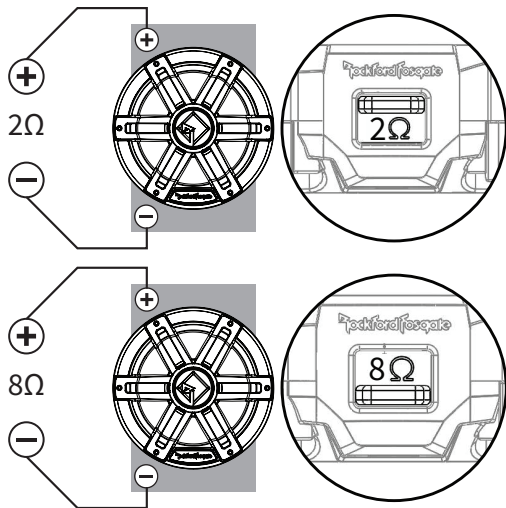
There are two operational types of crossovers, passive and active. Passive crossovers (coils or inductors) are placed on the speaker leads between the amplifier and speaker. An active crossover is an electronic filter that separates the audio signal fed to different amplifiers. For optimum subwoofer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



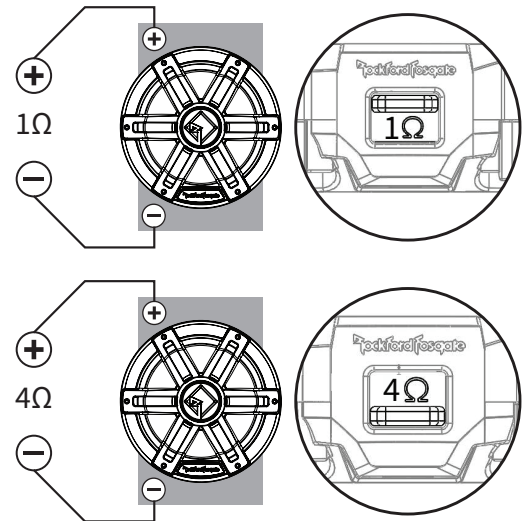
SPEAKER TERMINAL SWITCH

SPEAKER & COLOR OPTIX™ TERMINALS

D4 Impedance Options

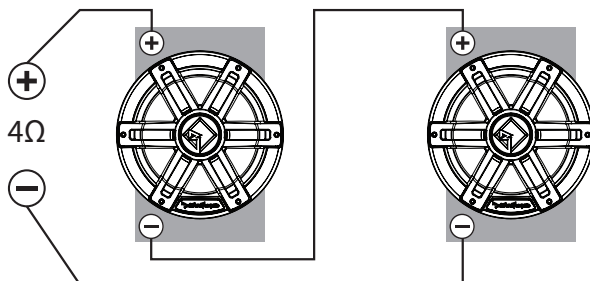


D2 Impedance Options

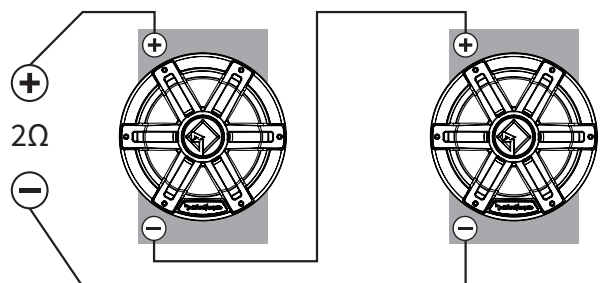


Woofer Series Wiring Options

D4 with Switch on 2Ω

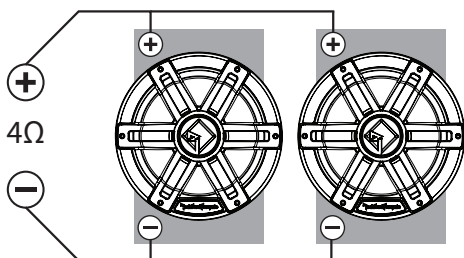


D2 with Switch on 1Ω

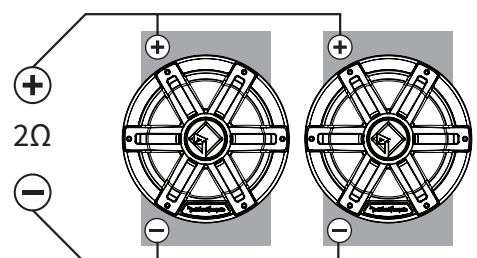


Woofer Parallel Wiring Options

D4 with Switch on 8Ω

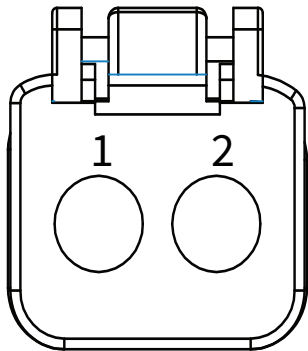


D2 with Switch on 4Ω



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

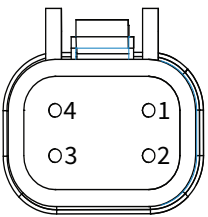
- Do not connect to 24 Volt electrical systems
- We recommend only using the COLOR OPTIX™ wiring chart or connecting to the PMX-RGB. Connecting any other way could cause damage to the speakers or the device you have connected to.
- We recommend installing a fuse (not included) on the Yellow 12 Volt wire 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™ 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™ Pin Out (wire side)



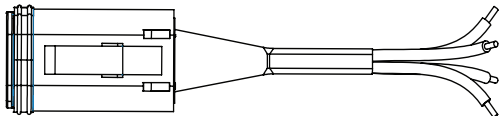
illus.-4.1

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™ Connector



Included

illus.-4.2

Contenu du carton

- (1) Subwoofer de qualité marine avec grille Sport
- (1) Faisceau COLOR OPTIX™
- (1) Mèche à tête creuse
- (6) Vis inoxydables à tête creuse
- Mèche 1/8"
- Manuel d'installation et d'exploitation

Enceintes recommandées

Ce manuel décrit deux types spécifiques d'enceintes qui offrent une performance distinctement différente. Cette section a pour but de vous aider à décider quel type convient le mieux à votre application.

Enceintes scellées

Les enceintes scellées sont les plus simples à construire. La partie la plus importante de la construction d'une enceinte scellée est de s'assurer que l'enceinte est étanche. Utiliser de la colle et un type de produit d'étanchéité sur tous les joints garantira une construction solide et empêchera des fuites d'air. Le volume du caisson aura un impact direct sur la performance du haut-parleur. Les enceintes plus grandes fourniront une réponse plus plate et des basses plus profondes tandis que les enceintes plus petites fourniront une bosse dans la courbe de réponse et une sortie généralement plus élevée pour un SPL supérieur.

Avantages des enceintes scellées :

- Petites enceintes
- Réponse linéaire (plate)
- Aucun bruit de port
- Haute tenue en puissance à toutes les fréquences
- Excellent pour la qualité sonore
- Sortie basse fréquence prolongée quand comparée à des enceintes ventilées

Enceintes ventilées

Les enceintes ventilées ne varient de l'enceinte scellée que du fait qu'un événement ou un port est ajouté pour « régler » l'enceinte. Les enceintes recommandées sont conçues pour une excellente performance globale. Les enceintes plus grandes ont tendance à être faciles à régler sur des fréquences inférieures tandis que les enceintes moyennes et petites sont plus faciles à régler sur des fréquences supérieures. Le design ventilé est moins linéaire en réponse que l'enceinte scellée mais avec une sortie remarquablement supérieure à la fréquence de syntonie.

Avantages des enceintes ventilées :

- Sortie moyenne supérieure que les enceintes scellées
- La fréquence de syntonie peut facilement être ajustée en changeant la longueur du port
- Réponse de basses profondes avec des besoins énergétiques inférieurs
- Excellent pour une sortie élevée avec besoins énergétiques limités

Design de suspension acoustique

Ces designs typiquement appelés « IB » sont les types d'enceinte les plus faciles à construire. La raison est que l'on ne construit pas vraiment d'enceinte mais plutôt qu'on la simule. Ceci se fait en fermant une zone de cavité (par ex. ; coffre de voiture, espace clos d'une coque de bateau) avec une plaque de baffle. Ceci crée votre système de subwoofer « IB ». Essentiellement, un design « IB » peut juste être considéré comme design de grande enceinte scellée. Étant donné qu'un design « IB » ne dépend pas d'un volume d'air pour sa suspension, la sortie basse fréquence est menée par l'amortissement inhérent du haut-parleur ou « Qtc ».

Avantages du design de suspension acoustique :

- Facile à construire
- Poids léger
- Réponse de basses profondes avec des besoins énergétiques inférieurs

Baffle ventilé vs scellé vs infini

Le graphique illustré ici est un échantillon de la façon dont SPL et Excursion diffèrent entre les diverses enceintes.

Construire une enceinte

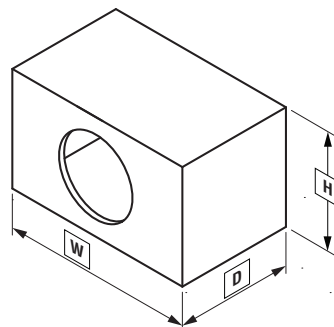
Pour fonctionner correctement, les parois de l'enceinte doivent être rigides et non flexibles quand soumises aux hautes pressions générées par le fonctionnement du haut-parleur. Pour une performance optimale, nous recommandons d'utiliser du MDF 3/4" (panneau de fibres à moyenne densité) et des renforts intérieurs. L'enceinte doit être collée ensemble et sécurisée par des clous ou des vis.

Calculer le volume

Calculer le volume revient simplement à mesurer les dimensions en pouces et à utiliser la formule suivante : H x l x p divisé par 1 728 (pieds cubes). Voir bloc ci-dessous.

Volume du caisson	Hauteur" x Largeur" x Profondeur"
Divisé par (pieds cubes)	1728

Si deux côtés tournés l'un vers l'autre ne sont pas de longueur égale, les ajouter ensemble et diviser par deux pour prendre la moyenne. Utiliser ce



nombre vous donnera le volume sans avoir besoin de calculer le caisson en sections et d'ajouter les sections ensemble. L'épaisseur du matériau de baffle réduit le volume interne, celle-ci doit donc être soustraite des dimensions extérieures pour déterminer le volume interne. Le haut-parleur lui-même réduit également le volume interne. La quantité d'air déplacé par chaque modèle est listée sur la fiche de spécifications et doit également être soustraite du calcul de volume brut.

Enceinte scellée

NOTE : Vb est le volume interne avant d'ajouter un haut-parleur et/ou un déplacement de port. Toutes les dimensions externes étaient basées sur l'utilisation de matériaux de 3/4" (1,90 cm).

NOTE : Lors de l'utilisation d'enceintes autres que celles recommandées, appeler le support technique pour l'application correcte.

Recommandation d'enceinte scellée optimale

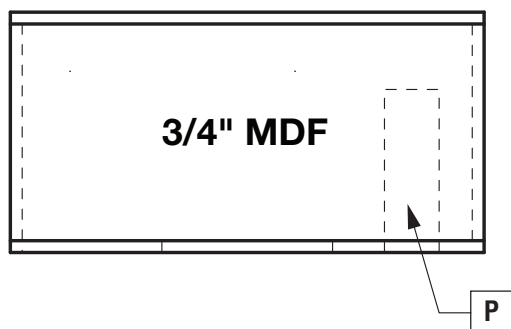
Enceintes scellées	8"	10"	12"
Volume interne total pi3 (litre)	0,55 (15,62)	1,1 (31,15)	1,65 (46,72)
Déplacement de woofer pi3 (litre)	0,05 (1,41)	0,1 (2,83)	0,12 (3,4)
V _b - Volume interne net pi3 (litre)	0,50 (14,2)	1,0 (28,32)	1,53 (43,32)
F ₃ - 3 dB Point (Hz)	47,7	58,4	43,1
Qtc - Amortissement d'enceinte	1,19	0,66	0,88
H - Hauteur - pouce (cm)	12 (30,48)	14,0 (35,56)	15,0 (38,1)
L - Largeur - pouce (cm)	12 (30,48)	16,0 (40,64)	16,0 (40,64)
P - Profondeur - pouce (cm)	10 (25,4)	13,25 (33,66)	15,0 (38,1)

Gamme de volume d'enceinte scellée recommandée

Enceintes scellées	8"	10"	12"
V _b - Gamme de volume pi3 (Litre)	0,4 à 0,75 (11,34 - 21,24)	0,75 à 1,25 (21,24 - 35,4)	1,25 à 1,75 (35,4 - 49,55)

Enceintes ventilées

NOTE : V_b est le volume interne avant d'ajouter un haut-parleur et/ou un déplacement de port. Toutes les dimensions externes étaient basées sur l'utilisation de matériaux de 3/4" (1,90 cm).



