

JBL

XPL series





XPL series





- Titanium high frequency dome drivers with low dynamic compression design
- Composite low frequency drivers with Symmetrical Field Geometry (SFG) magnets
- Time arrival corrected Reaction Molded Foam baffle
- Rigidly-braced trapezoidal enclosures
- Low loss, low distortion crossovers with bypass capacitors and gold-plated inputs
- Internally wired with Monster Cable®

XPL 200. The most refined home loudspeaker JBL has ever made; the culmination of 40 years of experience in the art of speaker design. The XPL 200 incorporates every worthwhile advance in design and materials. Shown in black lacquer finish.

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Loudspeaker designers have always been in agreement as to what a loudspeaker should do: Simply the function of any speaker is to reproduce recorded music as faithfully as possible. Nowhere is this more true than in the genre of speakers known as "high-end."

"JBL has always managed to offer products which combine sonic perfection and exceptional quality..."**

—*La Nouvelle Revue Du Son*, 1988, LX55 speaker

The controversy arises when it comes to designing and building a speaker to meet this simple requirement. In the forty years since the birth of the concept of high fidelity reproduction, speaker manufacturers have left no acoustical stone unturned in the search for musical truth. Speakers have been made in all shapes and sizes, using every method known to physics to reproduce sound.

The result is predictable and consistent: unjustifiably costly, gimmicky products, and listeners subjected to the sound of the speakers instead of the experience of music.

The JBL approach to high fidelity sound.

But over the same forty years, JBL perfected another approach. Since a loudspeaker's drivers are what actually generate the sound, they are the most logical place to improve it. Building drivers out of the most advanced materials available using manufacturing techniques specifically designed for the task will, in theory, produce sound that is noticeably more accurate—the essence of true high fidelity reproduction.

How well does this theory work in practice? For the past several decades, professionals throughout the music industry have chosen more JBL speakers over any others to meet their needs. Every year, over 70% of the music industry's multi-billion dollar output is monitored, mastered and mixed with JBL sound. In movie theaters, concert halls and clubs

around the world, the more prestigious the location, the more likely it is to have a JBL sound system. And in Europe and Japan, two places home to the world's most critical audio reviewers and consumers, JBL speakers are achieving cult status.

"...one of the few manufacturers that do literally everything, from building cabinets to drive units, in house..."

—*What Hi-Fi?*, 1987, L20T speaker

There are hundreds of brands of speakers on the market today and over a thousand individual models. Each comes equipped



Building speakers from scratch. JBL builds virtually everything that goes into its XPL loudspeakers, from drivers to enclosure. Consequently investing in an XPL speaker means greater value and perfectly integrated speaker components for better sound.



World-class in the real sense.

In Great Britain, a country known for tough speaker competition and tougher audio critics, JBL speakers are increasingly reviewed and recommended. In Japan, a nation populated with discerning audio enthusiasts, JBL speakers—both new and old—are highly prized. And the National Research Council of Canada recently chose JBL studio monitors as the standard for the Canadian Broadcasting Company (CBC).

"If pressed to make a decision, I think it would have to be the JBL."

—*What Hi-Fi?*, 1987, comparison of 8 speakers (7 British, 1 American)

"...JBL speakers are about the most sought-after speakers in Japan."

—*Stereo Test Reports*, 1980

"A grand tradition of craftsmanly innovation."



with its own story and promise of performance. But only one speaker can promise that it will deliver music as it was originally intended to sound in the recording studio or in concert. If a high-quality stereo system equipped with any JBL loudspeaker—regardless of price—ever makes a sound the listener finds objectionable, they should look elsewhere for the cause. JBL speakers are capable only of speaking the musical truth.

The new JBL XPL series loudspeakers are the latest expression of the JBL tradition. They represent the culmination of JBL's years of experience as a leader and pioneer in the field of loudspeaker design and manufacturing.

