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Catalogue

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PROJECT



K2.S5500

Owner's Reference

JBL

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PROJECT K2

Preface

JBL wishes to thank you for selecting a Project K2 loudspeaker system. While the Project K2 loudspeakers are new developments, the goals behind them go back to the earliest days of the original James B. Lansing Sound Company. They represent the sum total of our research and development efforts in sound reproduction over the last half century.

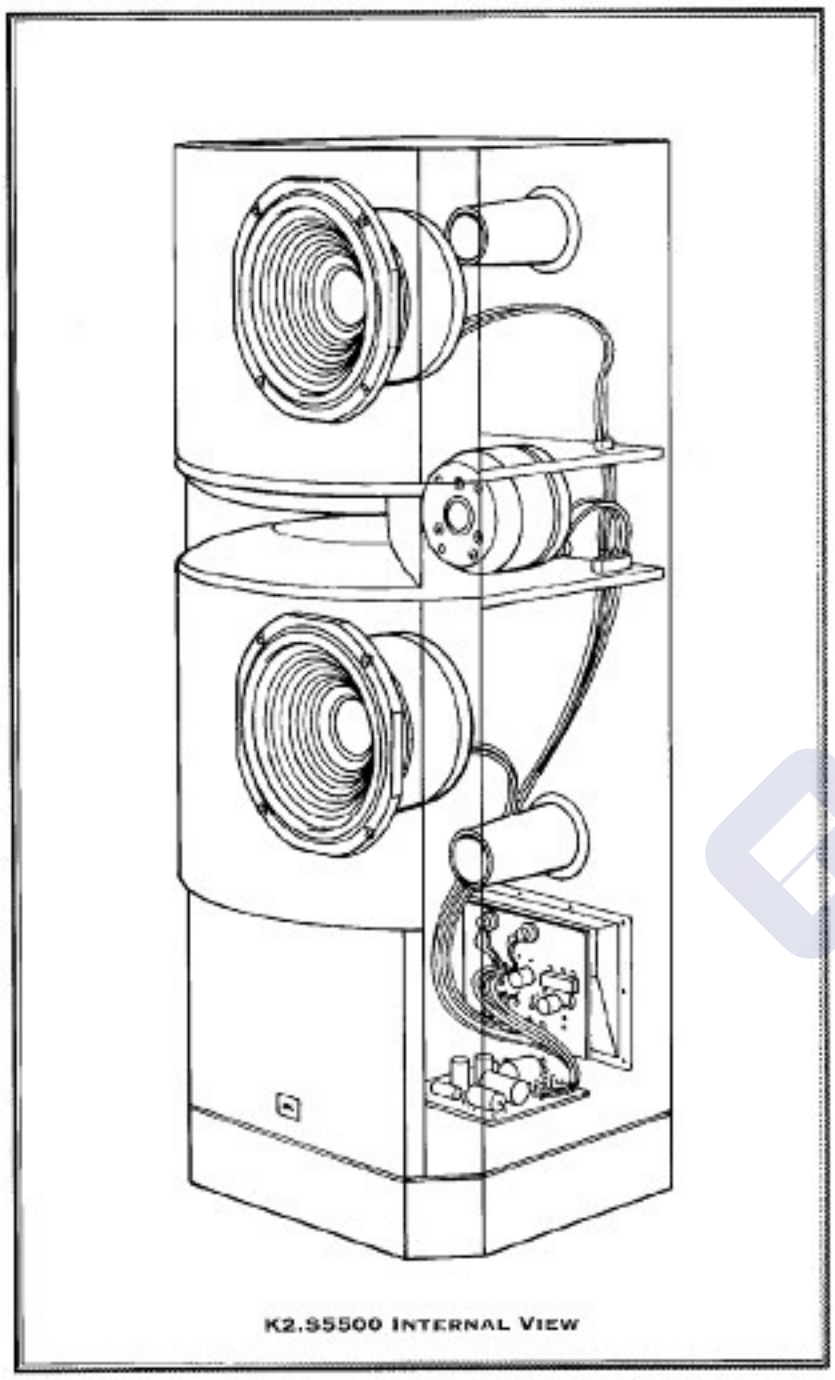
With Project K2, we have labored to create loudspeaker systems with no acoustical or electrical limitations whatsoever. But it is your listening pleasure that ultimately determines how successful we are in this endeavor. It is solely in the interest of ensuring a perfect listening experience that we ask you to faithfully follow the setup and operation procedures outlined in the Project K2 Owner's Reference.