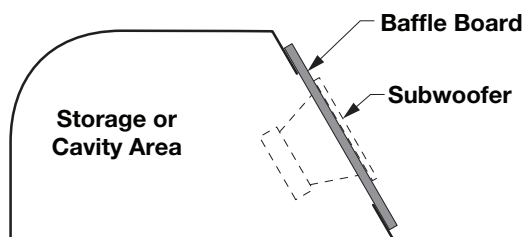
NOTE : Lors de l'utilisation d'enceintes autres que celles recommandées, appeler le support technique pour l'application correcte.

Tailles d'enceinte ventilée (à ports) optimales

Enceintes ventilées	8"	10"	12"
Volume interne total pi3 (litre)	1,10 (31,15)	1,45 (41,06)	2,45 (69,38)
Déplacement de woofer pi3 (litre)	0,05 (1,41)	0,1 (2,83)	0,12 (3,4)
Déplacement de port pi3 (litre)	0,03 (0,85)	0,1 (2,83)	0,33 (9,35)
V _b - Volume interne net pi3 (litre)	1,0 (28,3)	1,25 (35,4)	2,0 (56,63)
F _B - Fréquence de syntonie (Hz)	45	40	35
F ₃ - 3 dB Point (Hz)	34,7	39	36
H - Hauteur - pouce (cm)	12 (30,48)	15,0 (38,1)	16,0 (40,64)
L - Largeur - pouce (cm)	16 (40,64)	15,0 (38,1)	20,0 (50,8)
P - Profondeur - pouce (cm)	14 (35,56)	15,25 (38,74)	17,5 (44,45)
P - Diamètre et longueur de port - pouce (cm)	3 x 9,4 (7,62 x 23,9)	3 x 9,5 (7,62 x 24,13)	4 x 14 (10,16 x 35,56)

NOTE : Le port illustré peut être placé sur n'importe quel côté de l'enceinte à condition que les extrémités de ports ne soient pas obstruées.

NOTE : Lors de l'utilisation d'enceintes ventilées, pour un maximum de fiabilité et de tenue en puissance, s'assurer qu'un filtre subsonique ou « infrasonique » est utilisé de sorte à n'envoyer qu'un signal de basse fréquence utilisable au subwoofer.

**Baffle infini**

Un design de suspension acoustique représente une application où la conformité du volume d'air dans l'enceinte est supérieure à la conformité sur la suspension du haut-parleur (Vas). Un filtre infrasonique est requis pour une performance fiable.

Baffle infini	8"	10"	12"
F ₃ - 3 dB Point (Hz)	42,7	69,4	43,3
Vas - pi3 (litre)	0,63 (17,9)	1,77 (50,2)	3,80 (107,7)
Qtc - Amortissement d'enceinte	0,66	0,43	0,54

IMPORTANT : Un filtre subsonique ou « infrasonique » à ou au-dessus de la fréquence de résonance (Fs) du haut-parleur est requis.

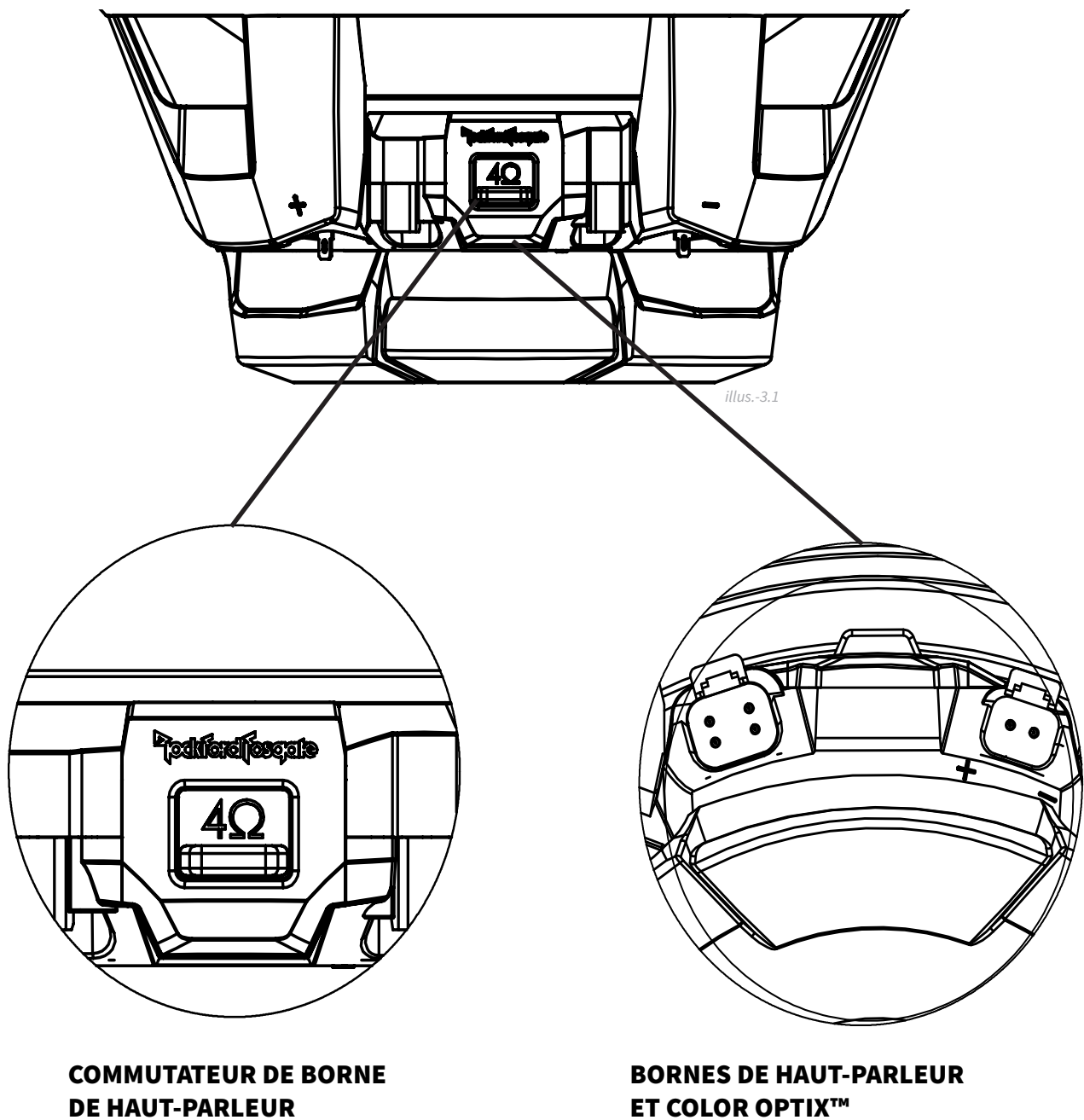
NOTE : Les installations de baffles infinis résulteront en tenue en puissance de haut-parleur inférieure quand comparées aux applications complètement fermées telles que les enceintes scellées ou ventilées.

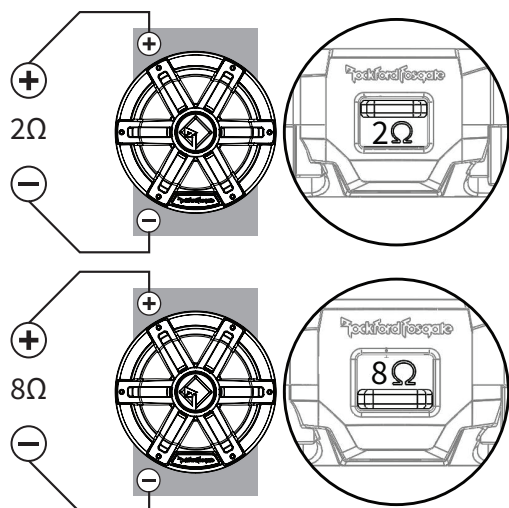
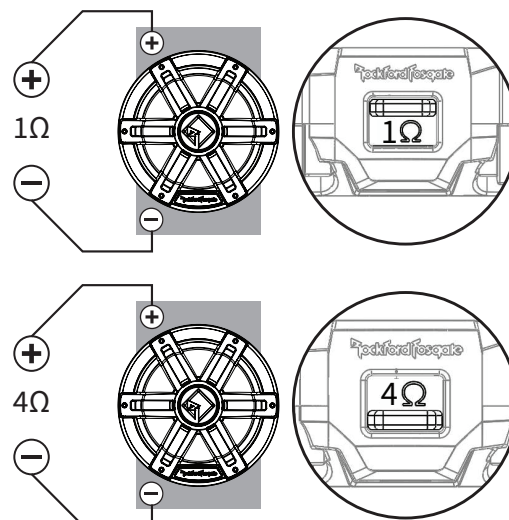
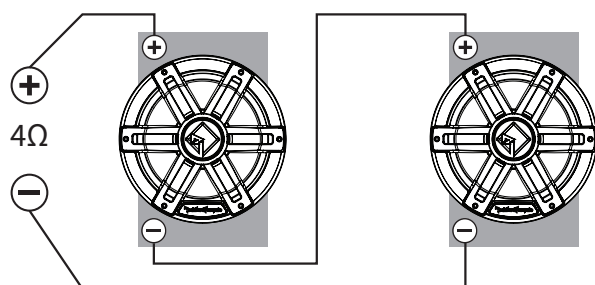
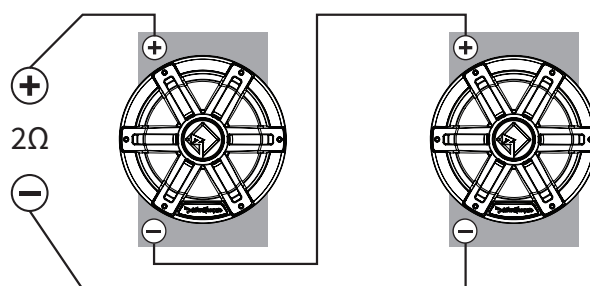
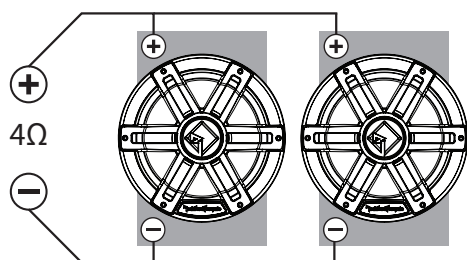
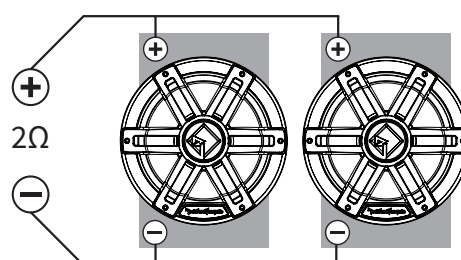
Configurations de câblage

En variant la configuration de câblage des haut-parleurs, il est possible de créer une charge d'impédance correspondant à votre système. Altérer les configurations de câblage offre une gamme d'options pour les charges d'impédance. Les configurations de câblage en série, en parallèle ou en série-parallèle sont des techniques différentes de câbler les haut-parleurs qui offrent différentes charges. La configuration en série est une méthode en chaîne où les haut-parleurs sont câblés de bout en bout. La configuration en parallèle utilise deux ou plusieurs haut-parleurs câblés sur des bornes communes. La configuration en série-parallèle combine les deux techniques. Choisir le schéma de câblage correspondant au nombre de woofers et à l'impédance de l'ampli.

Transitions de subwoofer

Il y a deux types opérationnels de transitions, passives et actives. Les transitions passives (bobines ou inducteurs) sont placées sur les fils de haut-parleur entre l'ampli et le haut-parleur. Une transition active est un filtre électronique qui sépare le signal audio alimenté aux différents amplis. Pour une performance optimale de subwoofer, nous recommandons d'utiliser une transition active Low-Pass/Passe-bas de 80-100 Hz à 12 dB/octave.



D4 Options d'impédance**D2 Options d'impédance****Options de câblage en série de woofer****D4 avec commutateur sur 2Ω****D2 avec commutateur sur 1Ω****Options de câblage en parallèle de woofer****D4 avec commutateur sur 8Ω****D2 avec commutateur sur 4Ω**

Câblage de HAUT-PARLEUR

Il y a deux (2) options différentes pour câbler les haut-parleurs. Utiliser les connecteurs de rechange fournis comme vu dans l'illustration 3.1
On peut également utiliser l'entrée du connecteur DEUTSCH™/style Amphenol (non fourni) à côté du connecteur COLOR OPTIX™.