Advanced materials, meticulous engineering, painstaking craftsmanship and innovative design: each in its own way has the potential to improve speaker perfor-

"...an exceptionally smooth, uncolored speaker."

—Stereo Review, 1977, L166 speaker

mance. Investing in a pair of JBL XPL series speakers is the most effective way of benefiting from the full potential of each. They truly are, as one reviewer of an earlier JBL speaker put it, "the latest in a grand tradition of craftsmanly innovation."

The difference between selling speakers and making speakers.

As a listening experience, JBL XPL series speakers are completely new. One might assume this would hold true for high-end speakers in general. But few speaker

"...an articulate yet subtle loudspeaker capable of producing an extremely expressive sort of sound."

—What Hi-Fi?, 1987, L20T speaker

companies actually manufacture much of their speakers. Instead, drivers, cross-overs and sometimes even enclosures are often purchased from outside sources. Ironically, this state of affairs is more likely to exist at the higher end of speaker design, where the economic necessity of low volume production makes the building of original components prohibitive. Because critical components are often identical, many loudspeakers—for all the different acoustical and marketing claims—end up sounding much the same. Moreover, overall sound quality is often seriously compromised. Since a specific high frequency driver may be used in dozens of loudspeaker designs, for example, it must be all things to all speakers. Outstanding performance might actually be undesirable.

A JBL XPL high frequency driver, however, must match only one other type of component: JBL mid and low frequency drivers. Finally, this all-JBL transducer chain is harnessed for sound reproduction by a JBL dividing network and housed in a JBL-built enclosure.

Does it really make a difference? When audio reviewers have praised JBL speakers over the years, one word often used is "smooth." The seamless sound quality so often mentioned in speaker design, and so rarely achieved, is inherent in the JBL design philosophy of building the speaker system in-house. The legendary JBL sound resulting from this approach is undoubtedly one reason for JBL's unanimous acceptance by the music and recording industry.

The XPL series represents the limits that this approach can be taken within the

"...the JBL responded with exemplary smoothness and linearity across the audible range."

—High Fidelity 1968, Model 88 speaker

confines of present technology. This alone is why they demand to be auditioned by anyone who seriously considers themselves to be both an audiophile and a music lover.

The recording industry's standard.

With the introduction of the 4310 in the 1960's, JBL became the speaker of choice for the music industry. Its home counterpart became one of the most successful and widely imitated speakers of all time. Today over 70% of the recording studios use JBL speakers.

