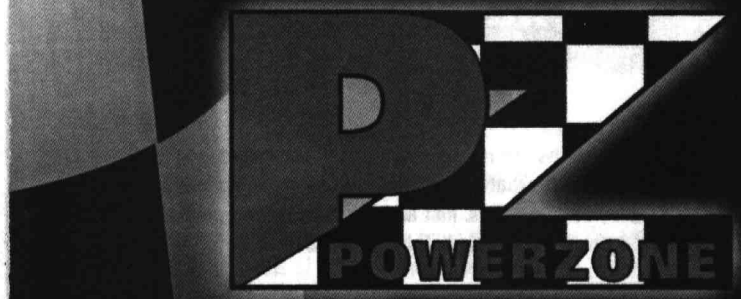
crunch
USA



NOXX SERIES

SUBWOOFER

PZN12 / PZN12SQ Subwoofer
Owners / Installation Manual

This manual has been prepared to help you make a decision on the woofer enclosure, and desired tuning for a particular application. As you can see on the following pages, there are many possible variations of woofers, and enclosure sizes that may be used to achieve a specific performance.
Considering all space, and power handling limitations, choose the woofer and enclosure size that will give you the desired performance for your application. All measurements used to calculate the volume are Internal Measurements. Always allow for the thickness of the wood.

Formula for Volume:

Volume for cu. Ft.=H (in) X W (in) X D (in) ÷1728
(Divide by 1,728 to convert to cubic feet)

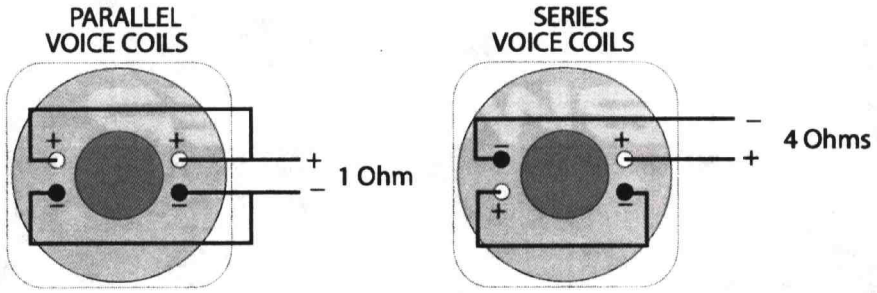
Wiring:

Wiring (Series or Parallel). The wiring of two or more drivers can effect impedance for the entire system. Care must be taken to insure that the resulting impedance does not exceed the amplifiers requirements. When wiring in series, just add the impedance together. (Fig. A) When wiring in parallel, things get more complicated. The formula is:

1 divided by 1/R1 + 1/R2 + 1/R3 + 1R4 =Total Impedance, where R = impedance of each individual speaker. (Fig B)

The PZN12 and PZN12SQ are 2 Ohm Dual Voice Coil (DVC). These woofers can be wired for 4 Ohms or 1 Ohm configurations shown below.

DVC PARALLEL & SERIES WIRING FOR PZN12 & PZN12SQ



Cabinet Material:

Generally 5/8" to 3/4" material should be used on all enclosures. The following is a list of commonly used construction materials.

- Medium Density FiberBoard: The best overall material for speaker cabinets, MDF is extremely rigid, and is able to withstand high-pressure levels.
- Birch, Oak, and most hard woods: these are also very rigid; however, they are usually very expensive.
- Standard grade plywood & underlayment particleboard: Both are commonly used; however, they are not well suited for the car audio environment.

Bracing:

Internal bracing is encouraged to prevent flexing, and to strengthen the cabinet.

NOTE: Volume taken up by the bracing must be added to the total enclosure volume. There are three main types of bracing, they are:

- Corner Bracing: Corner bracing helps to strengthen the cabinet and prevents splitting of particleboard caused by screws going into the panel edge. 1" X 1" at all corner joints, glued and screwed.

- Diagonal Bracing: Diagonal bracing on all panels, prevents panel flexing under high sound pressure conditions. Remember that any flexing panels will produce unwanted sound vibrations, which can lead to a "muddy sound". 1" X 2", with 1" surfaced glued and screwed to the panel.

- Cross Bracing: Cross braces used between opposite panels will tie them together as one structure, again helping to prevent panel flexing. Diagonal braces will provide convenient anchoring points for cross braces 1" X 1" glued and screwed.

Damping:

All inside surfaces should be lined with 1/2" thick Dacron for fiber fill for sound damping. Be sure to attach the insulation firmly to prevent interference with woofer(s) and or port(s).