This manual exists for several purposes. As your owner's manual, it contains all necessary background information and detailed instructions for setting up your Project K2 loudspeaker system, including selecting the correct location, speaker wire, wiring scheme and amplification, and connecting the system to associated electronics. This information will be found in Chapters 3 through 7. In addition, we have included a detailed description of your Project K2 loudspeakers (Chapter 2) so that you may become thoroughly acquainted with its unique design and technological features.

Although physically and materially imposing, the setup procedure of the Project K2 loudspeaker system is relatively simple. We urge you to read this manual thoroughly before you begin, and consult it frequently throughout the process. Considerations must be made in placing the speakers; their stature makes it imperative that you become familiar with the entire setup process in advance.

Also, we believe that the historical and technical information included will add immeasurably to your total enjoyment of the loudspeaker system. As loudspeakers, Project K2 systems are unparalleled in the field of sound reproduction. The story and principles behind Project K2 are an interesting, informative and fitting precursor to a lifetime of musical enjoyment.

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K2.S5500 Internal View

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Legacy

Historical development of JBL Project Loudspeakers

Of those few who seek perfection in sound reproduction, only a handful have actually achieved it. The price is always high. It is a rare occurrence indeed when an individual or group is able to triumph over the constraints of economic and technological reality just once.

At JBL, this has happened four times. In each case, the engineers were told to build the speaker system they had always wanted to build. Whatever resources were required would be made available. Thus began an ongoing investigation into new frontiers of sound reproduction, beginning mid-century in 1950 and continuing to the present day.

The products that have resulted from this venture are now known as the JBL Project loudspeakers. Each represents the absolute peak of every technological, material and engineering innovation available to the art and science of audio at that time, combined into a single system. For the convenience of music lovers, each has been given an easily-remembered name. They are Hartsfield, Paragon and Everest. The newest is K2.

When first introduced, the original Project K2 systems, models K2.S9500 and K2.S7500, shocked the audio world with their clarity, depth, visually stirring presence and obvious dedication to perfection in detail. Three years later, Project K2 has brought forth yet another equally impressive achievement, the K2.S5500. While less expensive than the earlier Project K2 models, this newest creation is imbued with the uncompromising commitment to perfection which has been the hallmark of all JBL Project loudspeakers.

Although differing in performance details and physical attributes, each of the Project loudspeakers has shared a common objective: to elevate sound reproduction to levels defined only by the limitations of existing materials and technology. And despite a spread of nearly forty years, all four Project loudspeakers have shared many common features—testimony to their foundation on the technology and manufacturing techniques upon which JBL was built.

Defining the Project Concept

The Hartsfield began a tradition at JBL that continues today. First, engineer a product as close to perfection as possible. When it

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reaches that level, that is the time to make it better.

In 1954, the Hartsfield was significant not in that it represented new technology, but rather a new level of the all-technical manufacturing approach pioneered by James B. Lansing some twenty years before it. Like its Project series successors, it was a high efficiency system incorporating compression driver technology; one combining the qualities of high output, low distortion, exceptional imaging and fatigue-free listening. Most importantly, it was the first consumer-available listening system to do so.

In this respect, the Project K2 models are the most advanced and sophisticated loudspeakers in the world today. Yet their technology is deeply rooted in over 40 years of tradition. JBL's president in 1954, William Thomas, described the Hartsfield as "...the speaker system we have always wanted to build...the finest components ever made available to serious listeners."

He went on to describe the process behind his creation: "Most people who own and appreciate fine sound reproduction equipment look forward to the day when they will be able to assemble a system — without limitation — in just exactly the way they think it should be done. Periodically a manufacturer gets this same feeling. The science of acoustics has provided us with basic principles —available to all—for achieving precision reproduction. It is only a matter of incorporating these methods into a system design, and then taking every bit of trouble necessary to build a system precisely to the design. It isn't easy, but that's the way it is done."

