

powerbass®



PBX1S-8D2
PBX1S-8D4
PBX1S-10D2
PBX1S-10D4
PBX1S-12D2
PBX1S-12D4

PBX1S
SLIM SUBWOOFER

PBX1S Slim Subwoofer Series

Application Guide



Thank you and Congratulations

Congratulations on your decision to purchase PowerBass "PBX1S" Series Slim Subwoofers. These top-of-the-line speakers are the result of years of extensive engineering and testing, resulting in the finest car audio subwoofers you can purchase today.

PBX1S

SLIM SUBWOOFER

At PowerBass USA, Inc. we are confident you will have many years of outstanding enjoyment from your investment. For maximum performance we recommend that you have your new PowerBass product installed by an Authorized PowerBass Dealer. Doing so will also automatically extend your warranty to a full THREE-YEAR Period.

To learn more about PowerBass, please visit us on the World Wide Web at
<http://www.powerbassusa.com>

Δ Warning Δ

Continuous exposure to sound pressure levels in excess of 100 dB can cause permanent hearing loss. PowerBass Speakers are capable of producing sound pressure levels well over 170 dB. Please observe all local sound ordinances while listening to your PowerBass system. PowerBass USA, Inc. accepts no liability for hearing loss, bodily injury, or property damage due to the result of use or misuse of this product.

POWERBASS PBX1S WOOFER FEATURES

Parabolic Santoprene Surround EPDM Rubber mixed with Polypropylene ensures cone linearity and control while maintaining durable form.

Poly/Mica Cone for strong and distortion free bass reproduction while still reproducing all the musical nuances.

Hybrid Progressive Spiders providing precise control of the piston at high volumes and still maintains the sonic details at lower volumes.

BASV Voice Coil Former extracts and dissipates harmful heat from the voice coil for better power handling.

Textured Non Resonate Basket textured and treated to ensure diffusion of resonate waves across the surface of the basket.

Sealed Enclosure Design maximizes low frequency response in a small space without giving up sound quality and performance.

Santoprene® is a registered trademark of ExxonMobil Chemical Co.

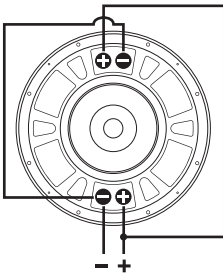
WIRING GUIDELINES

It is highly recommended that you seek an authorized PowerBass dealer to properly setup, wire and install your woofers for maximum performance.

There are multiple ways to wire your woofers depending on your amplifier and system configuration. The use of multiple voice coils offers you more versatility in system configuration. It is important to know the limits of your amplifier to optimize its performance. It is always better to use your subwoofer in a mono / bridged mode if your amplifier has the capabilities. There are basically four different types of wiring configurations: Series, Parallel, Series-Parallel or Parallel-Parallel. It is possible to change the impedance or load by how the speakers are to be wired and by the quantity of woofers used.

DUAL VOICE COIL WIRING

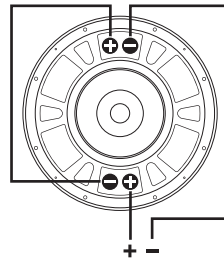
PARALLEL



AMPLIFIER

Parallel wiring a dual 4 ohm sub = 2 ohm
Parallel wiring a dual 2 ohm sub = 1 ohm

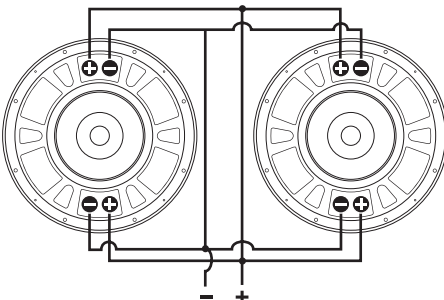
SERIES



AMPLIFIER

Series wiring a dual 4 ohm sub = 8 ohm
Series wiring a dual 2 ohm sub = 4 ohm

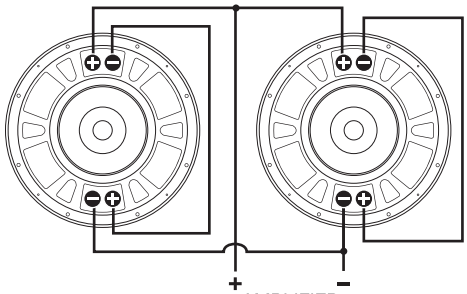
PARALLEL-PARALLEL



AMPLIFIER

Parallel-Parallel wiring two dual 4 ohm subs = 1 ohm
Parallel-Parallel wiring two dual 2 ohm subs = 0.5 ohm

SERIES PARALLEL



AMPLIFIER

Series-Parallel wiring two dual 4 ohm subs = 4 ohm
Series-Parallel wiring two dual 2 ohm subs = 2 ohm

NOTE: Never connect only one coil of a Dual Voice Coil (DVC) speaker. BOTH voice coils must be connected to the amplifier

TIPS TO GET THE MOST OUT OF YOUR PBX1S WOOFER

Your PowerBass subwoofer has been meticulously engineered and designed to handle high power musical reproduction. Despite their rugged construction, it is possible to damage your speaker if they are improperly used. In general, you will hear distortion as a so-called warning before any damage occurs. If you hear distortion in your system, immediately reduce the musical level to the point where the sound retains its clarity.