CRUNCH POWERZONE SERIES SUBWOOFER SPECIFICATIONS

	PZN12	PZN12SQ
Re	3.4 ohms	3.4 ohms
Le	1.47 mH	1.4 mH
Qm	4.72	3.07
Qe	0.57	0.52
Qts	0.51	0.44
BL	11.5	13.8
Mms	115.3 g / 4.07 oz	237 g / 8.36 oz
Cms	0.24 mm/n	0.28 mm/n
Rms	4.7 kg/s	9.5 kg/s
Vas	84.6L / 2.98 cu.ft.	6.21 cu. ft.
SPL	88.1 dB	87 dB
Fms	30.6 Hz	19.7 Hz
Linear Xmax	0.22" / 5.5 mm	.22" / 5.5 mm
RMS power	200 watts	200 watts

PZN12	BOX TYPE		
	Small Ported	Large Ported	Sealed
Volume			
Litres	57	85	49.5
Cubic Feet	2	3	1.75
Tuning Freq.	fb: 36 Hz	fb: 32 Hz	fb: 50 Hz
Port Diameter	4"	4"	
Port Length	10"	8"	
# of Ports	1	1	

PZN12SQ	BOX TYPE		
	Small Ported	Large Ported	Sealed
Volume			
Litres	80	120	65
Cubic Feet	2.3	4.25	2.3
Tuning Freq.	fb: 30 Hz	fb: 25 Hz	fb: 38 Hz
Port Diameter	4"	4"	
Port Length	10"	10"	
# of Ports	1	1	

Troubleshooting:

Basic Problem	Possible Solution
No Sound from Speaker	Confirm power is on from all components.
Very Low Sound	Adjust fader control. Check connection cables equipment. Etc...
Unnatural Bass Emphasis	Adjust loudness contour. Crossover points, bass control, etc...
Whining Sound Check	Clean and tighten power/ground connections. all cables and contacts. Check all grounding points.
Distortion at Very High Listening Levels	Check gain control Check amplifier input or output controls.
No High Frequency Output	Check passive crossover/active crossover. Check all cables and connections.

Glossary of Terms

Q	The system losses of relative damping (ratio of stored to dissipated energy or ratio of reative to resistive energy.
Fs	Free air resonance of drive in Hz.
Qms	Mechanical Q of system.
Vas	Volume of air equivalent to drive from rest position.
Cms	Mechanical compliance of a loudspeaker piston.
Mms	Moving mass of total assembly.
Xms	The maximum linear excursion of a loudspeaker piston.
Sd	Surface area of cone.
Dia	The piston diameter of a loudspeaker.
Qes	Electrical Q of system.
Re	DC resistance.
Le	VC inductance.
Pe	Maximum input power.
Qts	Total Q of system.
Sens	Sensitivity.
Vc	Volume of a closed enclosure.
Vb	Volume of a vented enclosure.
Fc	The resonant frequency of a closed box system.
Fb	The resonant frequency of a vented box system.
F3	The half-power (3dB) frequency of a loudspeaker enclosure design.
Qtc	The Q of a loudspeaker at Fc in a closed box, considering both its electrical and mechanical resistance.
QL	The Q of a vented box, resulting from all box losses.
Fill	The acoustic absorption added inside a box to suppress unwanted resonance.
Ports	Number of ports.
DV	Diameter of vent.
LV	Length of vent.
H	Height
W	Width
D	Depth

Maxxsonics Limited Warranty

As the manufacturer of Maxxsonics, Crunch and Hifonics car audio products, Maxxsonics USA Inc. warrants to the original consumer purchaser the speakers and subwoofers to be free from defects in material and workmanship for one (1) year from date of purchase.

To ensure your warranty policy, you must retain your original sales receipt and complete the on-line warranty registration form at maxxsonics.com within ten (10) days of purchase.

All other parts and accessories of the system are warrantied to be free from defects in materials and workmanship for for one (1) year from date of purchase. Maxxsonics will repair or replace at its 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 and a copy of the on-line registration confirmation must accompany the product being returned. In the absence of the above, the warranty is one year from date of manufacture.

Any damage to the product as a result of misuse including blown voice coils, abuse, accident, incorrect wiring, improper installation, alteration of date code, alteration of bar code, revolution, natural disaster, unnatural disaster or any sneaky stuff because someone messed up, repair or alteration outside of our authorized service centers and anything else you may 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.