

REFERENCE

RWM252 / RWM254 / RWM302 / RWM304

Thank you for choosing the MB Quart REFERENCE subwoofer for your car audio sound system. With proper installation, you are on the path to experiencing your music in a way you only imagined possible. Here at MB Quart, we call this "Sound In Every Detail."

The REFERENCE series subwoofers have been designed for the enthusiast looking for accurate bass and solid reliability in their woofer. The REFERENCE series subwoofers feature the following:

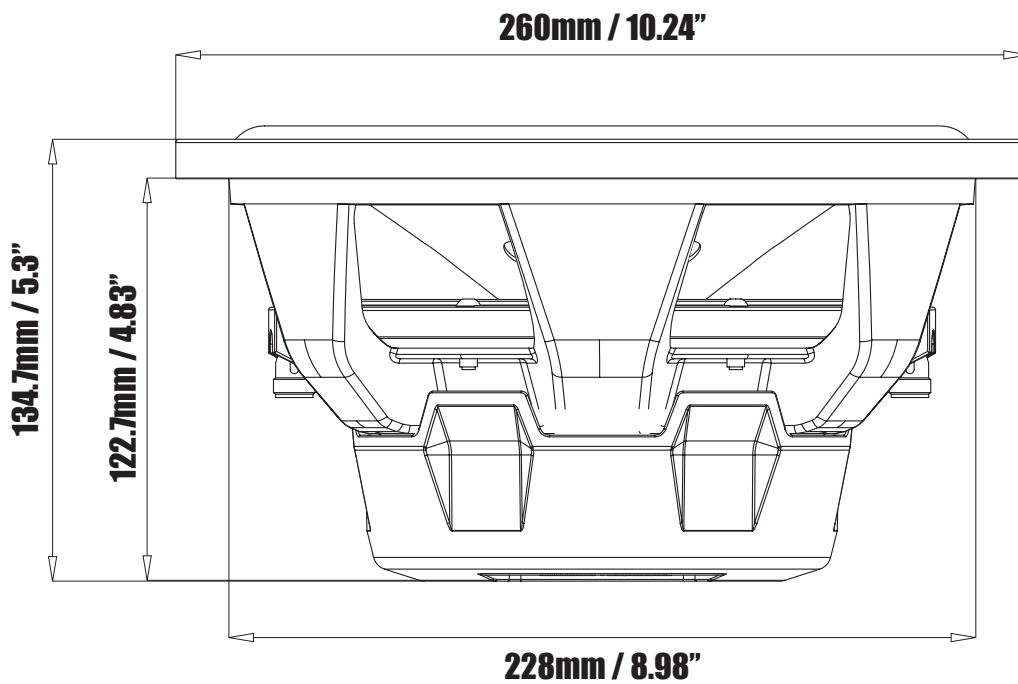
- Injection Molded Polypropylene Cone
- UV Resistant Butyl Rubber Surround
- 2" High Temp Voice Coil
- Red Nomex Spider
- Push & Insert Style Speaker Terminals
- Deep Drawn Stamp Steel Basket
- Heat-Dispersing Vented Pole Plate
- Anti-Resonant Magnet Cover



RWM252 / RWM254 / RWM302 / RWM304

Index

RWM252 - Technical Data	2
RWM254 - Technical Data	3
RWM302 - Technical Data	4
RWM304 - Technical Data	5
WIRING DIAGRAMS - DVC 2-Ohm Models	6
WIRING DIAGRAMS - DVC 4-Ohm Models	7
THIELE SMALL PARAMETERS & BOX DESIGNS	8
SUBWOOFER INSTALLATION DIRECTIONS	9
GLOSSARY OF TERMS	10



TECHNICAL DATA

Power Rating: 350-700 W
 Impedance: DVC 2 ohms
 Sensitivity: 83.3 dB (1W/1m)
 Frequency Response: 30-250 Hz

COMPRISING:

1 woofer 25.4 cm / 10"

DATOS TÉCNICOS

Carga admisible: 350-700 W
 Impedancia: DVC 2 ohmios
 Potencia de servicio: 83.3 dB (1W/1m)
 Campo de transmisión: 30-250 Hz

EQUIPAMIENTO:

1 woofer 25.4 cm / 10"