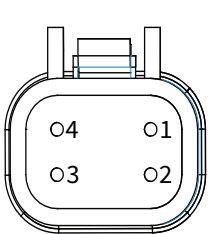
Câblage COLOR OPTIX™

Si on n'utilise pas le PMX-RGB, suivre les diagrammes ci-dessous pour les instructions appropriées de broche de sortie et de raccordement électrique.

Câblage COLOR OPTIX™ - Précautions

- Ne pas connecter à des systèmes électriques de 24 volts
- Nous recommandons de n'utiliser que le diagramme de câblage COLOR OPTIX™ ou de se connecter au PMX-RGB. Se connecter de toute autre façon pourrait endommager les haut-parleurs ou l'appareil auquel on s'est connecté.
- Nous recommandons d'installer un fusible (non fourni) sur le fil jaune de 12 volts quand on N'utilise PAS le PMX-COLOR OPTIX™. Voir le diagramme de câblage COLOR OPTIX™ pour les options de câblage.
- Rockford recommande un fil d'un calibre minimum de 20 lors du raccordement électrique des haut-parleurs COLOR OPTIX™.
- Ne jamais câbler les lumières COLOR OPTIX™ directement à du 12 volts. Utiliser soit le PMX-RGB soit un commutateur à bascule (non fourni) connecté à une alimentation de 12 volts fusionnés. Se référer aux spécifications pour déterminer la taille du fusible (non fourni) nécessaire

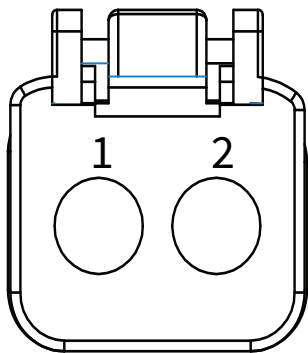
Broche de sortie COLOR OPTIX™ (côté fils)



illus.-4.1

- 1 - Jaune (12 V + Entrée)
 - 2 - Vert (Entrée terre)
 - 3 - Bleu (Entrée terre)
 - 4 - ROUGE (Entrée terre)
- Fourni avec les haut-parleurs**

Le connecteur est DEUTSCH™/style Amphenol DT06-4S



illus.-4.3

Broche de sortie de haut-parleur (côté fils)
1 - ROUGE - Entrée positive de haut-parleur
2 - NOIR - Entrée négative de haut-parleur
NON fourni avec les haut-parleurs

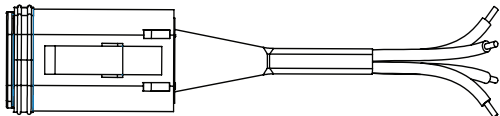
Le connecteur est DEUTSCH™/style Amphenol DT06-2S

OPTIONS DE CÂBLAGE COLOR OPTIX™

COULEUR DE DEL DE SORTIE	CONNECTER CE FIL DE COULEUR À LA TERRE
ROUGE	ROUGE
VERT	VERT
BLEU	BLEU
JAUNE	ROUGE ET VERT
ROSE	ROUGE ET BLEU
AQUA	VERT ET BLEU
BLANC	ROUGE, VERT ET BLEU

Connecter les fils colorés sur la droite pour créer la couleur de sortie sur la gauche.
Connecter tous les fils jaunes ensemble à un courant de 12 volts commutés. Voir les précautions sur le câblage

Connecteur COLOR OPTIX™



Inclus

illus.-4.2

Contenido de la caja

- (1) Subwoofer de grado marino con rejilla deportiva fija
- (1) Arnés COLOR OPTIX™
- (1) Broca para atornillar tornillos de cabeza hueca
- (6) Tornillos de acero inoxidable de cabeza hueca
- (1) Broca de taladro de 1/8 pulg.
- Manual de Instalación y Operación

Cajas recomendadas

Este manual describe dos tipos específicos de cajas que proporcionan un rendimiento marcadamente distinto. Esta sección le ayuda a decidir qué tipo es el mejor para su aplicación.

Cajas selladas

Las cajas selladas son las más simples de construir. La parte más importante de construir una caja sellada es asegurarse de que la misma sea hermética. El uso de adhesivo y algún tipo de sellador en todas las costuras asegurará una construcción sólida y evitará fugas de aire. El volumen de la caja afectará directamente el rendimiento del altavoz. Las cajas más grandes proporcionarán una respuesta más plana y graves más profundos, y las cajas más pequeñas proporcionarán un aumento en la curva de respuesta y, en general, una mayor salida para un mayor nivel de presión sonora (SPL).

Ventajas de las cajas selladas:

- Cajas pequeñas
- Respuesta lineal (plana)
- No hay ruido del puerto
- Manejo de altas potencias a todas las frecuencias
- Excelente calidad de sonido
- Salida de baja frecuencia extendida cuando se compara con las cajas ventiladas

Cajas ventiladas

Las cajas ventiladas se diferencian de las cajas selladas en que se agrega un respiradero o puerto para "sintonizar" la caja. Las cajas recomendadas están diseñadas para otorgar un excelente rendimiento general. Las cajas más grandes tienden a ser fáciles de sintonizar a frecuencias más bajas, mientras que las cajas medianas y pequeñas son más fáciles de sintonizar a frecuencias más altas. El diseño ventilado es menos lineal en respuesta que la caja sellada pero con notablemente más salida en la frecuencia de sintonización.

Ventajas de las cajas ventiladas:

- Mayor salida promedio que las cajas selladas
- La frecuencia de sintonización se puede ajustar fácilmente cambiando el largo del puerto
- Respuesta grave de bajos con menores requisitos de potencia
- Excepcionales para altas salidas con potencia limitada

Diseño de pantalla acústica infinita

A estos diseños normalmente se les llama "IB", son los tipos de caja más fáciles de construir. El motivo es que usted en realidad no está construyendo una caja, simplemente está simulando una. Esto se hace cerrando el área de una cavidad (por ejemplo, cajuela del automóvil, área cerrada del casco de una embarcación) con una tabla de pantalla acústica. Esto crea su sistema de subwoofer "IB". Esencialmente, el diseño "IB" se puede considerar un diseño de caja sellada grande. Dado que el diseño "IB" no depende del volumen de aire para su suspensión, la salida de bajas frecuencias está impulsada por la amortiguación inherente del altavoz o "Qtc".

Ventajas del diseño de la pantalla acústica infinita:

- Fácil de construir
- Peso liviano
- Respuesta grave de bajos con menores requisitos de potencia

Ventilada frente a sellada frente a pantalla acústica infinita

El gráfico que se muestra aquí es una muestra de cómo SPL y Excursion son distintos para las diversas cajas.

Construcción de una caja

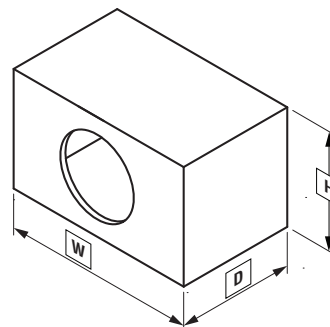
Para que funcione correctamente, las paredes de la caja deben ser rígidas y no se deben flexionar cuando se someten a las altas presiones generadas por la operación del altavoz. Para obtener un rendimiento óptimo, recomendamos usar MDF (tablero de fibra de densidad media) de 3/4 pulg. Con refuerzo interno. Se debe adherir la caja y se la debe asegurar con clavos o tornillos.

Cálculo de volúmenes

Calcular el volumen es simplemente una cuestión de medir las dimensiones en pulgadas y usar la fórmula: Alto x ancho x profundidad dividido por 1728 (pies cúbicos). Consulte el bloque a continuación.

Volumen de la caja	Alto x ancho x profundidad (en pulgadas)
Dividido por (pies cúbicos)	1728

Si dos lados enfrentados tienen una longitud desigual, agréguelos y divídalos por dos para obtener el promedio. El uso de este número le dará el volumen



sin la necesidad de calcular el cuadro en secciones y sumar las secciones. El grosor del material de la pantalla reduce el volumen interno, por lo que se lo debe restar de las dimensiones externas para determinar el volumen interno. El propio altavoz también reduce el volumen interno. En la hoja de especificaciones se enumera la cantidad de aire desplazado por cada modelo y también se debe restar del cálculo del volumen bruto.

Cajas selladas

NOTA: Vb es el volumen interno, antes de agregar cualquier desplazamiento de altavoz y/o puerto. Todas las dimensiones externas se basaron en el uso de materiales de 3/4 pulg. (1.90 cm).

NOTA: Cuando use cajas que no sean las recomendadas, llame al Apoyo Técnico por la aplicación correcta.

Recomendación para cajas selladas óptimas

Cajas selladas	8 pulg.	10 pulg.	12 pulg.
Volumen interno total en pies cúbicos (litros)	0.55 (15.62)	1.1 (31.15)	1.65 (46.72)
Desplazamiento del woofer en pies cúbicos (litros)	0.05 (1.41)	0.1 (2.83)	0.12 (3.4)
V _b - Volumen interno neto en pies cúbicos (litros)	0.50 (14.2)	1.0 (28.32)	1.53 (43.32)
F ₃ - Punto de 3dB (Hz)	47.7	58.4	43.1
Qtc - Amortiguamiento de la caja	1.19	0.66	0.88
H - Alto - pulgadas (cm)	12 (30.48)	14.0 (35.56)	15.0 (38.1)
W - Ancho - pulgadas (cm)	12 (30.48)	16.0 (40.64)	16.0 (40.64)
D - Profundidad - pulg. (cm)	10 (25.4)	13.25 (33.66)	15.0 (38.1)

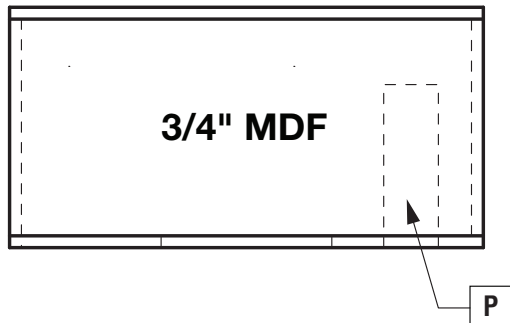
Rango de volumen recomendado de la caja sellada

Cajas selladas	8 pulg.	10 pulg.	12 pulg.
V _b - Rango de volumen pies cúbicos (Litros)	0.4 hasta 0.75 (11.34 - 21.24)	0.75 hasta 1.25 (21.24 - 35.4)	1.25 hasta 1.75 (35.4 - 49.55)

Cajas ventiladas

NOTA: V_b es el volumen interno, antes de agregar cualquier desplazamiento de altavoz y/o puerto. Todas las dimensiones externas se basaron en el uso de materiales de 3/4 pulg. (1.90 cm).

NOTA: Cuando use gabinetes que no sean los recomendados, llame al Soporte Técnico para la aplicación correcta.

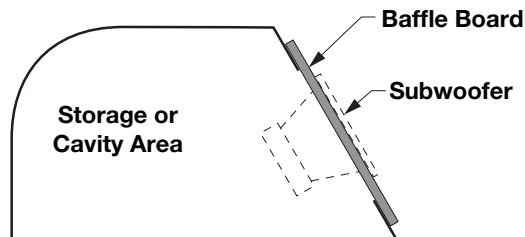


Tamaños óptimos de caja ventilada (con puerto)

Cajas ventiladas	8 pulg.	10 pulg.	12 pulg.
Volumen interno total en pies cúbicos (litros)	1.10 (31.15)	1.45 (41.06)	2.45 (69.38)
Desplazamiento del woofer en pies cúbicos (litros)	0.05 (1.41)	0.1 (2.83)	0.12 (3.4)
Desplazamiento del puerto en pies cúbicos (litros)	0.03 (0.85)	0.1 (2.83)	0.33 (9.35)
V _b - Volumen interno neto en pies cúbicos (litros)	1.0 (28.3)	1.25 (35.4)	2.0 (56.63)
F _B - Frecuencia de sintonía (Hz)	45	40	35
F ₃ - Punto de 3dB (Hz)	34.7	39	36
H - Alto - pulgadas (cm)	12 (30.48)	15.0 (38.1)	16.0 (40.64)
W - Ancho - pulgadas (cm)	16 (40.64)	15.0 (38.1)	20.0 (50.8)
D - Profundidad - pulg. (cm)	14 (35.56)	15.25 (38.74)	17.5 (44.45)
P - Diámetro y longitud del puerto - pulgadas (cm)	3 x 9.4 (7.62 x 23.9)	3 x 9.5 (7.62 x 24.13)	4 x 14 (10.16 x 35.56)

NOTA: El puerto que se muestra se puede colocar en cualquier cara de la caja siempre que los extremos del puerto no estén obstruidos.

NOTA: Al usar cajas ventiladas, para tener confiabilidad y manejo de potencia máximas, asegúrese de usar un filtro subsónico o "infrasónico" para que solo se envíe una señal de baja frecuencia utilizable al subwoofer.