1. All PowerBass subwoofers require an initial break-in period before it will reach optimum performance. Like any new precision machinery, allow a minimum of several days to one week with normal daily usage to ensure that the suspension has properly been broken-in.
2. Be sure you supply the speakers with enough unclipped amplifier power to drive them properly. (More damage can be done to a speaker by under-powering and clipping your amplifier than any other way!)
3. Where possible, run your Speakers in mono instead of stereo. Most bass is reproduced in mono so there is less chance of any cancellation if played in mono.
4. Where possible, wire your Speakers in parallel instead of series. Bass is reproduced either way but again there is less chance of cancellation in parallel. NOTE: Be sure the amplifier you are using is stable to the resulting impedance of the speaker load!
5. Where possible, a separate amplifier just for your subwoofers should be used with an electronic crossover to set the frequency range.
6. Do not block the front of your speakers. You want as much direct air coupling as possible.

Note: Please use the enclosed paper template if you are pre-drilling speaker mounting pilot holes - do not use the woofer as a template.

BOX CONSTRUCTION (SEALED): The material used for enclosure walls should be solid, dense and free of voids or warps. Your enclosure should be made ¾" or 19mm material, Finland or Baltic birch type plywood is recommended where the enclosure will be transported frequently. High-density fiberboard - MDF (not chip board) can be used on permanently installed systems.

Minimum of 1" (25mm) or double ¾" (1-1/2") baffle is recommended on high-powered SPL applications. Corners must be strong and air tight and should not have any air leaks or openings. Joints should be properly filled with glue that will not crack under high stress or impact. If the integrity of the glue seal can't be determined, hot glue or RTV caulking should be used to seal all seams.

Fiber reinforced resin may also be used to form any difficult shapes. However avoid making large panels with resin to eliminate any chances of box flexing, cracking or ratting under high pressure. Bracing made of 2 x 2" or 2 x 4" should be liberally applied either inside or outside the cabinet, depending on whether the cabinet is to be permanently installed or portable. This principle applies to any walls of the enclosure spanning more than 18" long.

Any braces should also be liberally glued or screwed down on edge. Edge-wise drilled, and countersunk holes through the braces can be used for #10-2 Flathead wood screws to avoid the use of more expensive lag bolts. The majority of strength from an enclosure comes from the glue. When using screws be sure to pre-drill holes to avoid splitting the wood.

Note: Do not mount the woofer in the enclosure within 24 hours of sealing the internal joints. The gasses given off as the sealer cures can affect the surround of the speaker resulting in permanent damage that will void the warranty.

WARNING! The use of silicone rubber to seal in a speaker will void the Warranty! If any sealing is needed in addition to the speaker's gasket, use caulking cord or vinyl weather strip.

BREAK IN PERIOD

To get the most from your woofer we recommend a "break-in" period of at **least 40 hours** at no more than 1/3 of maximum volume.

During this time the cone and spider assembly will gradually break in resulting in greater performance and more listening enjoyment.

SUBWOOFER Crossover SETTING

Your PowerBass subwoofers will perform best if they are used in conjunction with a subwoofer crossover of some kind. Using a crossover will remove unwanted high frequencies and allow them to concentrate only on bass. The two most common types of crossovers are "passive" or "active" (electronic crossovers are active). Many amplifiers have a built in Low Pass (LPF) electronic crossover circuit. For optimum subwoofer performance we recommend an initial electronic crossover setting between 40-100Hz and then tuning the bass to your liking.

**PARAMETERS FOR POWERBASS
PBX1S SERIES WOOFERS**

(Due to Constant Improvements, Specifications and Parameters are subject to change without notice)

	PBX1S-8D2	PBX1S-8D4	PBX1S-10D2	PBX1S-10D4
VC Impedance (ohms)	2Ω + 2Ω	4Ω + 4Ω	2Ω + 2Ω	4Ω + 4Ω
Test Impedance (ohms)	1.07	1.70	1.58	1.98
Driver Displacement	0.031	0.031	0.701	0.701
Fs (Hz)	44.7	48.5	30.5	31.7
SD (sqCM)	201.10	201.10	380.10	380.10
Vas (Ltr)	5.972	5.283	25.22	17.27
CMS (MM/N)	0.104	0.092	0.123	0.084
Mms (g)	121.4	116.50	220.80	298.20
BL™	4.968	6.039	6.233	9.858
Qms	6.536	8.052	10.12	10.70
Qes	1.431	1.701	1.176	1.21
Qts	1.167	1.407	1.054	1.09
No (%)	0.091	0.096	0.084	0.076
Spl (dB)	78	79	81	80
Xmax (mm)	7 mm	7 mm	10.5 mm	10.5 mm
Voice Coil Size (inches)	1.5"	1.5"	2.0"	2.0"
Frequency Response (Hz)	45-400 Hz	45-400Hz	30-350 Hz	30-350Hz
Mounting Depth	2.77"	2.77"	3.63"	3.63"
Power (RMS/Peak)	250/500 watts	250/500 watts	350/700 watts	350/700 watts