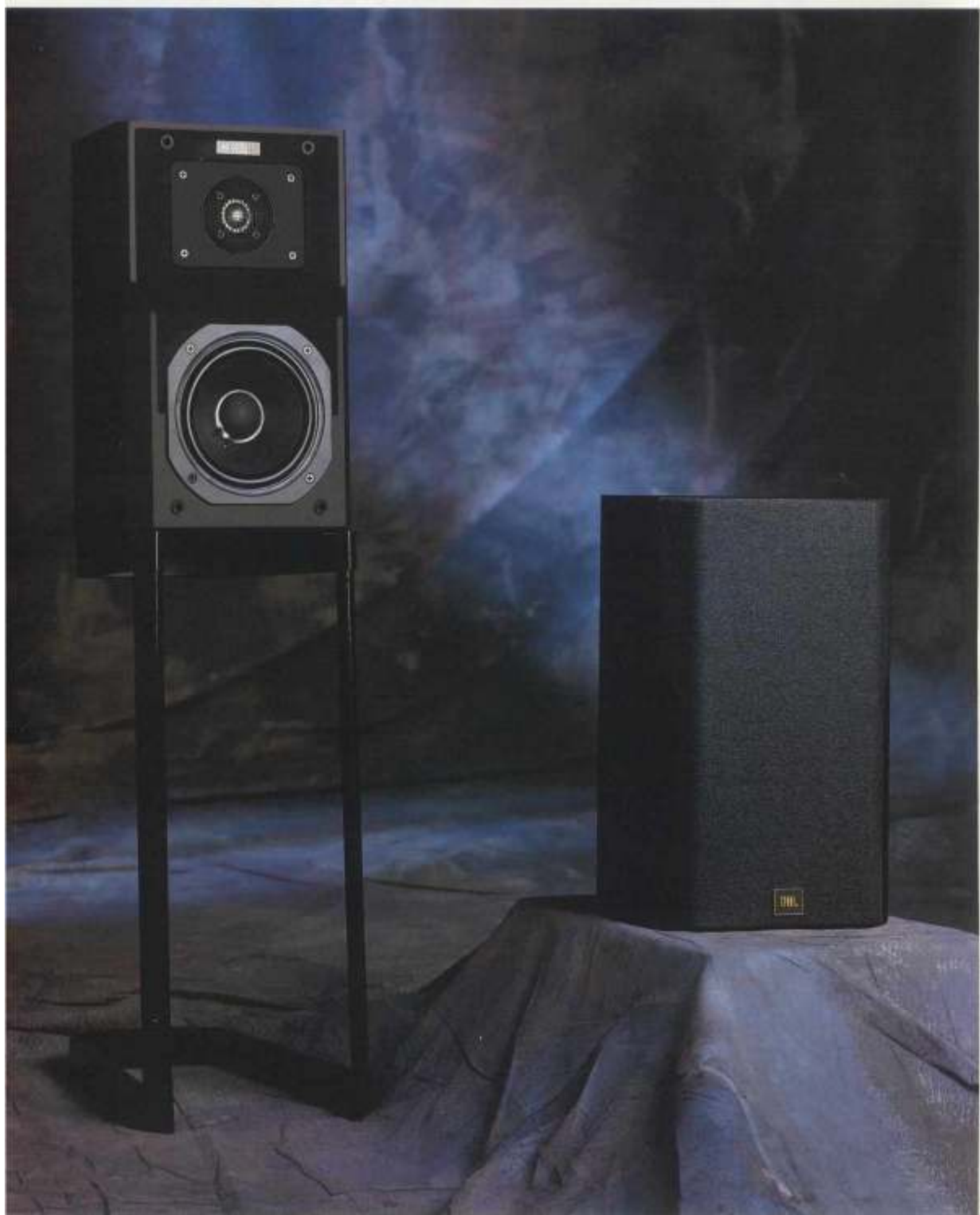


*from a review of the JBL L212 speaker system, High Fidelity 1978

**All excerpts from reviews relate to previous JBL products.



XPL series



"We wish all breakthroughs had equally sterling virtues."



The JBL XPL series speakers are not yet another unnecessarily costly "no-holds-barred" design. All the expense in materials and design has been selectively invested through painstaking engineering, precisely in the areas where it is most sonically beneficial. The fact that the

"Rated absolutely first class, a standard."

—Stereoplex, 1986, 250Ti speaker

crossover network, wire and binding posts used in these speakers are worth more than some complete systems is not an extravagance, but an investment in sonic purity. In short, if it has the potential to make a difference, JBL has built it into the XPL series.

Speakers bearing the JBL logo and dating back to the very beginnings of home high fidelity reproduction were built the same way. Today most of them are highly prized collectibles, still capable of showing up many current speakers when played with modern source materials. But the XPL series demonstrates what is possible when this tradition meets new technology.

Most important, this approach is applied throughout the XPL line. While individual models differ by degree, each strictly adheres to the same quality standard. For example, in most musical parameters, the diminutive XPL 90 is remarkably close in character of sound to the floor-standing

XPL 200. Whichever one the audio enthusiast invests in, they can be assured of the best level of audio performance JBL is currently capable of delivering in a consumer product.

Titanium: the benefits of metal at music's edge.

When JBL first introduced titanium dome tweeters to its consumer loudspeakers in the 1980's, audio reviewers and the audio-buying public responded with enthusiasm. This was not a surprising reception for the most accurate loud-speaker line ever from a company famous for its studio monitors.