Pantalla acústica infinita

Un diseño de pantalla acústica infinita representa una aplicación en la que el cumplimiento del volumen de aire dentro de la caja es mayor que el cumplimiento de la suspensión del altavoz (V_{as}). Se requiere un filtro infrasónico para tener un rendimiento confiable.

Pantalla acústica infinita	8 pulg.	10 pulg.	12 pulg.
F ₃ - Punto de 3dB (Hz)	42.7	69.4	43.3
V _{as} - pies cúbicos (litros)	0.63 (17.9)	1.77 (50.2)	3.80 (107.7)
Q _{tc} - Amortiguamiento del gabinete	0.66	0.43	0.54

IMPORTANTE: Se requiere un filtro subsónico o "infrasónico" en o por encima de la frecuencia de resonancia (F_s) del altavoz.

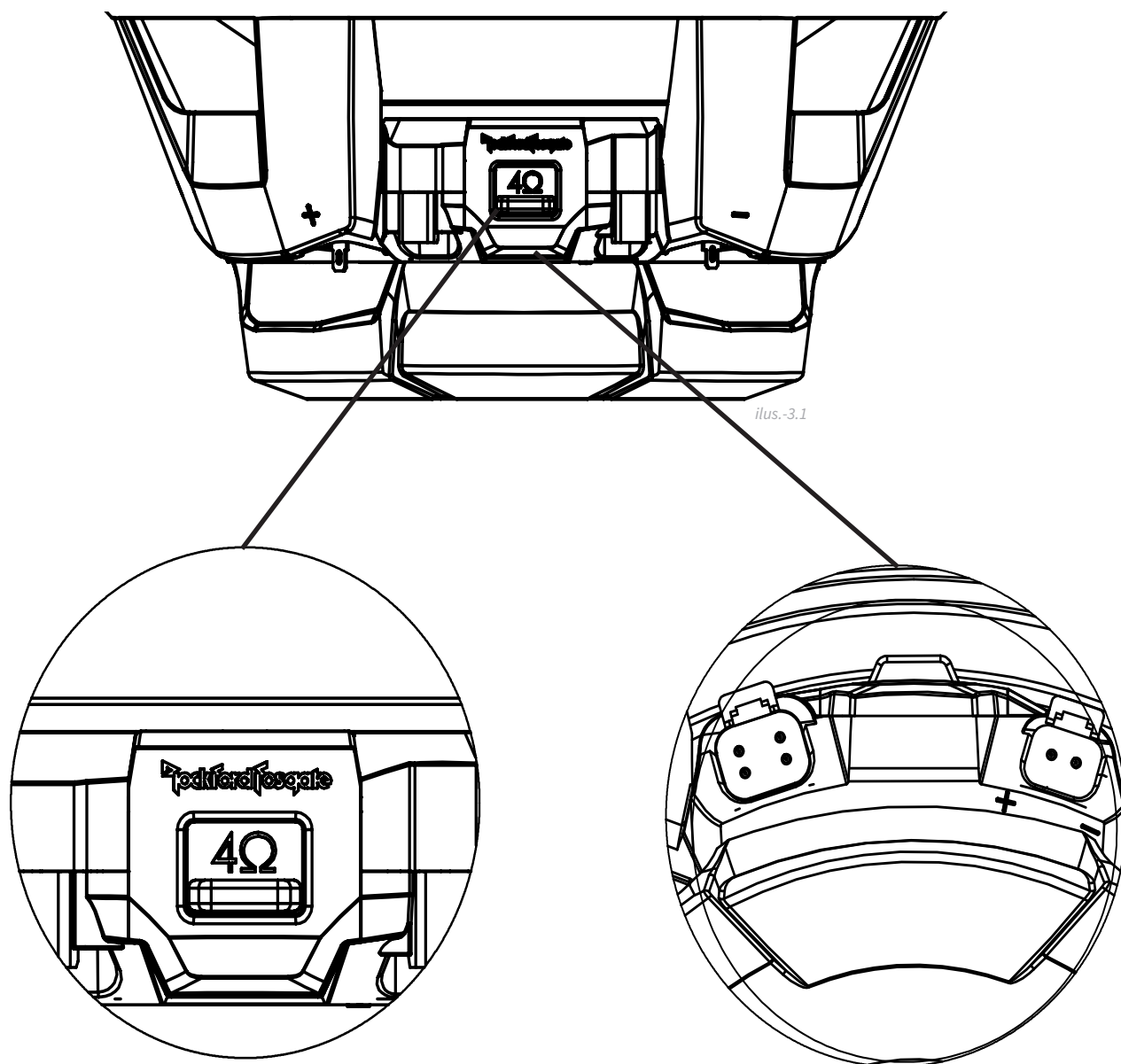
NOTA: Las instalaciones de pantalla acústica infinita darán como resultado un menor manejo de la potencia de los altavoces en comparación con las aplicaciones completamente cerradas, como las cajas selladas o ventiladas.

Configuraciones del cableado

Al variar la configuración del cableado de sus altavoces, puede crear una carga de impedancia para que coincida con su sistema. La alteración de las configuraciones de cableado ofrece una gama de opciones para cargas de impedancia. Las configuraciones de cableado serie, paralelo o serie-paralelo son diferentes técnicas para el cableado de altavoces que proporcionan diferentes cargas. La configuración en serie es un método de cadena, donde los altavoces están conectados de extremo a extremo. La configuración en paralelo utiliza dos o más altavoces conectados a través de terminales comunes. La configuración en serie-paralelo combina ambas técnicas. Elija el diagrama de cableado que corresponda al número de woofers y la impedancia de su amplificador.

Cruces de subwoofer

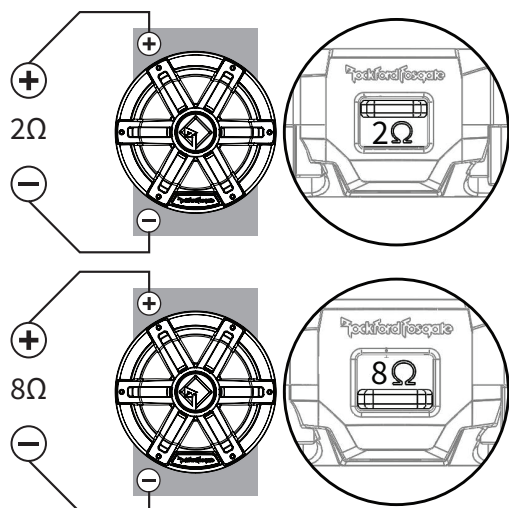
Hay dos tipos operativos de cruces: pasivos y activos. Los cruces pasivos (bobinas o inductores) se colocan en los cables del altavoz entre el amplificador y el altavoz. Un cruce activo es un filtro electrónico que separa la señal de audio alimentada a diferentes amplificadores. Para obtener un rendimiento óptimo del subwoofer, recomendamos usar un cruce de paso bajo activo de 80-100Hz a 12dB/octava.



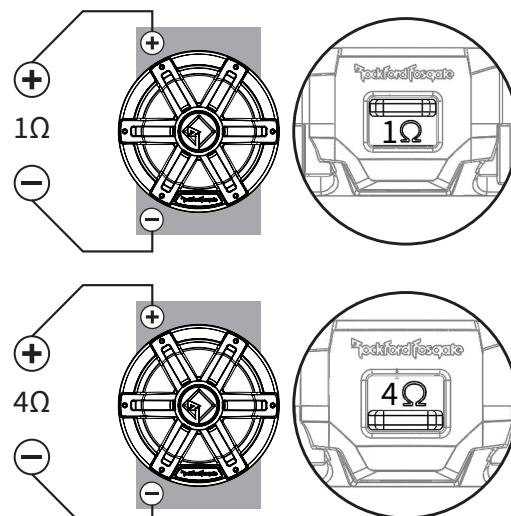
INTERRUPTOR DE TERMINAL DE ALTA VOZ

TERMINALES DE ALTA VOZ Y DEL COLOR OPTIX™

Opciones de impedancia D4

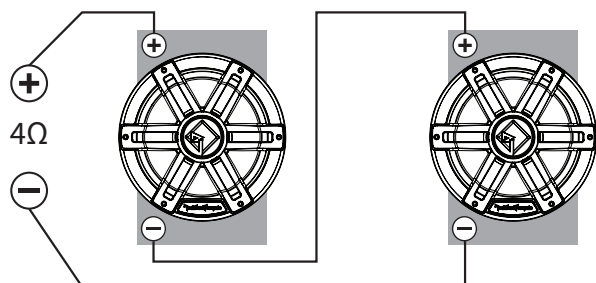


Opciones de impedancia D2

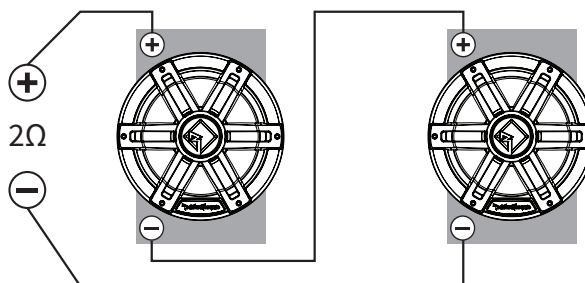


Opciones de cableado en serie para el woofer

D4 con el interruptor en 2Ω

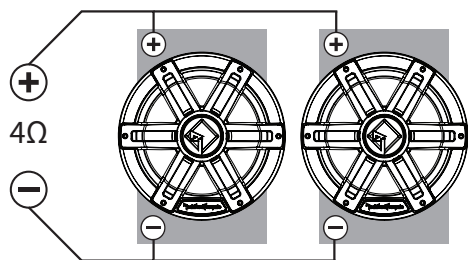


D4 con el interruptor en 1Ω

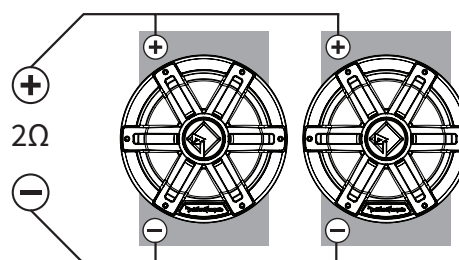


Opciones de cableado en paralelo para el woofer

D4 con el interruptor en 8Ω



D2 con el interruptor en 4Ω



Cableado del ALTAVOZ

Hay (2) diferentes opciones para cablear sus altavoces. Utilice los conectores de pala incluidos (incluidos) como se ve en la ilustración 3.1

También puede utilizar la entrada del conector DEUTSCH™/estilo Amphenol (no incluido) junto al conector del COLOR OPTIX™.

Cableado del COLOR OPTIX™

Si no usa el PMX-RGB, siga los diagramas a continuación para obtener las instrucciones de disposición de contactos y cableado permanente.

Precauciones para el cableado del COLOR OPTIX™

- No lo conecte a sistemas eléctricos de 24 voltios
- Recomendamos usar solamente la tabla de cableado del COLOR OPTIX™ o conectarse a PMX-RGB. Conectarse de cualquier otra manera podría dañar los altavoces o el dispositivo al que se ha conectado.
- Recomendamos instalar un fusible (no incluido) en el cable amarillo de 12 voltios siempre que NO esté utilizando el PMX-COLOR OPTIX™. Consulte la tabla de cableado de COLOR OPTIX™ para ver las opciones de cableado.
- Rockford recomienda un cable de calibre 20 mínimo al cablear sus altavoces COLOR OPTIX™.
- Nunca conecte las luces COLOR OPTIX™ directamente a 12 voltios. Utilice el PMX-RGB o un interruptor oscilante (no incluido) conectado a una fuente de alimentación con fusible de 12 voltios. Consulte las especificaciones para determinar el tamaño de fusible (no incluido) que se necesita

Disposición de contactos del COLOR OPTIX™
(lado del alambre)

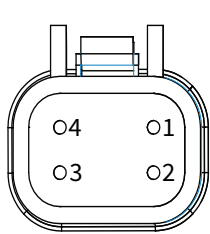


Ilustración - 4.1

- 1 - Amarillo (Conexión a 12V +)
 - 2 - Verde (Conexión a tierra)
 - 3 - Azul (Conexión a tierra)
 - 4 - ROJO (Conexión a tierra)
- Incluido junto con los altavoces**
- El conector es DEUTSCH™/estilo Amphenol DT06-4S

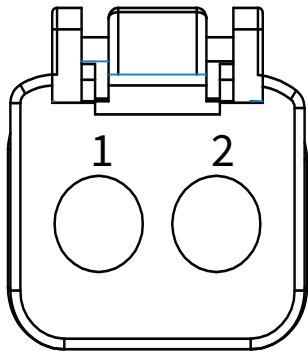


Ilustración - 4.3

Disposición de contactos del altavoz
(lado de los cables)

- 1 - ROJO - Entrada positiva al altavoz
- 2 - NEGRO - Entrada negativa del altavoz

NO se incluye con los altavoces

El conector es DEUTSCH™/estilo Amphenol DT06-2S

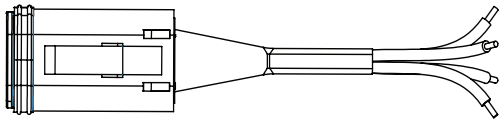
OPCIONES DE CABLEADO COLOR OPTIX™

COLOR DE SALIDA DE LED	CONECTE ESTE CABLE DE COLOR A TIERRA
ROJO	ROJO
VERDE	VERDE
AZUL	AZUL
AMARILLO	ROJO y VERDE
ROSADO	ROJO Y AZUL
AQUA	VERDE Y AZUL
BLANCO	RED, VERDE Y AZUL

Conecte los cables de colores a la derecha para crear el color de salida a la izquierda.