TECHNISCHE DATEN

Belastbarkeit: 350-700 W
 Impedanz: DVC 2 ohms
 Empfindlichkeit: 83.3 dB (1W/1m)
 Übertragungsbereich: 30-250 Hz

BESTÜCKUNG:

1 woofer 25.4 cm / 10"

DATI TECNICI

Potenza: 350-700 W
 Impedenza: DVC 2 ohmios
 Sensibilità: 83.3 dB (1W/1m)
 Risposta in frequenza: 30-250 Hz

DOTAZIONE:

1 woofer 25.4 cm / 10"

CARACTÉRISTIQUES TECHNIQUES

Puissance: 350-700 W
 Impédance: DVC 2 ohmios
 Rendement: 83.3 dB (1W/1m)
 Bande passante: 30-250 Hz

EQUIPEMENT:

1 woofer 25.4 cm / 10"

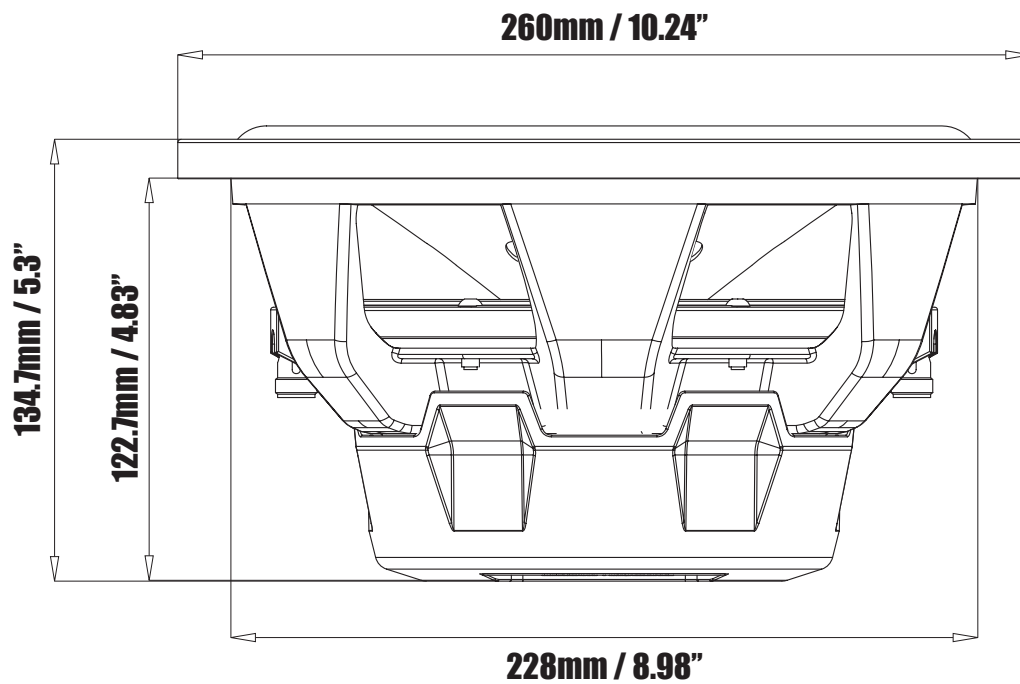
Технические Данные

Нагрузочная способность: 350-700Вт
 Импеданс: DVC 2 ом
 Рабочая мощность: 83.3 дБ (1Вт/1м)
 Диапазон передачи: 30-250 Гц

Оснащение:

1 woofer 25.4 cm / 10"

Subject to technical changes · Technische Änderungen vorbehalten · Sous réserve de modifications techniques · Ci si riservano modifiche tecniche
 Reservados los cambios técnicos · Производитель оставит за собой право на технические изменения



TECHNICAL DATA

Power Rating: 350-700 W
 Impedance: DVC 4 ohms
 Sensitivity: 83.1 dB (1W/1m)
 Frequency Response: 30-250 Hz

COMPRISING:

1 woofer 25.4 cm / 10"

DATOS TÉCNICOS

Carga admisible: 350-700 W
 Impedancia: DVC 4 ohmios
 Potencia de servicio: 83.1 dB (1W/1m)
 Campo de transmisión: 30-250 Hz

EQUIPAMIENTO:

1 woofer 25.4 cm / 10"