While the lower frequencies provide music with its substance, the higher frequencies give it detail and clarity. But

"The quality of workmanship and the finishing of the wooden enclosure is unsurpassed."

—Stereo Review, 1985, 250Ti speaker

the reproduction of high frequencies demands that the driver respond at a rate of up to 20,000 times per second at an acceleration of up to 1,000 g's. Doing a better job meant finding alternatives to the cloth and paper from which a high frequency driver's dome is traditionally made.

The answer was found in another industry. Like driver domes, airplanes were originally made from cloth and other organic materials. But the stress caused by the demands of ever-increasing performance soon rendered them obsolete. Metals possess the strength required, but exact

"... the [titanium] tweeter's clarity and definition do make for excellent imaging."

—New Hi-Fi Sound, 1986, L20Ti speaker

a penalty in increased weight. The solution would be a metal stronger than steel yet light as paper. Titanium is such a metal, one widely used in aviation today. Titanium provides high frequency sonic definition and detail comparable to the exemplary performance of JBL's low frequency drivers. JBL's titanium high frequency dome is as strong as a dome ten times as thick made from conventional materials.

*from a review of the JBL L19 speaker, High Fidelity, 1980

XPL 90. Although compact, the XPL 90 retains the overall sonic signature of the much larger XPL 200, making the experience of high-end speaker listening practical in a wide range of environments. Shown in black ash finish with optional stand.

Paper-light and stronger than steel.

Both these JBL domes and this Mach 3 reconnaissance aircraft must be extremely light, capable of very fast movements, and able to withstand extreme structural stress. That's why they are all made from titanium.



The unique ribbed pattern increases the titanium diaphragm's structural strength without affecting sound quality. The diamond perimeter allows the dome and surround to be constructed from the same material without introducing resonance problems because it carefully con-

"Craftsmanship and 'battleship-type' construction are evident throughout."

—High Fidelity, 1963, DP44000 Paragon speaker system

trols primary and secondary resonances. By forming the surround from titanium as well, the diaphragm remains no more complex than necessary and exhibits no objectionable irregularities during operation. The dome's ribs and the surround's diamond pattern are such a remarkable engineering feat in themselves that they are patented. The net result is a high frequency driver that imparts a greater sense of clarity and openness to music.

"The titanium dome tweeter has superb definition, richness in the upper harmonic range, and clarity."

—La Nouvelle Revue Du Son, 1988, LX55 speaker



- Tapered enclosure walls
- Titanium high frequency driver
- Ferrofluid™ cooling
- Faceplate cooling structure
- 76 mm (3 in) voice coil
- Internal bracing
- Titanium midrange
- Time arrival corrective baffle step
- Neoprene baffle treatment
- Sealed subenclosure
- Tuned, rearward facing port
- Symmetrical Field Geometry (SFG) magnet structure
- Double bypass capacitors
- Gold plated inputs
- Crossover network
- Cast frame
- Monster Cable® internal wiring
- Composite low frequency cone
- Multi-layer baffle with Reaction Molded Foam (RMF)
- MDF enclosure with Lock Mitre construction
- Adjustable feet

XPL 200 internal view



The new voice of titanium.

In the three- and four-way XPL series speakers, titanium's acclaimed sonics are successfully integrated with a new breakthrough: the XPL titanium midrange. This brings the proven benefits of titanium

"...the clarity and transparency of its high-end response were distinctly superior..."

—Stereo Review, 1985, \$50Ti speaker

deeper into the audio spectrum—right through the critical vocal regions, where loudspeaker accuracy is truly put to the test. By adapting proven, proprietary titanium-forming technology to the task, JBL managed—in one bold engineering leap—to realize a decades-old dream of all speaker designers: perfect driver integration.