Conecte todos los cables amarillos juntos a 12 voltios conmutados. Consulte las precauciones para el cableado.

Conector COLOR OPTIX™



Incluye

Ilustración - 4.2

Lieferumfang

- (1) Wasserbeständiger Subwoofer mit festem Sportgitter
- (1) COLOR OPTIX™™ Kabelband
- (1) Sechskant-Schraubendreher
- (6) Edelstahl-Sechskantschrauben
- (1) 1/8-Zoll-Bohrerspitze
- Einbau- und Betriebsanleitung

Empfohlene Gehäuse

Diese Anleitung beschreibt zwei verschiedene Arten von Gehäusen mit ganz unterschiedlichen Funktionen. Dieser Abschnitt hilft Ihnen zu entscheiden, welche Art sich für Ihre Anwendung am besten eignet.

Abgedichtete Gehäuse

Abgedichtete Gehäuse lassen sich am einfachsten bauen. Das Wichtigste beim Bauen eines abgedichteten Gehäuses ist sicherzustellen, dass das Gehäuse luftdicht ist. Kleber und ein bestimmter Dichtstoff in allen Fugen garantieren einen soliden Bau und verhindern Lufteinbrüche. Das Gehäusevolumen wirkt sich unmittelbar auf die Lautsprecherleistung aus. Größere Gehäuse produzieren einen flacheren Frequenzgang und tiefere Bässe, während kleinere eine Spitze in der Frequenzgangkurve und eine generell höhere Ausgangsleistung und somit einen größeren Schalldruckpegel produzieren.

Vorteile von abgedichteten Gehäusen:

- Kleine Gehäuse
- Linearer (flacher) Frequenzgang
- Kein Störgeräusch
- Höhere Belastbarkeit auf allen Frequenzen
- Hervorragend für Klangqualität
- Bessere Niederfrequenzen im Vergleich zu Gehäusen mit Belüftungskanal

Gehäuse mit Belüftungskanal

Gehäuse mit Belüftungskanal unterscheiden sich von abgedichteten Gehäusen nur insofern, dass ein Belüftungskanal oder Port hinzugefügt wurde, um das Gehäuse „einzustellen“. Die empfohlenen Gehäuse sind für beste Lautsprecherleistung insgesamt konzipiert. Größere Gehäuse tendieren dazu, sich leichter auf niedrigere Frequenzen einstellen zu lassen, während mittelgroße und kleine Gehäuse sich leichter auf höhere Frequenzen einstellen lassen. Das Design mit Belüftungskanal ist weniger linear im Frequenzgang als das abgedichtete Gehäuse, jedoch mit bedeutend mehr Ausgangsleistung auf der Resonanzfrequenz.

Vorteile von Gehäusen mit Belüftungskanal:

- Höhere durchschnittliche Ausgangsleistung als abgedichtete Gehäuse
- Resonanzfrequenz kann einfach durch Änderung der Kanallänge eingestellt werden
- Tiefbassfrequenzen bei niedrigeren Wattanforderungen
- Ideal für hohe Ausgangsleistung bei begrenzter Wattleistung

Design mit unendlicher Schallwand

Diese Designs werden gewöhnlich als „IB“ (Infinite Baffle) bezeichnet und sind die einfachsten Gehäusearten, die man bauen kann. Der Grund hierfür ist, dass man nicht wirklich ein Gehäuse baut, sondern nur eins simuliert. Dies erfolgt durch Schließen eines Hohlraums (z. B. Kofferraum, abgeschlossener Bereich im Bootsrumpf) mit einer Schallwand. Dies erzeugt das „IB“-Subwoofer-System. Ein „IB“-System kann praktisch einfach als ein großes abgedichtetes Gehäusesystem betrachtet werden. Da das „IB“-Design nicht von einem Luftvolumen für seine Aufhängung abhängt, werden die Niederfrequenzen durch die inhärente Dämpfung oder „QTC“ bestimmt.

Vorteile des Designs mit unendlicher Schallwand:

- Einfach zu bauen
- Geringes Gewicht
- Tiefbassfrequenzen bei niedrigeren Wattanforderungen

Mit Belüftungskanal vgl mit abgedichtet vgl mit Schallwand

Diese Grafik zeigt ein Beispiel, wie sich Schalldruckpegel und Auslenkung in den verschiedenen Gehäusen unterscheiden.

Ein Gehäuse bauen

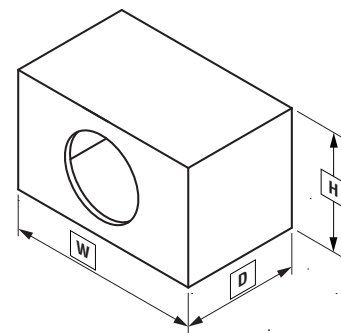
Für eine ordnungsgemäße Funktionsweise müssen die Wände des Gehäuses steif sein und dürfen sich nicht biegen, wenn sie dem hohen Druck ausgesetzt sind, der durch den Betrieb des Lautsprechers erzeugt wird. Für die beste Leistung empfehlen wir 3/4" (19 mm) MDF (Medium Density Fiberboard) und eine interne Verstrebung. Das Gehäuse sollte verleimt und mit Nägeln oder Schrauben gesichert werden.

Berechnung des Volumens

Für die Berechnung des Volumens die Größe in Zoll messen und folgende Formel anwenden: $H \times B \times T$ dividiert durch 1728 (Kubikfuß). Siehe Block unten.

Gehäusevolumen	Höhe" x Breite" x Tiefe"
Dividiert durch	1728
(Kubikfuß)	

Wenn die zwei gegenüberliegenden Seiten unterschiedlich lang sind, diese zusammen addieren und durch zwei dividieren, um den Durchschnitt zu



errechnen. Diese Zahl ergibt das Volumen, ohne das Gehäuse in Teilen errechnen und die Teile dann zusammen addieren zu müssen. Die Stärke des Schallwandmaterials reduziert das Innenvolumen, so dass dies von den Außenabmessungen subtrahiert werden muss, um das Innenvolumen zu bestimmen. Der Lautsprecher selbst reduziert ebenfalls das Innenvolumen. Die Luftmenge, die in jedem Modell verdrängt wird, ist auf dem Datenblatt aufgeführt und sollte auch vom errechneten Bruttovolumen abgezogen werden.

Abgedichtetes Gehäuse

HINWEIS: V_b ist das Innenvolumen, bevor Lautsprecher- und/oder Kanalverdrängung hinzu addiert wird. Alle Außenabmessungen basieren auf der Verwendung von 3/4" (19 mm) Material.

HINWEIS: Wenn andere Gehäuse als die empfohlenen verwendet werden, den Technischen Support für die richtige Anwendung anrufen.

Empfehlung für ein optimal abgedichtetes Gehäuse

Abgedichtete Gehäuse		8 Zoll	10 Zoll	12 Zoll
Gesamtes Kubikfuß (Liter)	Innenvolumen	0,55 (15,62)	1,1 (31,15)	1,65 (46,72)
Woofer-Verdrängung (Liter)	Kubikfuß	0,05 (1,41)	0,1 (2,83)	0,12 (3,4)
V_b - Nettoinnenvolumen (Liter)	Kubikfuß	0,50 (14,2)	1,0 (28,32)	1,53 (43,32)
F_3 - 3 dB Punkt (Hz)		47,7	58,4	43,1
Qtc - Gehäusedämpfung		1,19	0,66	0,88
H - Höhe - Zoll (cm)		12 (30,48)	14,0 (35,56)	15,0 (38,1)
B - Breite - Zoll (cm)		12 (30,48)	16,0 (40,64)	16,0 (40,64)
T - Tiefe - Zoll (cm)		10 (25,4)	13,25 (33,66)	15,0 (38,1)

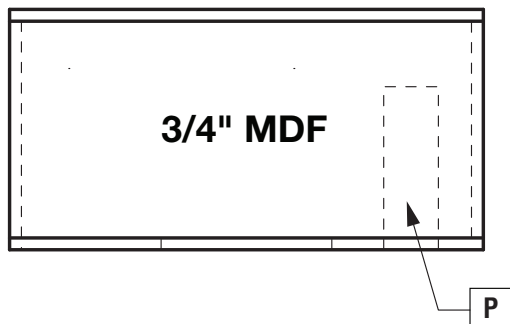
Empfohlener Volumenbereich für abgedichtetes Gehäuse

Abgedichtete Gehäuse	8 Zoll	10 Zoll	12 Zoll
V_b - Volumenbereich Kubikfuß (Liter)	0,4 bis 0,75 (11,34 - 21,24)	0,75 bis 1,25 (21,24 - 35,4)	1,25 bis 1,75 (35,4 - 49,55)

Gehäuse mit Belüftungskanal

HINWEIS: V_b ist das Innenvolumen, bevor Lautsprecher- und/oder Kanalverdrängung hinzu addiert wird. Alle Außenabmessungen basieren auf der Verwendung von 3/4" (19 mm) Material.

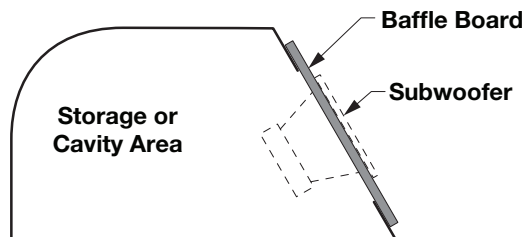
HINWEIS: Wenn andere Gehäuse als die empfohlenen verwendet werden, den Technischen Support für die richtige Anwendung anrufen.

**Optimale Gehäuse mit Belüftungskanal (ventiliert)**

Gehäuse mit Belüftungskanal		8 Zoll	10 Zoll	12 Zoll
Gesamtes Innenvolumen Kubikfuß (Liter)		1,10 (31,15)	1,45 (41,06)	2,45 (69,38)
Woofer-Verdrängung Kubikfuß (Liter)		0,05 (1,41)	0,1 (2,83)	0,12 (3,4)
Kanalverdrängung Kubikfuß (Liter)		0,03 (0,85)	0,1 (2,83)	0,33 (9,35)
V_b - Nettoinnenvolumen Kubikfuß (Liter)		1,0 (28,3)	1,25 (35,4)	2,0 (56,63)
F_b - Resonanzfrequenz (Hz)		45	40	35
F_3 - 3 dB Punkt (Hz)		34,7	39	36
H - Höhe - Zoll (cm)		12 (30,48)	15,0 (38,1)	16,0 (40,64)
B - Breite - Zoll (cm)		16 (40,64)	15,0 (38,1)	20,0 (50,8)
T - Tiefe - Zoll (cm)		14 (35,56)	15,25 (38,74)	17,5 (44,45)
K - Kanaldurchmesser und Länge - Zoll (cm)		3 x 9,4 (7,62 x 23,9)	3 x 9,5 (7,62 x 24,13)	4 x 14 (10,16 x 35,56)

HINWEIS: Der dargestellte Kanal kann auf allen Flächen des Gehäuses platziert werden, solange die Kanäle nicht versperrt werden.

HINWEIS: Bei Verwendung von Gehäuse mit Belüftungskanal für maximale Zuverlässigkeit und Belastbarkeit sicherstellen, dass ein Unterschall- oder „Infraschall“-Filter verwendet wird, damit nur das verwendbare Niederfrequenzsignal an den Subwoofer gesendet wird.

**Unendliche Schallwand**

Ein Gehäusedesign mit unendlicher Schallwand stellt eine Anwendung dar, in der die Nachgiebigkeit des Luftvolumens im Gehäuse größer ist als die Nachgiebigkeit auf der Aufhängung des Lautsprechers (V_{as}). Ein Infraschallfilter ist für zuverlässige Leistung erforderlich.