TECHNISCHE DATEN

Belastbarkeit: 350-700 W
 Impedanz: DVC 4 ohms
 Empfindlichkeit: 83.1 dB (1W/1m)
 Übertragungsbereich: 30-250 Hz

BESTÜCKUNG:

1 woofer 25.4 cm / 10"

DATI TECNICI

Potenza: 350-700 W
 Impedenza: DVC 4 ohmios
 Sensibilità: 83.1 dB (1W/1m)
 Risposta in frequenza: 30-250 Hz

DOTAZIONE:

1 woofer 25.4 cm / 10"

CARACTÉRISTIQUES TECHNIQUES

Puissance: 350-700 W
 Impédance: DVC 4 ohmios
 Rendement: 83.1 dB (1W/1m)
 Bande passante: 30-250 Hz

EQUIPEMENT:

1 woofer 25.4 cm / 10"

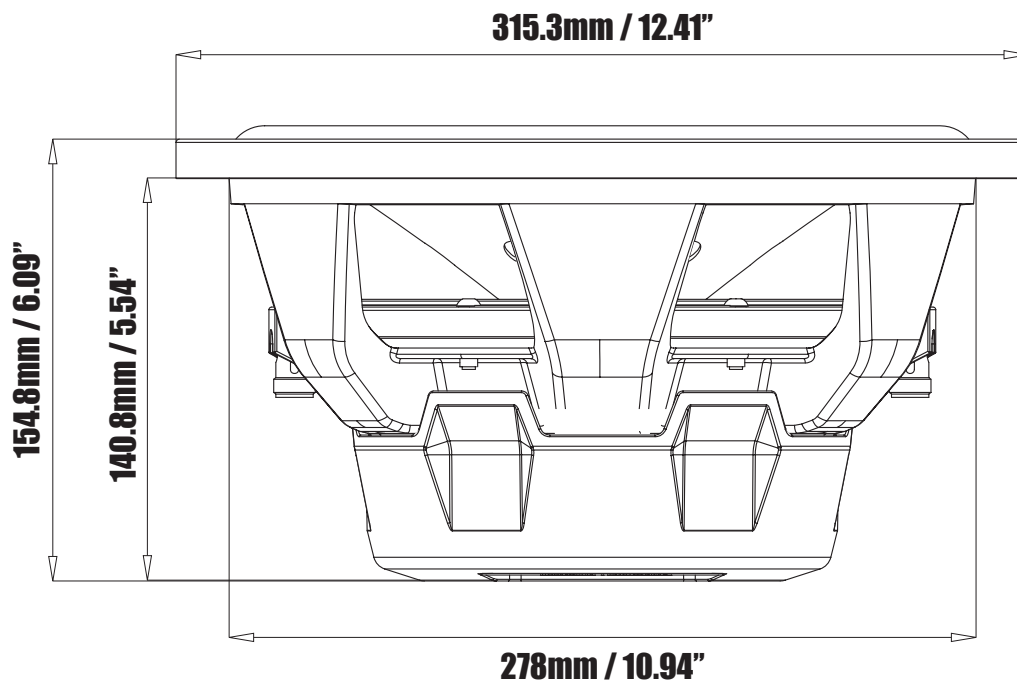
Технические Данные

Нагрузочная способность: 350-700Вт
 Импеданс: DVC 4 ом
 Рабочая мощность: 83.1 дБ (1Вт/1м)
 Диапазон передачи: 30-250 Гц

Оснащение:

1 woofer 25.4 cm / 10"

Subject to technical changes · Technische Änderungen vorbehalten · Sous réserve de modifications techniques · Ci si riservano modifiche tecniche
 Reservados los cambios técnicos · Производитель оставит за собой право на технические изменения



TECHNICAL DATA

Power Rating: 350-700 W
 Impedance: DVC 2 ohms
 Sensitivity: 84.5 dB (1W/1m)
 Frequency Response: 30-250 Hz

COMPRISING:

1 woofer 30.48 cm / 12"

DATOS TÉCNICOS

Carga admisible: 350-700 W
 Impedancia: DVC 2 ohmios
 Potencia de servicio: 84.5 dB (1W/1m)
 Campo de transmisión: 30-250 Hz

EQUIPAMIENTO:

1 woofer 30.48 cm / 12"

TECHNISCHE DATEN

Belastbarkeit: 350-700 W
 Impedanz: DVC 2 ohms
 Empfindlichkeit: 84.5 dB (1W/1m)
 Übertragungsbereich: 30-250 Hz