The XPL titanium midrange operates down to 500 Hz and is capable of flat response up to 7 kHz—nearly double what is actually required. This margin of overperformance allows the titanium midrange and high frequency drivers to effortlessly blend with one another, achieving a level of driver matching new even for JBL.

Made from the same material and incorporating the same engineering and construction techniques as the high frequency driver, the XPL titanium mid-

range reproduces music with coherence and brilliance. The midrange incorporates a 76 mm (3 in) voice coil, larger than that found in most woofers. The large diameter coil/dome structure makes the XPL titanium midrange a true edge-driven device. Its 94 dB sensitivity gives it the ability to "ride out" the most powerful musical peaks by providing extraordinary dynamic capability.

In fact, the level of performance achieved from the new titanium midrange inspired JBL to take a fresh look at the original titanium driver. The high frequency driver used in the XPL series is a second-generation device with increased power handling and greater linearity. Even its faceplate has been rethought, and transformed through diecast metal construction into a cooling system. Together, the new titanium midrange and improved titanium high frequency driver promise a level of clarity and definition previously unheard from any speaker company, including JBL.

Preserving sound quantity as well as quality.

JBL titanium drivers make an important contribution to sonic accuracy in another critical area: dynamics. All loudspeaker drivers suffer from power compression,

"...the closest approximation to the dynamics of the real thing that I have experienced in my home."

—Which Compact Disc, 1986, L80 speaker

the point where, at certain volumes, the driver is simply incapable of producing more sound even with an increase of power. The problem is actually intensified in conventional speaker systems by reliance on generic drivers.



XPL series loudspeakers are available in a variety of finishes: black ash, walnut, and black and white lacquer. Each is painstakingly crafted along the lines of fine furniture. The optional DX-1 electronic crossover's circuitry is built to the same level as the XPL speakers, providing the ultimate in bi-amplification flexibility for the XPL \$00. Consult your dealer for full details.

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With the advent of digital recording, this means that the speaker is quite capable of filtering out much of the dynamic range the recording engineer worked hard to preserve throughout the recording process. JBL's preeminent role in the recording industry drove the company to

"They sound as good at background levels as when attempting to re-create the sound of an orchestral concert..."

—Stereo Review, 1985, 950Ti speaker

find solutions to this problem:

The contribution to realism made by proper acoustical dynamics was evident in the very first JBL speaker application: motion picture theater playback systems. JBL maintains that a speaker should sound its best at all volume levels, and engineers this quality into all home and professional products. But again, the realization of how far this concept can be pushed by technology is the XPL series. The titanium driver's diamond surround and ribbing stiffen the dome without adding mass, helping control resonance to achieve more accurate frequency response at all output levels. Building complete driver assemblies to standards developed for the professional sound industry ensures high power handling and long-term reliability. As a final step,





the high frequency driver's voice coil is cooled with Ferrofluid™, a magnetic oil which helps prevent the buildup of heat—one of the causes of power compression.

In this way, musical peaks are not com-

"At all listening levels, from the very soft to inordinately loud, the sound remained clear and in acoustic focus."

—High Fidelity, 1963, DD44000 Paragon speaker system

"Even with the volume level down, the Hartsfield holds the music out in the room and doesn't let it collapse back into the cabinet."

—High Fidelity, 1954, JBL Hartsfield speaker

pressed or restrained. The uncanny "instruments-in-the-listening-room" effect, noted by several generations of JBL owners and reviewers, is preserved and updated.

The JBL composite low frequency drivers: a formidable foundation for music.

All too often, "breakthrough" technologies at one end of the audio spectrum are mated with average performance at the other. But in the JBL XPL series, the technology behind the low frequency driver is no less impressive.

The low frequency driver gives reproduced music substance and authority, while at the same time imparting a sense

of detail and definition. Like its higher-frequency counterparts, it's subjected to considerable stress in the process. In an effort to determine the ideal cone material, speaker designers have long debated the merits of various materials. Instead, JBL speaker designers worked to combine the best qualities of many. The result is the JBL composite cone, first used in JBL studio monitors and professional speakers, and incorporated into the three-way and four-way XPL series speakers.