Unendliche Schallwand	8 Zoll	10 Zoll	12 Zoll
F_3 - 3 dB Punkt (Hz)	42,7	69,4	43,3
V_{as} - Kubikfuß (Liter)	0,63 (17,9)	1,77 (50,2)	3,80 (107,7)
Qtc-Gehäusedämpfung	0,66	0,43	0,54

WICHTIG: Ein Unterschall- oder „Infraschall“-Filter auf oder über der Resonanzfrequenz (F_s) des Lautsprechers ist erforderlich.

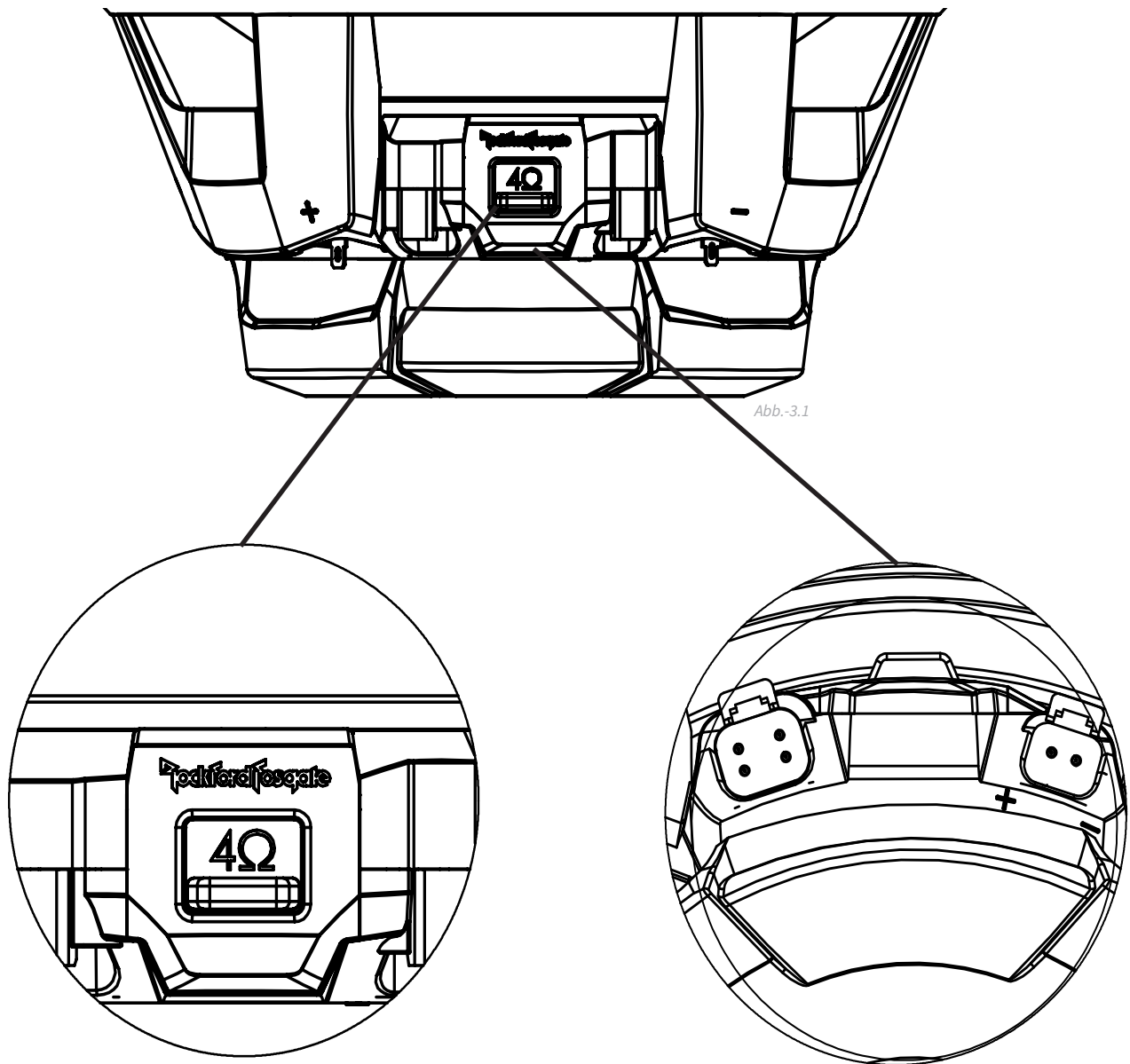
HINWEIS: Unendliche Schallwandinstallationen führen zu einer niedrigeren Belastbarkeit des Lautsprechers im Vergleich zu komplett abgeschlossenen Applikationen wie abgedichtete Gehäuse oder Gehäuse mit Belüftungskanal.

Verkabelungskonfigurationen

Durch Variieren der Verkabelungskonfiguration Ihrer Lautsprecher können Sie eine Impedanzlast erstellen, die an Ihr System angepasst ist. Die Änderung der Verkabelungskonfigurationen liefert eine Reihe von Optionen für Impedanzlasten. Serien-, Parallel oder Serien-Parallelverkabelungskonfigurationen sind verschiedene Techniken für die Verkabelung von Lautsprechern mit verschiedenen Lasten. Die Serienkonfiguration ist eine Kettenmethode, mit der Lautsprecher von Ende zu Ende verkabelt sind. Die Parallelkonfiguration verwendet zwei oder mehr Lautsprecher, die über gemeinsame Anschlüsse verkabelt sind. Die Serien-Parallelkonfiguration verwendet beide Techniken. Wählen Sie das Verkabelungsdiagramm, das der Wooferanzahl und der Impedanz Ihres Verstärkers entspricht.

Subwoofer-Crossover (Frequenzweichen)

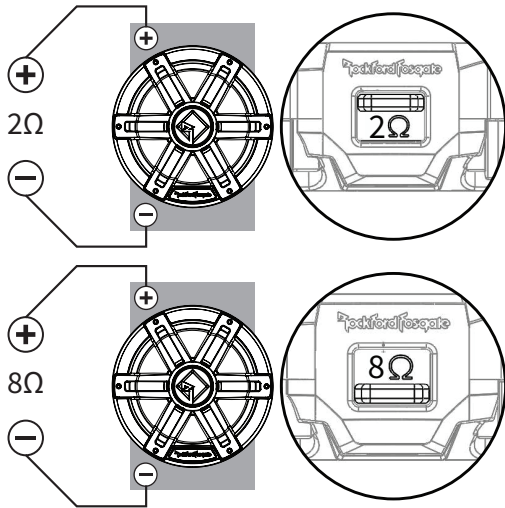
Es gibt zwei Crossover-Arten, passive und aktive. Passive Crossover (Spulen oder Induktoren) werden an den Lautsprecherkabeln zwischen dem Verstärker und dem Lautsprecher angebracht. Aktive Crossover sind elektronische Filter, die das Audiosignal trennen, das an die verschiedenen Verstärker geleitet wird. Für eine optimale Subwoofer-Leistung empfehlen wir ein aktives 80-100 Hz Low-Pass-Crossover mit 12 dB/Oktave.



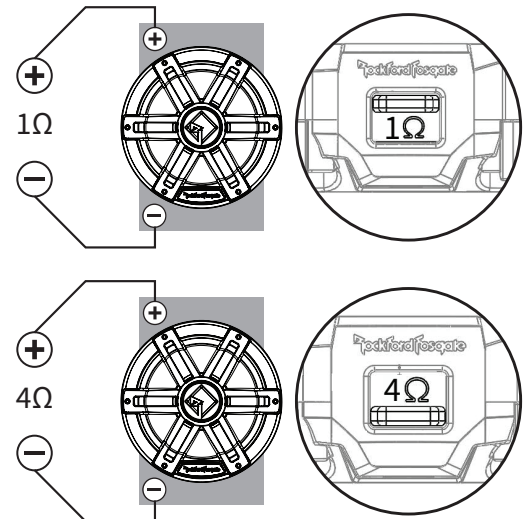
SCHALTER DER LAUTSPRECHERANSCHLÜSSE

**LAUTSPRECHER UND COLOR OPTIX™-
ANSCHLÜSSE**

D4 Impedanzoptionen

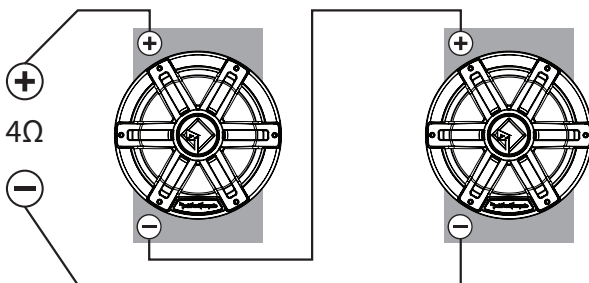


D2 Impedanzoptionen

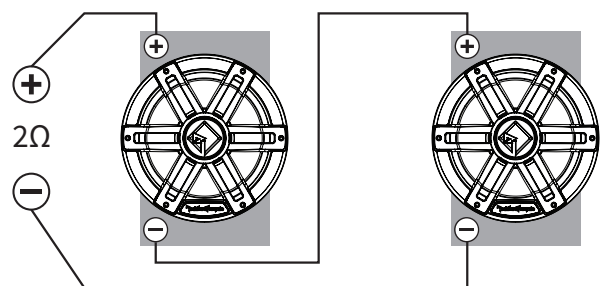


Serienverkabelungsoptionen für Woofer

D4 mit Schalter auf 2Ω

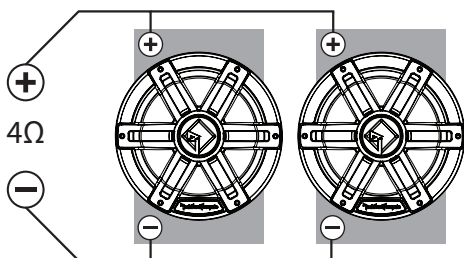


D2 mit Schalter auf 1Ω

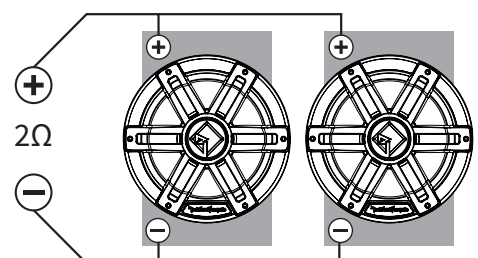


Optionen für Woofer-Parallelverdrahtung

D4 mit Schalter auf 8Ω



D2 mit Schalter auf 4Ω



LAUTSPRECHER-Verkabelung

Es gibt (2) verschiedene Optionen für die Verkabelung Ihrer Lautsprecher.
Verwenden Sie die mitgelieferte Flachsteckhülse wie in Abbildung 3.1. Sie können auch den DEUTSCH™/Amphenol-Stil Konnektor-Eingang (nicht im Lieferumfang) neben dem COLOR OPTIX™ Konnektor verwenden.

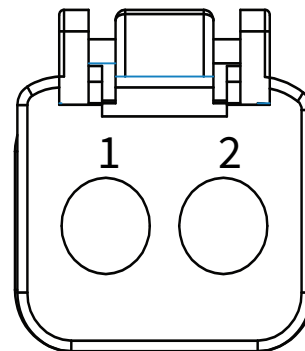


Abb. - 4.3

Lautsprecher-Stiftkontakte (Drahtseite)
1 - ROT - Positiver Lautsprechereingang
2 - SCHWARZ - Negativer Lautsprechereingang
NICHT im Lieferumfang mit den Lautsprechern

Der Konnektor ist DEUTSCH™/Amphenol-Stil DT06-2S

COLOR OPTIX™ Verkabelung

Wenn Sie PMX-RGB nicht verwenden, folgen Sie den Diagrammen unten für die Anleitungen für die korrekten Stiftkontakte und Festverdrahtung.

Vorsichtsmaßnahmen für die COLOR OPTIX™ Verkabelung

- Nicht an 24-Volt-Spannung anschließen
- Wir empfehlen nur die Verwendung der COLOR OPTIX™ Verkabelungstabelle oder den Anschluss an PMX-RGB. Andere Arten von Anschlüssen können die Lautsprecher oder das angeschlossene Gerät beschädigen.
- Wir empfehlen, eine Sicherung (nicht im Lieferumfang) am gelben 12-Volt-Kabel zu installieren, wenn Sie NICHT PMX-COLOR OPTIX™ verwenden. Siehe COLOR OPTIX™ Verkabelungstabelle für Verkabelungsoptionen.
- Rockford empfiehlt eine Kabelstärke von mindestens 20 Gauge für die Festverdrahtung Ihrer COLOR OPTIX™ Lautsprecher.
- COLOR OPTIX™ Lichter nie direkt an 12 Volt anschließen. Verwenden Sie entweder PMX-RGB oder einen Kippschalter (nicht im Lieferumfang), der an ein gesichertes 12-Volt-Netzteil angeschlossen ist. Weitere Informationen zur erforderlichen Sicherungsgröße (nicht im Lieferumfang) finden Sie in den technischen Daten.