* Please note specifications are tested with coils in parallel configuration



PARAMETERS FOR POWERBASS
PBX1S SERIES WOOFERS

(Due to Constant Improvements, Specifications and Parameters are subject to change without notice)

	PBX1S-12D2	PBX1S-12D4
VC Impedance (ohms)	2Ω + 2Ω	4Ω + 4Ω
Test Impedance (ohms)	1.03	1.94
Driver Displacement	0.092	0.092
Fs (Hz)	30.0	30.9
SD (sqCM)	490.90	490.90
Vas (Ltr)	46.63	33.64
CMS (MM/N)	0.137	0.099
Mms (g)	206.00	268.10
BL™	6.069	8.064
Qms	7.709	9.180
Qes	1.084	1.553
Qts	0.947	1.327
No (%)	0.112	0.061
Spl (dB)	82	80
Xmax (mm)	10.5 mm	10.5 mm
Voice Coil Size (inches)	2.0"	2.0"
Frequency Response (Hz)	30-400 Hz	30-400 Hz
Mounting Depth	3.78"	3.78"
Power (RMS/Peak)	400/800 watts	400/800 watts

* Please note specifications are tested with coils in parallel configuration



RECOMMENDED ENCLOSURES

Please note that these enclosure volume recommendations are for the internal airspace inside the enclosure and include the displacement of the subwoofer and ports. When choosing your enclosure type, please pay close attention to your specific woofer, failing to use the correct enclosure may result in lower power handling and poor sound quality. ***To calculate the internal airspace required, take the internal dimensions of the box. First multiple these number by themselves and then divide this sum by 1728. (W x H x D) / 1728.*** Please contact your authorized PowerBass dealer for other designs and specifications. ***(Even though these subwoofers can be used in a ported enclosure, PowerBass recommends a sealed enclosure for optimum performance and sound quality.)***

PBX1S-8D2 / PBX1S-8D4 Sealed Enclosures

SEALED ENCLOSURE TYPE	Compact	Universal
Gross Vb Internal	0.34 cuft	0.59 cuft
F3 (-3dB Cutoff)	52 Hz	51 Hz
Pe (Watts-RMS)	100-250W	100-250W

PBX1S-10D2 / PBX1S-10D4 Sealed Enclosures

SEALED ENCLOSURE TYPE	Compact	Universal
Gross Vb Internal	0.59 cuft	0.84 cuft
F3 (-3dB Cutoff)	39 Hz	36 Hz
Pe (Watts-RMS)	100-350W	100-350W

PBX1S-12D2 / PBX1S-12D4 Sealed Enclosures

SEALED ENCLOSURE TYPE	Compact	Universal
Gross Vb Internal	1.15 cuft	1.39 cuft
F3 (-3dB Cutoff)	39 Hz	37 Hz
Pe (Watts-RMS)	100-400W	100-400W



Tech Support
8:30am-5:30pm Pacific Time
(909) 923-3868
www.powerbassusa.com

POWERBASS LIMITED WARRANTY POLICY

PowerBass USA, Inc. offers limited warranty on PowerBass products under normal use on the following terms:

PowerBass Speakers are to be free of defects in material and workmanship for a period of one (1) year. The warranty is extended to three (3) years for parts and labor, if an Authorized PowerBass Dealer completes the installation.

This warranty applies only to PowerBass products sold to consumers by Authorized PowerBass Dealers in the United States of America. Products purchased by consumers from a PowerBass dealer in another country are covered only by that country's Distributor and not by PowerBass USA.

This warranty covers only the original purchaser of PowerBass product. In order to receive service, the purchaser must provide PowerBass with a valid purchase receipt from an authorized reseller stating the consumer name, dealer, product 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 PowerBass's discretion and will not be liable for incidental or consequential damages. PowerBass will not warranty this product under the following situations:

- **Speakers received with bent frames or water damage**
- **Abuse such as holes in the cone, surround or ripped spider**
- **Voice coil damage due to amplifier clipping or distortion**
- **Product that has not been installed according to this owners manual**

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 PowerBass any other liability in connection with the sale of this product.

Please call (909) 923-3868 for PowerBass Customer Service. You must obtain an RA# (Return Authorization Number) to return any product to PowerBass. **The RA number must be prominently marked on the outside of the shipping carton or the delivery will be refused.** Please pack your return carefully; we are not responsible for items damaged in shipping. Return the defective product along with a copy of the original dated retail sales receipt:

**PowerBass USA, Inc.,
Attn: Returns (RA# _____)
2133 S. Green Privado, Ontario, CA 91761**

Residents of HI, AK and US territories will be charged for return shipping. All inquiries regarding service and warranty should be sent to the above address.

Removed or altered serial numbers will void this warranty



PowerBass (PBX) – A division of PowerBass USA, Inc.

2133 S. Green Privado – Ontario, CA 91761

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www.powerbassusa.com