The low frequency drivers in the XPL series make use of combinations of polypropylene, fiber substrates with copolymer or Aquaplas treatments to control mass, stiffness, damping and cone break up. Like titanium, Aquaplas is a material adapted from the aerospace

"... the exceptional quality of the transducers works together with the principle of a constant stereo image to produce superb results."

—*Nouvelle Revue du Son*, 1986, Project Everest system

industry. It's used on the U.S. Space Shuttle to minimize vibration.

To fully utilize the potential of such a stiff cone, the cone/voice coil assembly is suspended in a massive cast frame. This enables JBL to achieve much tighter tolerances in the critical voice coil gap. That, along with an overbuilt magnet, precision voice coil and a properly focused magnetic circuit, makes the XPL low frequency driver an exceptionally efficient motor, well suited for the complete reproduction of the lowest octaves. This is especially true for the XPL 200, which has an edge-wound voice coil.

In its realm, the XPL composite low frequency driver is comparable to the titanium dome drivers in its ability to pre-

serve nuance and detail. It's fast, light, rigid and extremely powerful, with one of the lowest distortion levels ever achieved, thanks to its Symmetrical Field Geometry (SFG) magnetic structure (up to 20 dB lower in second order harmonic distortion in the midbass region than non-SFG ferrite structures).

As the final link in the driver chain, the JBL XPL low frequency driver ensures that the finished loudspeaker is absolutely free of any weak links.

Housing and harnessing XPL series technology.

To make full use of the sonic qualities inherent in the XPL series drivers, JBL launched an equally comprehensive engineering program to advance the art

"...we found ourselves enjoying their sound without thinking of them as loudspeakers."

—*Stereo Review*, 1982, L46 speaker

of enclosure, baffle and crossover network design.

As it turns out, there was considerable room for improvement. The XPL series uses all of it. The baffle is constructed from multiple layers: a rigid plate of fiber-

board, and a shell of Reaction Molded Foam (RMF). The fiberboard provides strength and the foam acoustical damping, two highly desirable qualities. A 6 mm (.2 in) neoprene layer controls diffraction by preventing mid and high frequency sound from being smeared by

"On some selections, the JBL's sound could not be distinguished from that of the 'live' reference."

—*Stereo Review*, 1977, L166 speaker

re-radiating off the baffle's surface.

The two-layer baffle also makes it practical to place the high frequency drivers' sound-producing surfaces in a driver-linear plane with no compromise in structural integrity. This further improves the speaker's imaging and spatial qualities by enabling the sound from each driver to arrive at the listener's ears at the correct time. It's another example of creatively harnessing every aspect of the complete speaker to further improve the drivers' inherent sound quality, and another concept derived from JBL's experience in professional sound.

The enclosure is a critical part of the low frequency reproduction system. The XPL enclosure makes full use of the techniques JBL has learned in building speakers powerful enough to fill sta-



dioms. It's designed to produce no sound of its own, even with the low frequency driver working at full dynamic capability. A rounded back and non-parallel sides help break up internal standing waves. The precisely tuned port is located in the rear to minimize any unwanted noise. As a final touch, the XPL enclosure is finished to a furniture grade level of quality, reflecting the understanding that advanced audio technology for the home must also achieve visual harmony.

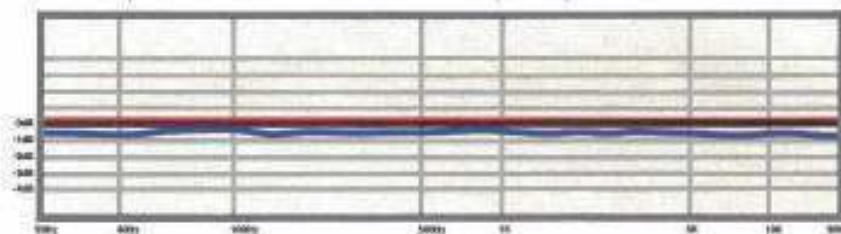
The XPL crossover is built the same way as the drivers: with some of the best materials technology can provide, using engineering and manufacturing techniques designed for the task. This is a necessity if the output from the amplifier is to reach the drivers in the purest form possible.