VERKABELUNGSOPTIONEN FÜR COLOR OPTIX™

LED-AUSGANGSFARBE	DIESES FARBIGE KABEL AN DIE ERDUNG ANSCHLIESSEN
ROT	ROT
GRÜN	GRÜN
BLAU	BLAU
GELB	ROT U. GRÜN
PINK	ROT U. BLAU
AQUA	GRÜN U. BLAU
WEISS	ROT, GRÜN U. BLAU

Schließen Sie die farbigen Kabel rechts für die Ausgangsfarbe links an.
Schließen Sie alle gelben Kabel zusammen an einem 12-Volt-Schaltkreis an. Siehe Vorsichtsmaßnahmen für die Verkabelung.

COLOR OPTIX™ Stiftkontakte (Drahtseite)

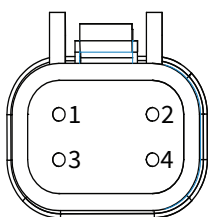
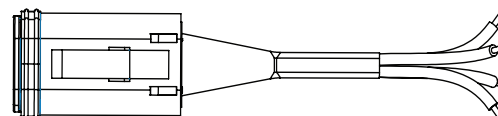


Abb. - 2.1

1 - ROT (Erdungseingang)
2 - Gelb (12 V + Eingang)
3 - Blau (Erdungseingang)
4 - Grün (Erdungseingang)
Im Lieferumfang der Lautsprecher

Der Konnektor ist DEUTSCH™/Amphenol-Stil DT06-4S

COLOR OPTIX™ Konnektor



Mitgeliefert

Abb.-4.2

Contenuto della scatola

- (1) Subwoofer marini con griglia sport fissa
- (1) cablaggi COLOR OPTIX™
- (1) punte esagonali
- (6) viti a testa esagonale inox
- (1) punta di trapano da 1/8 pollice
- Manuale d'installazione e funzionamento

Casse acustiche consigliate

Il presente manuale descrive due tipi di cassa acustica che forniscono prestazioni distintamente diverse. La presente sezione mira ad aiutare a decidere quale sia il tipo migliore per la propria applicazione.

Casse a chiusura ermetica

Le casse a chiusura ermetica sono le più semplici da costruire. La cosa più importante in questo tipo di costruzione è di accertarsi che la chiusura sia a tenuta d'aria. L'uso di colla e di un qualche altro tipo di mastice in tutti i punti di giuntura garantirà che la costruzione sia solida ed eviterà le perdite d'aria. Il volume della cassa influirà in modo diretto sulle prestazioni dell'altoparlante. Le casse più grandi forniranno una risposta più piatta e bassi più profondi, mentre quelle più piccole presenteranno una gobba nella curva di risposta e forniranno in generale un'uscita più alta per un maggiore livello SPL.

Vantaggi delle casse a chiusura ermetica:

- Casse di dimensioni ridotte
- Risposta lineare (piatta)
- Nessun disturbo da apertura
- Gestione di potenza alta a tutte le frequenze
- Eccellente qualità del suono
- Ottima uscita di bassa frequenza a confronto delle casse con sfiato

Casse con sfiato

Le casse con sfiato differiscono da quelle a chiusura ermetica solo per il fatto che in esse è praticata un'apertura o porta per "accordare" la cassa stessa. Le casse consigliate sono state progettate per fornire una buona prestazione nell'insieme. Le casse più grandi sono generalmente più facili da accordare alla frequenza più basse, mentre quelle piccole e di misura mediana sono più facili da accordare alle frequenze più alte. Il design con sfiato ha risposta meno lineare delle casse a chiusura ermetica, ma possiede un'uscita notevolmente maggiore alla frequenza di accordo.

Vantaggi delle casse con sfiato:

- Uscita media superiore alle casse chiuse
- La frequenza di accordo può essere regolata facilmente modificando la lunghezza dell'apertura
- Risposta di bassi profondi con minore potenza
- Ottime per uscita alta con potenza limitata

Design con baffle infinito

Questi cosiddetti design "IB" sono i tipi di cassa più facili da costruire. Ciò è dovuto al fatto che non si costruisce una vera e propria cassa, bensì la si simula. Lo si realizza chiudendo una cavità (per esempio il cofano della macchina, l'area chiusa di uno scafo) con un pannello baffle. Ciò crea il vostro sistema subwoofer "IB". In sostanza, il design "IB" può essere considerato semplicemente un design di grade cassa a chiusura ermetica. Siccome il design "IB" non si basa sul volume d'aria per la sua sospensione, l'uscita di bassa frequenza è determinata dal fattore di smorzamento inerente dell'altoparlante, il "Qtc".

Vantaggi del design con baffle infinito

- Facile da costruire
- Leggero
- Risposta di bassi profondi con minore potenza

Con sfiato rispetto A chiusura ermetica rispetto Baffle infinito

Questa grafica mostra un esempio di come SPL e Excursion sono diversi secondo le varie casse.

Costruzione della cassa

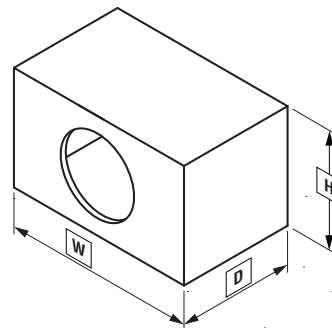
Affinché la cassa possa funzionare in modo corretto è necessario che le pareti siano rigide e non si flettano quando sono assoggettate alle alte pressioni prodotte dall'altoparlante in operazione. Per ottenere i migliori risultati si consiglia di usare MDF (pannello di fibre di densità media) dello spessore di 3/4 di pollice. I pannelli della cassa dovrebbero essere uniti con colla e tenuti assieme in modo sicuro con chiodi o viti.

Calcolo del volume

Il calcolo del volume consiste semplicemente nel prendere le misure in pollici e usare la formula seguente: Altezza x Larghezza x Profondità diviso 1728 (piedi cubi). Vedere il blocco sottostante.

Volume della cassa	Altezza in pollici x Larghezza in pollici x Profondità in pollici
Diviso (piedi cubi)	1728

Se due lati hanno lunghezze diverse, sommare i due valori e dividere per due per ottenere il valore medio. Il numero così ottenuto fornirà il volume senza



doverlo calcolare dividendo la cassa in sezioni e quindi sommando assieme i volumi delle diverse sezioni. Lo spessore del materiale di diaframma riduce il volume interno e quindi lo si dovrà sottrarre alle dimensioni esterne per calcolare il volume. Anche l'altoparlante vero e proprio riduce il volume interno. Il volume d'aria occupato da ciascun modello è indicato nel foglio dei dati tecnici e dovrà essere sottratto dal volume lordo calcolato.

Cassa a chiusura ermetica

NOTA: Vb è il volume interno prima dell'aggiunta di qualsiasi spostamento dell'altoparlante e/o dell'apertura. Tutte le dimensioni esterne si basano sull'uso di materiali da 3/4 di pollice (19 mm).

NOTA: Se si usano casse diverse da quelle consigliate chiamare il Supporto tecnico per l'applicazione corretta.

Consiglio per un'ottima cassa a chiusura ermetica

Casse a chiusura ermetica	8 pollici	10 pollici	12 pollici
Totale volume interno piedi cubi (litri)	0,55 (15,62)	1,1 (31,15)	1,65 (46,72)
Spostamento woofer piedi cubi (litri)	0,05 (1,41)	0,1 (2,83)	0,12 (3,4)
V _b - volume interno netto piedi cubi (litri)	0,50 (14,2)	1,0 (28,32)	1,53 (43,32)
F ₃ - 3 dB punto (Hz)	47,7	58,4	43,1
Qtc - Smorzamento della cassa	1,19	0,66	0,88
A - Altezza - pollici (cm)	12 (30,48)	14,0 (35,56)	15,0 (38,1)
L - Larghezza - pollici (cm)	12 (30,48)	16,0 (40,64)	16,0 (40,64)
P - Profondità - pollici (cm)	10 (25,4)	13,25 (33,66)	15,0 (38,1)

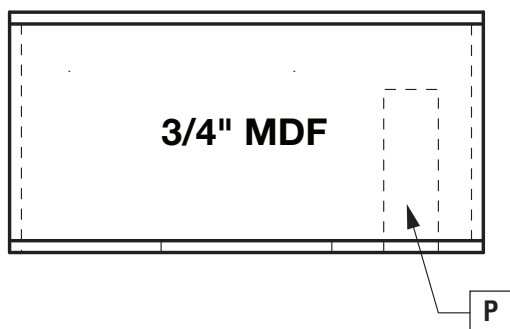
Gamma del volume consigliato per la cassa a chiusura ermetica

Casse a chiusura ermetica	8 pollici	10 pollici	12 pollici
V_b - Gamma del volume piedi cubi (litri)	0,4 - 0,75 (11,34 - 21,24)	0,75 - 1,25 (21,24 - 35,4)	1,25 - 1,75 (35,4 - 49,55)

Casse con sfiato

NOTA: V_b è il volume interno prima dell'aggiunta di qualsiasi spostamento dell'altoparlante e/o dell'apertura. Tutte le dimensioni esterne si basano sull'uso di materiali da 3/4 di pollice (19 mm).

NOTA: Se si usano casse diverse da quelle consigliate chiamare il Supporto tecnico per l'applicazione corretta.

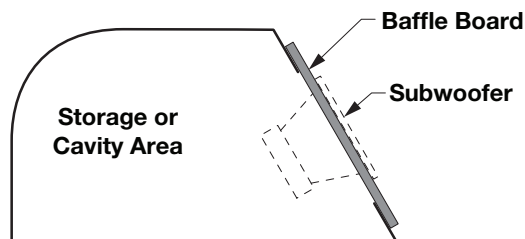


Dimensioni ottimali della cassa con sfiato (forata)

Casse con sfiato	8 pollici	10 pollici	12 pollici
Totale volume interno piedi cubi (litri)	1,10 (31,15)	1,45 (41,06)	2,45 (69,38)
Spostamento woofer piedi cubi (litri)	0,05 (1,41)	0,1 (2,83)	0,12 (3,4)
Spostamento apertura piedi cubi (litri)	0,03 (0,85)	0,1 (2,83)	0,33 (9,35)
V_b - volume interno netto piedi cubi (litri)	1,0 (28,3)	1,25 (35,4)	2,0 (56,63)
F_b - frequenza di accordo (Hz)	45	40	35
F_3 - 3 dB punto (Hz)	34,7	39	36
A - Altezza - pollici (cm)	12 (30,48)	15,0 (38,1)	16,0 (40,64)
L - Larghezza - pollici (cm)	16 (40,64)	15,0 (38,1)	20,0 (50,8)
P - Profondità - pollici (cm)	14 (35,56)	15,25 (38,74)	17,5 (44,45)
A - Apertura diametro e lunghezza - pollici (cm)	3 x 9,4 (7,62 x 23,9)	3 x 9,5 (7,62 x 24,13)	4 x 14 (10,16 x 35,56)

NOTA: L'apertura visualizzata può essere posta su qualsiasi superficie della cassa affinché non vi sia nessuna ostruzione dell'estremità dell'apertura.

NOTA: Se si usano casse con sfiato assicurarsi per la massima affidabilità e gestione di potenza che si usi un filtro subsonico o "infrasonico" di modo che solo il segnale di bassa frequenza utilizzabile sia inviato al subwoofer.



Il design della cassa con baffle infinito è un'applicazione in cui la compliance del volume d'aria nella cassa è maggiore rispetto alla compliance sulla sospensione della cassa (V_{as}). Per una prestazione affidabile è necessario un filtro infrasonico.

Baffle infinito	8 pollici	10 pollici	12 pollici
F_3 - 3 dB punto (Hz)	42,7	69,4	43,3
V_{as} - piedi cubi (litri)	0,63 (17,9)	1,77 (50,2)	3,80 (107,7)
Q_{tc} - Smorzamento della cassa	0,66	0,43	0,54

IMPORTANTE: E' necessario un filtro subsonico o "infrasonico" alla o sopra la frequenza di risonanza (F_s) della cassa.

