
Bowers & Wilkins

Why don’t bubbles have corners?

Simple, really. It’s all about the best way of enveloping a given volume of gas. Bubbles always adopt the form with the least possible surface area - which is always a sphere (and never a cube or a pyramid or anything else with corners). It’s the most stable form there is, too. The air pressure inside a bubble pushes outwards, equally in all directions, but surface tension balances the air pressure out and holds the bubble together evenly, all the way around. No corners, no straight lines. Just a lovely, round bubble. Beautiful.

When we decided to create a new, powerful, compact subwoofer for use in home theatre or two-channel set-ups, we weren’t going to contradict nature. We wanted to deliver big bass from a small speaker, as purely and naturally as possible. We needed something that could withstand the huge variations in air pressure that very low frequency sound generates. We needed to design a pressure vessel that wouldn’t do a wobbly at high volumes.

So instead of making a box, we made a bubble.

Techno bubble

As befits something as simple as a bubble, the user controls on the PV1 have been made as straightforward as possible without sacrificing any of the flexibility that marks out the best subwoofers.

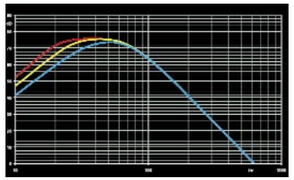
Versatility is important. As the PV1 demonstrates, a good subwoofer is much more than just a boom box. It is able to dovetail with and enhance any kind of home theatre or audio set-up, in any kind of room. The PV1 is provided with a group of elementary technical features that allow you to tailor its output precisely to your needs and those of your system. Once you have set these, you may never need to worry about them again.

If your room has a noticeable low-frequency resonance, or if the subwoofer is operating at high volume, you might need to reduce the bass extension using the EQ control. Normally this is set to maximum, but the PV1 offers two reduced settings. The phase switch has two settings; choose the one that offers the fullest sound.

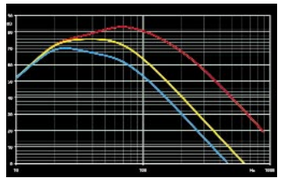
In a home theatre system, the processor will control the volume and filtering of the subwoofer, but the PV1 includes two more controls to help blend the PV1's output with that of a two-channel audio set-up. A volume adjustment is used to match the loudness of the subwoofer to that of the main speakers, and the low-pass frequency control allows its bass range to be dovetailed with the other speakers' 'roll-off' frequency.

Finally, the Mode (On/Standby) switch includes a middle, enery conserving position of Auto. The unit remains in Standby mode until it receives a signal, whereupon it fires up instantaneously. If, after being active, five minutes passes without a signal, the PV1 automatically resumes Standby mode.

We're fairly sure, though, that you'll want to keep the bubble busy.



Besides its full bass extension the PV1 can be set at either of two 'tamed' output settings, which allow it to perform in resonating rooms or at exceptional volumes.



Three settings on the PV1's low-pass filter control allow its cut-off frequency to be matched to the 'roll-off' frequency of the main speakers in a two-channel audio set-up.

A simple set of sockets and switches on the PV1 mean it couldn't be easier to hook up the unit to a new or existing system, and to get the whole ensemble playing in total harmony.

Pushing the envelope

No corners, no straight lines. Our bubble is a beautiful solution to the problems that plague conventional subwoofers. In a normal, flat-sided subwoofer, the tremendous air pressures generated at higher output levels tend to stress the panels of the cabinet, setting up resonances that can ruin performance. In the PV1, those pressures are dispersed evenly around a rigid, continuous shell, reducing unwanted vibrations to a bare minimum. The PV1's added stability means it can be pushed just that bit farther. The symmetrical mounting of its twin drive units keeps the subwoofer perfectly balanced and anchored to the floor. So there's no rattle when it rumbles. The back-to-back arrangement also further improves the distribution of pressure inside the speaker.

The drivers themselves are made of stern stuff. A thick, three-layer composite of mica cone, foam core and aluminium facing ensures that the diaphragm retains its shape and remains heroically true to the sound signal. Not only that, any extraneous vibrations that are produced inside the unit are stopped dead in their tracks by such a formidable acoustic barrier. All you hear is unimpaired bass that expands and deepens every listening experience. A big sound from a small box.

Since it has to hold a pair of drive units and a handful of electronics, our bubble isn't quite a perfect sphere. Its curves, however, are in all the right places. Advanced computer analysis of the PV1's shape and construction – plus a little inspiration from the design of marine pressure vessels – has allowed us to iron out the effects of the not-so-spherical sections.

A look inside the PV1 reveals the rugged nature of the drive units and just how thin we have been able to make the walls of the enclosure in order to maximise the internal volume. But just touch the walls when the PV1 is playing loudly and you will feel no vibration. Simple proof of how well the pressure vessel concept works.

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Finishes

This subwoofer presents lovers of home movies and music with a naturally elegant way to deepen their listening experience. The PV1 works, sounds and looks better than its boxy counterparts.

It's smaller, too, of course. There's no need to hide this subwoofer behind the sofa. We'd like the bubble to, if not float, then sit as serenely as possible in your room. With that in mind, we have provided a choice of two contemporary, metallic finishes: silver, with a mid-grey trim; and black with an anthracite trim. At last, beauty and bass all in one package.

PV1

Technical Features	**Pressure vessel enclosure** **500W IcePower amplifier** **Switch mode power supply**
Description	Active closed-box subwoofer system
Drive unit	2x ø200mm (8 in) mica / aluminium cone long-throw
Frequency range	-6dB at 18Hz and 40/140Hz adjustable (EQ at i)
Frequency response	±3dB 21Hz – 31/110Hz adjustable (EQ at i)
Amplifier	Power output: 500W Rated power consumption: 110W (105W – 100V version) Input impedance: 100kΩ Signal / noise: >90dB Functions: Volume level Low-pass filter frequency Bass roll-off alignment Auto sense on/standby Phase switch Inputs: Line In (RCA Phono) Speaker Level In(RJ11) Outputs: Link Out (RCA Phono)
Low-pass filter	Active 2nd -order, variable cut-off frequency (applies only to speaker level input)
Dimensions	Height: 335.5mm (13.2 in) Width: 289mm (11.4 in) Depth: 347mm (13.7 in)
Net weight	20.5kg (45 lb)
Cabinet finish	Silver with grey trim Gloss black with anthracite trim

B&W Bowers & Wilkins

B&W Loudspeakers Ltd
Dale Road
Worthing West Sussex
BN11 2BH England

T +44 (0) 1903 221800
F +44 (0) 1903 221801
info@bwspeakers.com
www.bwspeakers.com

UK Sales Enquiries and Service
T +44 1903 221 500
E uksales@bwspeakers.com

B&W Loudspeakers of America
T +1 978 664 2870
E marketing@bwaudio.com

B&W Loudspeakers (Asia) Ltd
T +852 2 790 8903
E bwahome@bwspeakerasia.com.hk

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