BESTÜCKUNG:

1 woofer 30.48 cm / 12"

DATI TECNICI

Potenza: 350-700 W
 Impedenza: DVC 2 ohmios
 Sensibilità: 84.5 dB (1W/1m)
 Risposta in frequenza: 30-250 Hz

DOTAZIONE:

1 woofer 30.48 cm / 12"

CARACTÉRISTIQUES TECHNIQUES

Puissance: 350-700 W
 Impédance: DVC 2 ohmios
 Rendement: 84.5 dB (1W/1m)
 Bande passante: 30-250 Hz

EQUIPEMENT:

1 woofer 30.48 cm / 12"

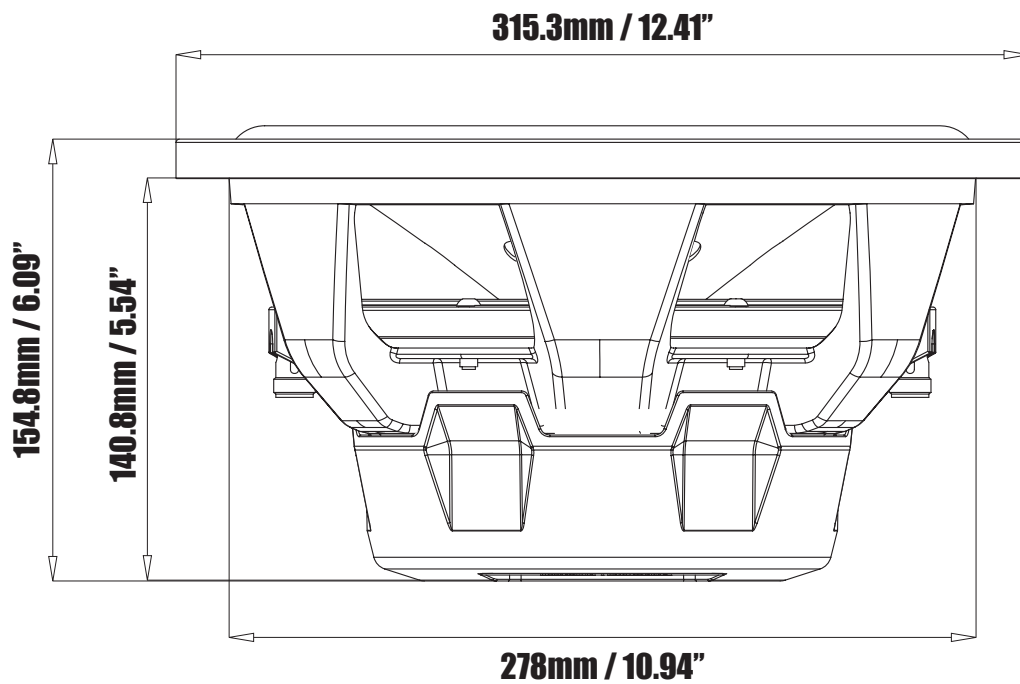
Технические Данные

Нагрузочная способность: 350-700Вт
 Импеданс: DVC 2 ом
 Рабочая мощность: 84.5 дБ (1Вт/1м)
 Диапазон передачи: 30-250 Гц

Оснащение:

1 woofer 30.48 cm / 12"

Subject to technical changes · Technische Änderungen vorbehalten · Sous réserve de modifications techniques · Ci si riservano modifiche tecniche
 Reservados los cambios técnicos · Производитель оставит за собой право на технические изменения



TECHNICAL DATA

Power Rating: 350-700 W
 Impedance: DVC 4 ohms
 Sensitivity: 83.7 dB (1W/1m)
 Frequency Response: 30-250 Hz

COMPRISING:

1 woofer 30.48 cm / 12"

DATOS TÉCNICOS

Carga admisible: 350-700 W
 Impedancia: DVC 4 ohmios
 Potencia de servicio: 83.7 dB (1W/1m)
 Campo de transmisión: 30-250 Hz

EQUIPAMIENTO:

1 woofer 30.48 cm / 12"

TECHNISCHE DATEN

Belastbarkeit: 350-700 W
 Impedanz: DVC 4 ohms
 Empfindlichkeit: 83.7 dB (1W/1m)
 Übertragungsbereich: 30-250 Hz