The crossover is engineered to prevent audible distortion and preserve spatial characteristics. Bypass capacitors are used throughout (the XPL 200's crossover network uses double bypass capacitors). All capacitors are low-loss and high-current types. The low-distortion inductors are wound of low DC resistance wire to minimize hysteresis loss. To eliminate any chance of signal degradation, the network is wired to the various drivers with Monster Cable® with critical connections gold plated. All the work JBL has put into the XPL crossover makes an XPL loudspeaker a much easier load for the system's amplifier to drive because the speaker's electrical characteristics are smoothly regulated.

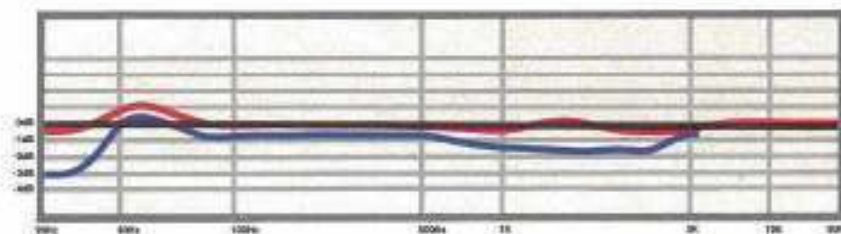
In all XPL models except the two-way XPL 90, the speaker may be bired to take advantage of the different qualities of multiple amplifiers and various speaker cables. In addition, the XPL 200 has built-in provision for bi-amplification. The optional JBL DX-1 electronic crossover provides the ultimate in bi-amplification flexibility when used with the XPL 200 loudspeaker and multiple amplifiers.

As a final acoustical touch, the XPL 160 and 200 speakers are supplied in mirror-imaged pairs to place the stereo image in extremely sharp focus. Adjustable feet in floor-standing models allow the fine-tuning of the stereo image and spatial characteristics for the depth of the individual listening room. Optional stands for each model enable the listener to realize the full sonic potential of the XPL design in a variety of environments.

Power compression. These graphs show the effect power compression has on a loudspeaker's frequency response. The black line represents the normalized system response at an output level of 80 dB at 1 meter. The red and blue lines show response when output level is increased to 90 and 100 dB respectively.



XPL 200 speaker. An "ideal" loudspeaker with no power compression would produce a single flat curve indicating no deviation from the normalized flat response at 90 and 100 dB levels. In the upper graph, the JBL XPL 200 loudspeaker demonstrates remarkable freedom from the power compression. At 90 dB the system exhibits no measurable compression compared to the 80 dB level, and at 100 dB output the system deviates no more than .5 dB.



Competitive high-end speaker. A competitive high-end loudspeaker, on the other hand, deviates considerably from the normalized response as the output level increases, as shown in the lower graph. The 100 dB curve does not extend above 6 kHz due to the operation of system protection devices at this level.



XPL series



"It reveals the splendor of the music."



Since JBL speakers made their home debut in the 1940's, owners of these systems have shared a common listening experience. They have become reacquainted with their favorite music.

The reason is that for most of these music lovers, JBL speakers provided the oppor-

"...put your best record on the turntable and turn the volume up gently. I think you will find the effect just about the same as washing the kitchen windows: the improvement in clarity is surprising."

—High Fidelity, 1954, JBL Hertsfield speaker

tunity to hear their favorite music as it was originally intended to sound. After all, speakers with a recording studio pedigree along with a tradition of craftsmanship and engineering are capable of offering music only one way: clearly, accurately, expressively, and with live impact.

