



# PEN-12W

Subwoofers do not need to have monster magnets to work properly. These all-new drivers are great for the modest powered system and yield great sound quality and much lower bass. PEN-12W features a pressed paper cone & molded Polypropylene dust cap. The Butyl Rubber surround adds great performance and durability. A Single 4-ohm voice coil is wound on an ASV former for versatility and strength. Check out the new entry level drivers and see for yourself that low cost subs do not have to sacrifice performance!

## PEN Features

Pressed Paper Cone  
Injection Molded Poly Dust Cap  
Butyl-Rubber Surround  
ASV Voice Coil

Vented Back Plate  
Poly Cotton Spider  
Quick Disconnect Wire Terminal  
Gloss Black Finish on Stamped Steel Basket

## Driver Specifications

T/S Spec	PEN-12W
Fs (Hz)	36
Qms	2.67
Vas (ft <sup>3</sup> )	2.3
Qes	3.13
Re (Ω)	3.9
Voice Coil (Ω)	SVC 4Ω
V.C. Diameter (in.)	2"
RMS Power	450
Max Power	800
Qts	1.44
1w/1m SPL (dB)	85
Overall Diameter	12.125"
Overall Height	5.375"
Mounting Depth	5"
Cutout Diameter	11.125"
Flange Width	.5"
Flange Height	.375"
Weight (lbs.)	6.7

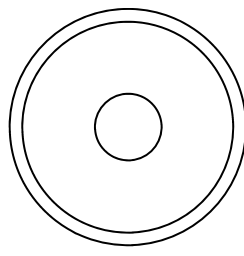
## Enclosure Recommendations

All enclosures should be made of .75" (3/4") material only. When possible, make the baffle 1.5" (1 1/2") thick and add .75" (3/4") to the depth of the enclosure to compensate. All volumes **INCLUDE** vent/port and subwoofer displacements. **DO NOT** change the volume unless you plan on adding a substantial amount of bracing. For added performance, applying a coat of fiberglass resin to the interior walls will greatly improve sealing the enclosure. Adding a thin layer of poly-fill will improve response by smoothing out reflections within the enclosure.

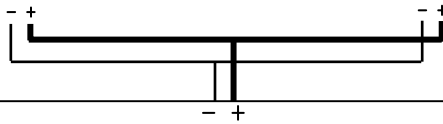
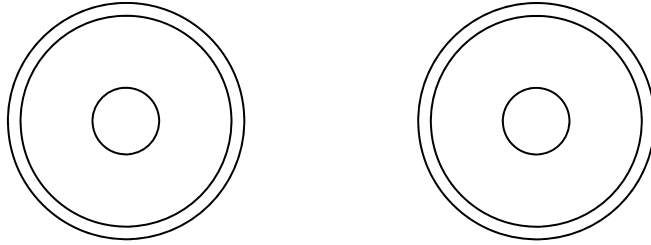
PEN-12W Ported		
Cubic Feet	Port Diameter	FB/F3 (Hz)
2.00	4" x 12.5"	35/31

PEN-12W Sealed	
Cubic Feet	Tuning (Hz)
1.25	36.0

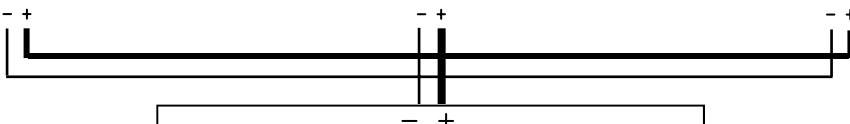
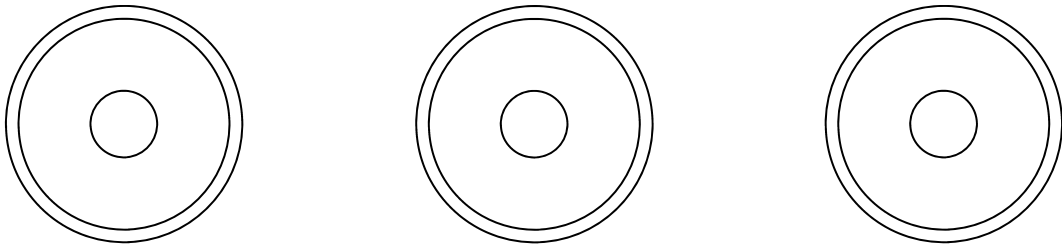
Turn over for woofer wiring diagrams...



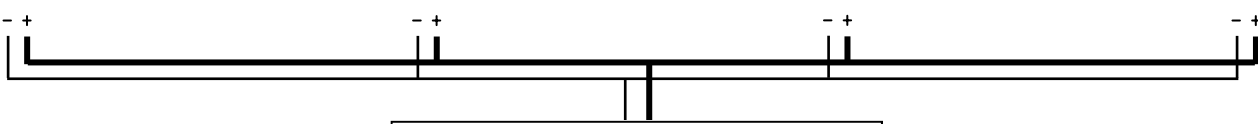
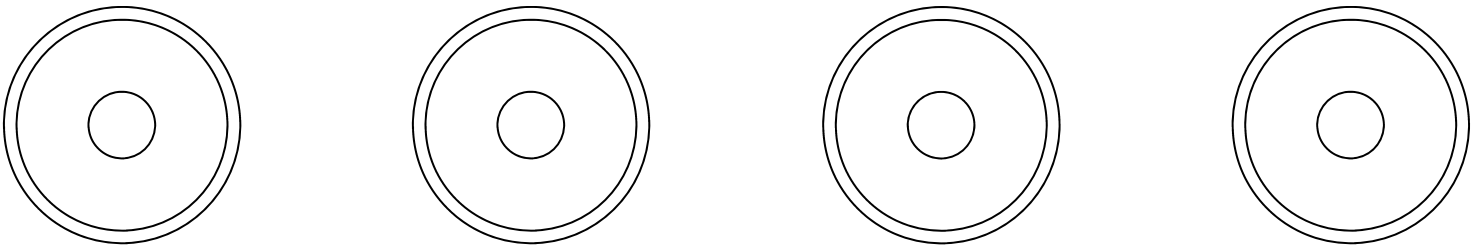
4  $\Omega$  to bridged 2 channel amplifier



2  $\Omega$  to a mono block amplifier, or 1 channel of a 2 channel amplifier



1.33  $\Omega$  to a mono block amplifier



1  $\Omega$  to a mono block amplifier