BESTÜCKUNG:

1 woofer 30.48 cm / 12"

DATI TECNICI

Potenza: 350-700 W
 Impedenza: DVC 4 ohmios
 Sensibilità: 83.7 dB (1W/1m)
 Risposta in frequenza: 30-250 Hz

DOTAZIONE:

1 woofer 30.48 cm / 12"

CARACTÉRISTIQUES TECHNIQUES

Puissance: 350-700 W
 Impédance: DVC 4 ohmios
 Rendement: 83.7 dB (1W/1m)
 Bande passante: 30-250 Hz

EQUIPEMENT:

1 woofer 30.48 cm / 12"

Технические Данные

Нагрузочная способность: 350-700Вт
 Импеданс: DVC 4 ом
 Рабочая мощность: 83.7 дБ (1Вт/1м)
 Диапазон передачи: 30-250 Гц

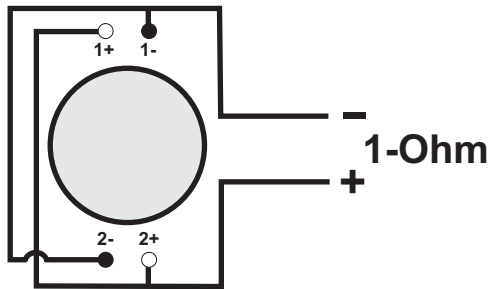
Оснащение:

1 woofer 30.48 cm / 12"

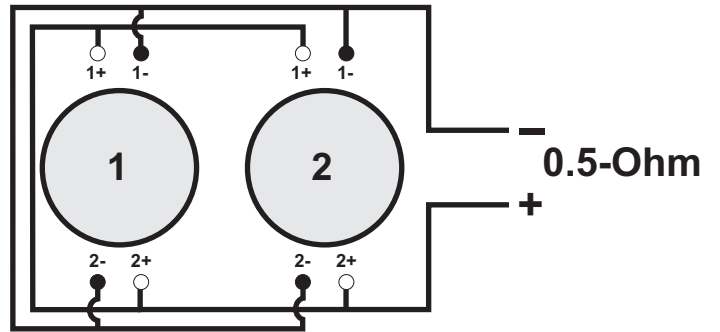
Subject to technical changes · Technische Änderungen vorbehalten · Sous réserve de modifications techniques · Ci si riservano modifiche tecniche
 Reservados los cambios técnicos · Производитель оставит за собой право на технические изменения