The review excerpts featured in this brochure illustrate how audio reviewers feel about JBL's efforts to build these musical characteristics into its speakers for the past forty years. The XPL series represents the sum total of everything JBL learned during that process, complemented with technologies and materials unheard of in

the days of the legendary Hertsfield and Paragon. It's safe to predict that the praise earned by past JBL speakers is merely the warm-up for the words the audio reviewers will find to describe the XPL series.

The difference inherent in the JBL loudspeaker design philosophy can only be appreciated with a critical audition of the XPL series. Ultimately, the difference can only be realized by investing in a pair of JBL XPL series loudspeakers. But for any genuine lover of music, the difference will be truly worth it.

"...take any musical performance I know of, play it through this speaker, and get a musically natural result."

—Audio, 1985, 950Ti speaker

JBL and Harman International.

JBL is part of the Harman International audio companies, a group with a common purpose: combining technology with a love of music to manufacture audio products that provide new levels of satisfaction, performance and value. To promote diversity and creativity, JBL operates independently in research and development. When it comes to translating the results of these efforts into actual consumer and professional products, JBL draws on the full combined strength of the Harman Companies, which includes one of the world's most advanced manufacturing facilities. The result of this teamwork is that JBL's renowned excellence in engineering is successfully carried through to each individual product, regardless of its application or price range. As new audio concepts and technologies are pioneered, the partnership of JBL and Harman International guarantees that consumer and professional audio users everywhere will be able to enjoy their full benefits.

*from a review of the JBL Hertsfield speaker, *High Fidelity*, 1954.

XPL 160 and 140. The realization of the speaker designer's dream: perfect driver integration. Titanium mid and high frequency drivers reproduce all program material with coherence and brilliance. Both speakers shown in black ash finish.



XPL series specifications

	XPL 90	XPL 140	XPL 160	XPL 200
Power handling continuous program*:	100W	125W	150W	200W
Maximum recommended amplifier power:	400W	500W	600W	800W
Nominal impedance:	6 ohms	6 ohms	6 ohms	6 ohms
Sensitivity: (2.83 V @ 1 meter)	87 dB	88 dB	90 dB	90 dB
Crossover frequencies:	3 kHz	900Hz, 4kHz	800Hz, 4kHz	300Hz, 1.1kHz, 4.5kHz
Blamp crossover frequency:	—	—	—	250Hz
Low frequency driver:	165 mm (6.5 in)	200 mm (8 in)	250 mm (10 in)	300 mm (12 in)
Midrange driver:	—	75 mm (3 in) Titanium dome	75 mm (3 in) Titanium dome	165 mm (6.5 in) 75 mm (3 in) Titanium dome
High frequency driver:	25 mm (1 in) Titanium dome	25 mm (1 in) Titanium dome	25 mm (1 in) Titanium dome	25 mm (1 in) Titanium dome
Dimensions				
Height:	39.4 cm (15½ in)	77.2 cm (30¾ in)	84.1 cm (33¼ in)	100.6 cm (39¾ in)
Width:	24.1 cm (9½ in)	33.7 cm (13¼ in)	37.5 cm (14¾ in)	40.6 cm (16 in)
Depth:	24.8 cm (9¾ in)	30.2 cm (11¾ in)	32.7 cm (12¾ in)	35.6 cm (14 in)
Shipping weight:	18.14 kg (40 lbs) pair	24.94 kg (55 lbs) ea	28.12 kg (62lbs) ea	40.82 kg (90 lbs) ea

*IEC shaped noise with 6 dB crest factor

JBL continually engages in research related to product development and improvement. Because of this, new materials, production methods and design refinements may be introduced into existing products without notice. For this reason, any current JBL product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

We wish to express our sincere thanks to the many reviewers of JBL speakers and their associated publications, whose kind words appear in this brochure.



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