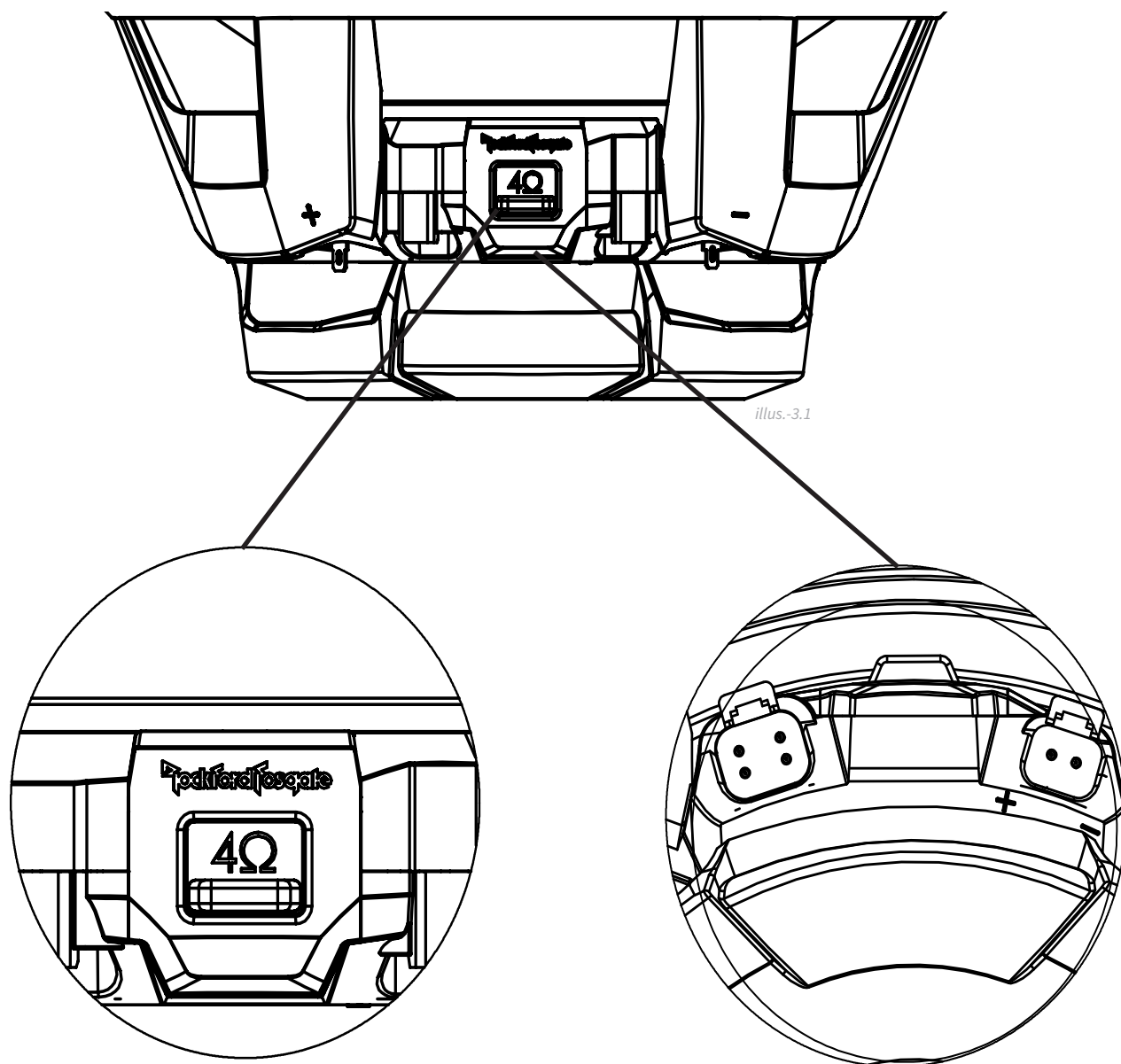
NOTA: Le installazioni con baffle infinito producono una gestione di potenza della cassa più bassa rispetto alle applicazioni completamente chiuse come le casse a chiusura ermetica o con sfiato.

Configurazioni del cablaggio

Variando la configurazione del cablaggio delle casse si può creare un carico d'impedenza accoppiato a quello del sistema. La modifica della configurazione del cablaggio produce una gamma di scelte di carico d'impedenza. Le configurazioni del cablaggio in serie, in parallelo o in serie-parallelo rappresentano diverse tecniche di collegamento dei fili che producono carichi diversi. La configurazione in serie rappresenta un metodo di collegamento in cui gli altoparlanti sono collegati uno dopo l'altro. La configurazione in parallelo utilizza due o più altoparlanti collegati con terminali comuni. La configurazione in serie-parallelo unisce le due tecniche. Scegliere lo schema di cablaggio che corrisponde al proprio numero di woofer e all'impedenza dell'amplificatore.

Crossover dei subwoofer

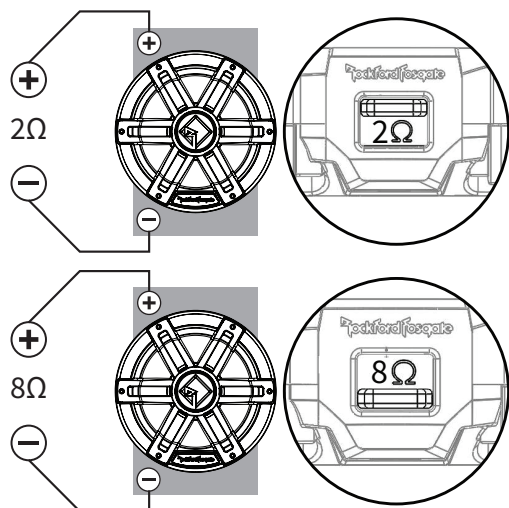
Ci sono due tipi di crossover, passivo e attivo. I crossover passivi (bobine o induttori) sono posti sui fili dell'altoparlante tra il diffusore e l'altoparlante. Il crossover attivo è un filtro elettronico che separa il segnale audio inviato a diversi amplificatori. Per ottimizzare le prestazioni dei subwoofer, si consiglia di usare un crossover attivo passa-basso da 80-100 Hz a 12 dB/ottava.



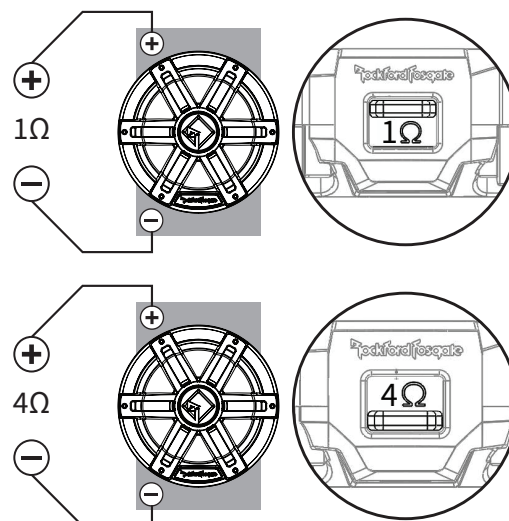
**INTERRUTTORE TERMINALE
DELL'ALTOPARLANTE**

**ALTOPARLANTE E TERMINALI
COLOR OPTIX™**

Opzioni impedenza D4

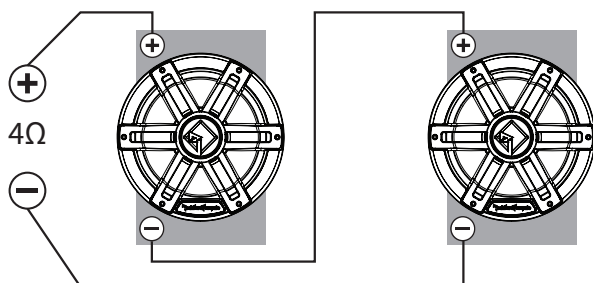


Opzioni impedenza D2

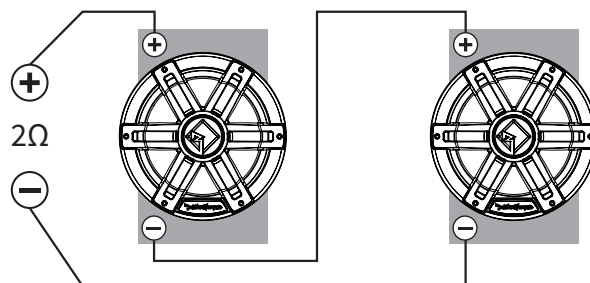


Opzioni di cablaggio in serie del woofer

D4 con interruttore su 2Ω

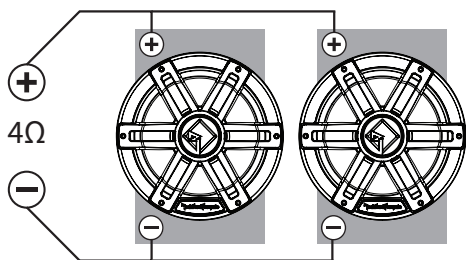


D2 con interruttore su 1Ω

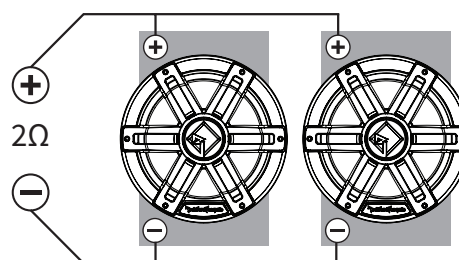


Opzioni di cablaggio in parallelo del woofer

D4 con interruttore su 8Ω

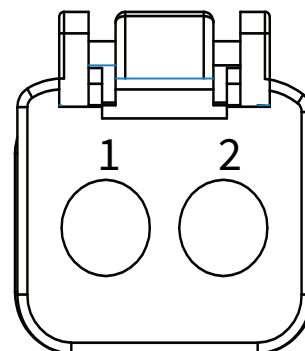


D2 con interruttore su 4Ω



Cablaggio ALTOPARLANTI

Esistono (2) opzioni diverse per il cablaggio degli altoparlanti. Usare i connettori a forcella (inclusi) come da illustrazione 3.1. E' anche possibile usare l'ingresso del connettore DEUTSCH™/stile Amphenol (non incluso) vicino al connettore COLOR OPTIX™.



illus.-4.3

Pin-out Altoparlante (lato fili)

1 - ROSSO - Ingresso positivo altoparlante

2 - NERO - Ingresso negativo altoparlante

NON incluso con gli altoparlanti

Il connettore è DEUTSCH™stile /Amphenol DT06-2S

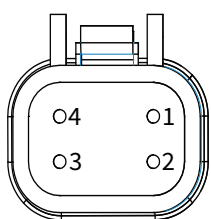
Cablaggio COLOR OPTIX™

Se non si usa PMX-RGB, seguire i diagrammi sotto per i giusti pin-out e le istruzioni di cablaggio.

Precauzioni Cablaggio COLOR OPTIX™

- Non collegare a sistemi elettrici a 24 Volt
- Consigliamo di usare solo la tabella di cablaggio COLOR OPTIX™ o di collegare PMX-RGB. Qualsiasi altro tipo di collegamento potrà danneggiare gli altoparlanti o il dispositivo che avete collegato.
- Consigliamo di installare un fusibile (non incluso) sul cavo giallo da 12 Volt quando NON si usa il PMX-COLOR OPTIX™. Vedi la tabella di cablaggio COLOR OPTIX™ per le opzioni di cablaggio.
- Rockford consiglia un filo di minimo 20 gauge per il cablaggio degli altoparlanti COLOR OPTIX™.
- Mai cablare le luci COLOR OPTIX™ direttamente in 12 Volt. Usare PMX-RGB o un interruttore (non incluso) collegato a un'alimentazione munita di fusibile a 12 Volt. Fare riferimento ai dati tecnici per determinare le dimensioni del fusibile (non incluso).

Pin-out COLOR OPTIX™ (lato fili)



illus.-4.1

1 - Giallo (12 V + ingresso)

2 - Verde (ingresso messa a terra)

3 - Blu (ingresso messa a terra)

4 - ROSSO (ingresso messa a terra)

Incluso con gli altoparlanti

Il connettore è DEUTSCH™stile /Amphenol DT06-4S

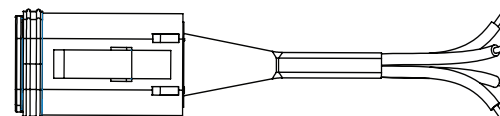
OPZIONI CABLAGGIO COLOR OPTIX™

COLORE USCITA LED	COLLEGARE QUESTO FILO COLORATO ALLA MESSA A TERRA
ROSSO	ROSSO
VERDE	VERDE
BLU	BLU
GIALLO	ROSSO E VERDE
ROSA	ROSSO E BLU
COLORE ACQUA	VERDE E BLU
BIANCO	ROSSO, VERDE E BLU

Collegare i fili colorati sulla destra per produrre il colore di uscita sulla sinistra.

Collegare tutti i fili gialli insieme alla fonte commutata a 12 Volt. Vedi Precauzioni cablaggio.

Connettore COLOR OPTIX™



incluso

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 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.