DVC 2-Ohm Coil Wiring

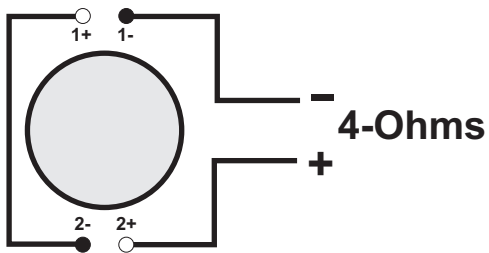
PARALLEL COILS



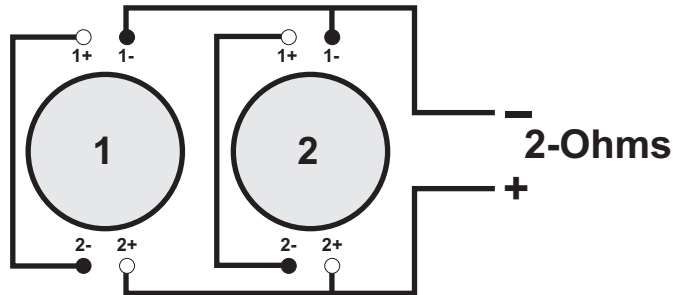
PARALLEL COILS / PARALLEL SUBS



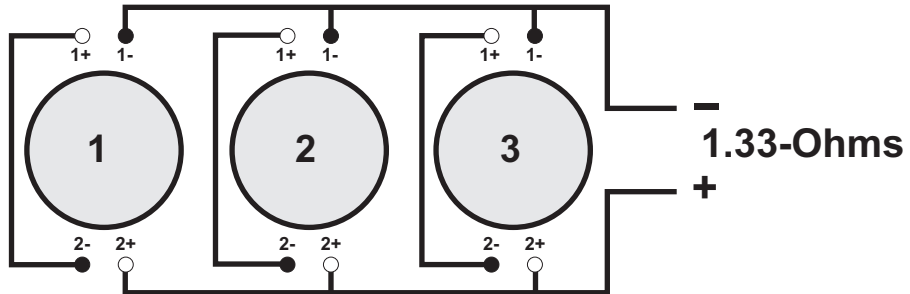
SERIES COILS



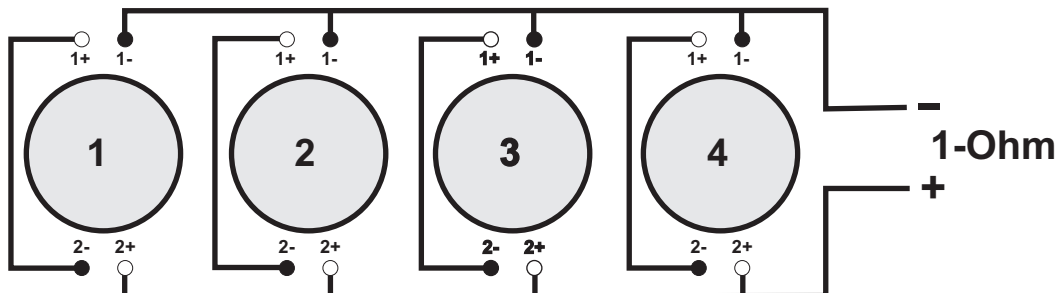
SERIES COILS / PARALLEL SUBS



SERIES COILS / PARALLEL SUBS

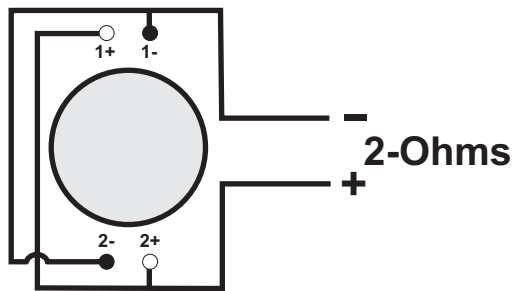


SERIES COILS / PARALLEL SUBS

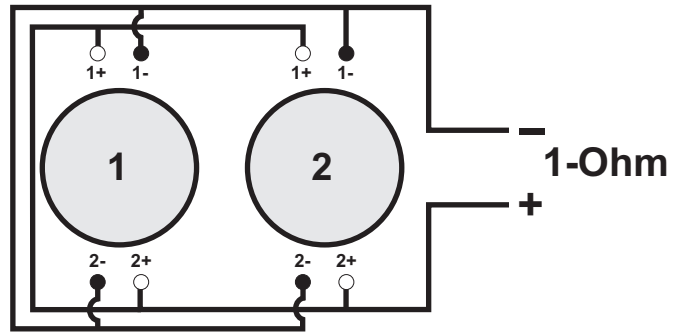


DVC 4-Ohm Coil Wiring

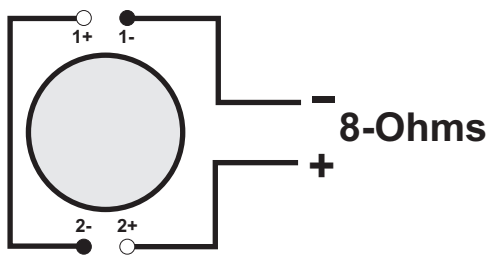
PARALLEL COILS



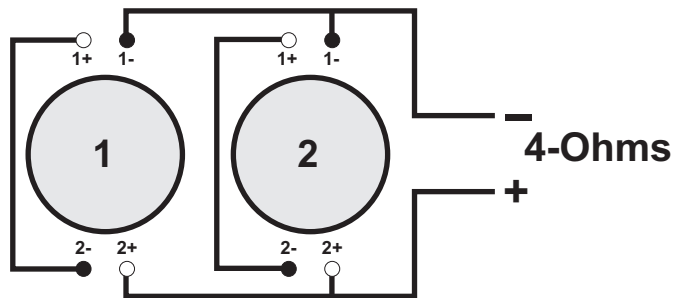
PARALLEL COILS / PARALLEL SUBS



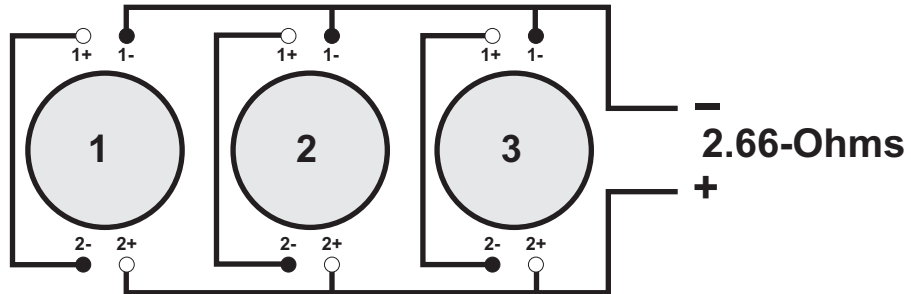
SERIES COILS



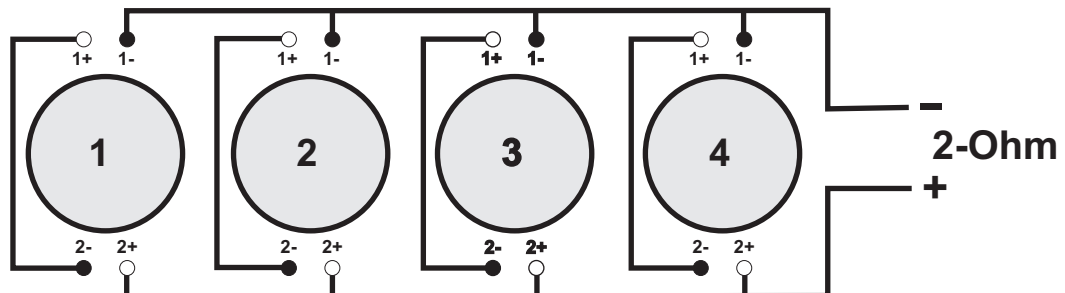
SERIES COILS / PARALLEL SUBS



SERIES COILS / PARALLEL SUBS



SERIES COILS / PARALLEL SUBS



REFERENCE SERIES SUBWOOFERS

ELECTRICAL	RWM252	RWM254	RWM302	RWM304	
WIRING	Series	Series	Series	Series	
NomZ	4.344	8.7	4.344	8.784	Ohm
Sd	0.034	0.034	0.0511	0.0511	sqM
Revc	3.62	7.25	3.62	7.32	Ohm
BL	11.07	14.25	11.32	14.62	TxM
Vas	35.38	38.39	63.35	70.97	Liters
Cms	215.8	234.2	171	191.6	uM/N
Mms	127.9	118.5	170.2	170	Grams
Fo	30.38	30.26	29.53	27.94	Hz
Qms	3.474	3.29	2.858	3.25	
Qes	0.722	0.8	0.892	1.02	
Qts	0.596	0.64	0.68	0.78	
no	0.132	0.128	0.176	0.146	%
SPL@1W	83.3	83.1	84.5	83.68	dB
SPL@2.83W	86.81	83.65	88.05	84.19	dB
Xmax/Over Hang	9.5	9.5	9.5	9.5	mm
Xmech/Suspension	14.25	14.25	15	15	mm
RMS	350	350	350	350	Watts
PEAK	700	700	700	700	Watts

CLOSED BOX DESIGNS (SEALED)

Standard Tight Bass-Small Box

Box Volume	0.7	0.7	1.15	1.15	Cubic Feet
Qtc	0.969	1.064	1.13	1.334	
F3	41	40	38	36	Hz

VENTED BOX DESIGNS (ROUND PORT)

Standard Tight Bass-Small Box

Box Volume	1	1	1.5	1.5	Cubic Feet
Fb	45	45	45	45	Hz
Round Port Size	3	3	4	4	Inches
Port Length	8	8	9.5	9.5	Inches
F3	37	37	37	37	Hz

Optimal Sound Quality-Flat Response

Box Volume	1.5	1.5	2.25	2.25	Cubic Feet
Fb	44	44	44	44	Hz
Slot Port Size (Inches)	10 x 1.5	10 x 1.5	12.5 x 2	12.5 x 2	Inches
Port Length (Inches)	17.5	17.5	19.5	19.5	Inches
F3	35	35	35	35	Hz

FEATURES ARE SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: All above box volumes are internal values and already include subwoofer and port displacement.

Volume listed represents the volume of an empty box using 3/4" MDF.

The F3 value represents the -3db cut off of the sub/enclosure combination in Hz.

SUBWOOFER INSTALLATION DIRECTIONS

Enclosure Materials

Typically, 5/8" or 3/4" MDF (Medium Density Fiber Board) is best for most applications. 3/4" MDF is recommended.

Enclosure Build Materials

Connecting joints need to be glued and screwed to ensure no air escapes and joints do not separate under high pressure. Mitered and rabbit joints also help to ensure the enclosure joints are secure.

Bracing

Internal bracing is also recommended to prevent flexing and to strengthen the enclosure.

Note: The volume taken up by the bracing should be added to the total enclosure interior volume.

There are two common bracing methods.

1. Corner Bracing: These help prevent the connection joints from separating under heavy vibration and air pressure.

Use 1" x 1" MDF at all interior joints

2. Diagonal Bracing: These internal braces connect the top side to the bottom side as well front side to back side. This prevents the wood from bowing or pushing outwards.

Use 1" x 2" with 1" surface contact that is glued and screwed.

Glossary of Terms

- Q** The energy losses of relative damping (ratio of stored to dissipated energy or ratio of reactive to resistive energy).
- F_s** Free air resonance of driver in Hz.
- Q_{ms}** Mechanical Q.
- V_{as}** Volume of air equivalent to driver from the rest position.
- C_{ms}** Mechanical compliance of a loud speaker piston.
- M_{ms}** Moving mass of total loud speaker piston assembly.
- X_{max}** The maximum linear excursion of a loud speaker.
- S_d** Surface area of the cone.
- D_{ia}** The piston diameter of a loud speaker.
- Q_{es}** Electrical Q of a system.
- R_e** DC resistance.
- L_e** VC inductance.
- P_e** Maximum input power.
- Q_{ts}** Total Q of the system.
- Sens** Sensitivity. An efficiency measurement in dB's.
- V_c** Volume of a closed or sealed enclosure
- V_b** Volume of a vented enclosure.
- F_c** The resonant frequency of a closed or sealed system
- F_b** The resonant frequency of a vented system
- F₃** The half-power (-3dB) frequency of a loud speaker enclosure
- Q_{tc}** The Q of a loud speaker at F_c in a closed box, considering both it's electrical and mechanical resistance.
- Q_L** The Q of a vented box, resulting from all box losses.
- D_V** Diameter of vent.
- L_V** Length of vent.
- H** Height.
- W** Width.
- D** Depth

MBQUART

MAXXSONICS USA, INC
1290 Ensell Road
Lake Zurich, Illinois 60047 USA
E-Mail: info@maxxsonics.com
Website: www.maxxsonics.com
www.mbquart.com



Maxxsonics Limited Warranty

As the manufacturer of Maxxsonics, Autotek, Crunch, MB Quart and Hifonics car audio products, Maxxsonics USA Inc. Warrants to the original consumer purchaser the amplifier to be free from defects in material and workmanship for one (1) Year from date of purchase.

All other parts and accessories of the system are warranted to be free from defects in material and workmanship for one (1) year from date of purchase. Maxxsonics will repair or replace at it's option and free of charge during the warranty period, any system component that proves defective in materials and workmanship under normal installation, use and service provided that the product is returned to the authorized Maxxsonics dealer from where it was purchased. A photo copy of the original receipt must accompany the product being returned.

Valid purchase receipts will contain the name and address of the authorized reseller.

Any damage to the product as a result of misuse, abuse, accident, incorrect wiring, improper installation, alteration of date code or bar code labels, revolution, natural disaster, or any sneaky stuff because someone messed up, repair or alteration out side of our factory or authorized service centers and any thing else you have done that you should not have done is not covered.

This warranty is limited to defective parts and specifically excludes any incidental or consequential damages connected therewith. This warranty is not to be construed as an insurance policy.

Warranty on installation labor, removal, re-installation and freight charges are not the responsibility of Maxxsonics USA Inc.

Warranty products damaged as a result of insufficient or improper packing materials are not covered by this limited warranty and such damaged product will be returned "as is" at the expense of the owner.

RWM252 / RWM254 / RWM302 / RWM304