The Ranger-Paragon, JBL's second Project system, was the first serious attempt at a reflecting speaker system, and broke ground in the new concept of stereo imaging. Essentially two independent full-range speaker systems installed in a handsome curved cabinet nearly nine feet long, the Paragon's enclosure was treated as an extension of its transducers. In essence, the system had its own "built-in acoustics." In many respects the Paragon anticipated loudspeaker developments that would occur years—and even decades—later.

For nearly 30 years, the Paragon remained the most acoustically viable sound system for the home. Today, along with the Hartsfield, it is still the most sought-after speaker classic in the world.

In 1986, JBL introduced a new Project system that retained the Paragon's overall sense of musicality while upgrading its character by incorporating three decades of continuous development in every facet of its design. Its name reflected the pinnacle of achievement it represented: Project Everest.

For the first time, the rest of the sound reproduction chain—and not the loudspeaker or its transducers—would impose limits on overall system performance. Like the Paragon and Hartsfield, Project Everest was built around compression driver technology and addressed a more refined stereo image than was previously considered technically feasible.

Since Project Everest was introduced, sound recording technology has undergone a revolution of its own. Extremely demanding recorded signals are now the rule rather than the exception — the average source material used by the typical audio enthusiast today is superior to the best demonstration material of even just a few years ago. In overall dynamics and transient response, transducers are once again a potential weak link in the high-end audio reproduction chain.

It was in this environment that JBL set out to create its fourth project loudspeaker, Project K2, originally comprising the K2.S9500 and K2.S7500. As with Hartsfield, the puritan simplicity of a two-way system was considered the most promising design track. Advances in transducer design and low frequency alignment would make the construction of a two-way system of unprecedented physical and acoustical scale possible.

JBL engineers took the core components — the low and high frequency drivers — and optimized them by redesigning their magnetic structures, diaphragms and framework for greater linearity, dynamic capability and transient response.

For the high frequency device, a very complex phasing plug was developed to enable more output with less interference. Incorporating the largest titanium high frequency diaphragm ever made by JBL, the K2.S9500 and K2.S7500 are exceptionally smooth and fast, with very uniform response and virtually no coloration.

For the low frequency transducer, the extensive computer-aided engineering and design effort to develop the special port tuning employed in Project K2 low frequency modules resulted in a significant advance in the concept of state-of-the-art bass reproduction. Engineers had identified the commonly recognized advantages of a correctly designed vented, or reflex, system: namely, improved transient response, lower distortion and better control over design variables. The search to find the best possible balance of the various known tuning options led the development team to attempt to duplicate the filter response shape of the Bessel transformation. This alignment method would offer the best damping characteristics and provide extremely fast alignment, eliminating the typical "bass-reflex" sound of a ported system.

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Both drive units were built using materials and precision manufacturing techniques refined from renowned JBL professional sound systems, and both are augmented by the use of neodymium magnets. The controlled coverage high frequency horn produces a pattern 60 degrees horizontally and 30 degrees vertically, and keeps this bi-radial pattern over most of its operating range.

Like Project Everest, the Project K2 systems are built around compression driver technology developed as far as permitted by present limits of the art. Advanced two-way systems in unique modular configurations, Project K2 systems, like the Hartsfield, Paragon, and Everest before them, combine the benefits of stereo imaging with clarity and definition in a loudspeaker that places no discernible limitations on the rest of the audio system. High power handling capability results in no restrictions on the types of source material. Project K2 systems have very high input sensitivity; even a relatively small high-end amplifier can provide full dynamic range without compression.

Despite its power and sophistication, Project K2 is a marriage of tradition and technology. Its two-way system approach and component design is purist simplicity. At the same time, Project K2 reflects the design, engineering and manufacturing expertise — derived and refined through nearly six decades of experience—that are the exclusive province of one loudspeaker builder: JBL.

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PROJECT K2.S5500: BROADENING THE REACH OF PERFECTION

Like the Hartsfield, Project Everest, and the K2.S9500 before it, the K2.S5500 is a two-way system. But, unlike Hartsfield and Everest, K2.S9500 and K2.S5500 utilize a "vertical twin" arrangement. That is, they employ two bass drivers per enclosure, one above and one below the high frequency driver and horn. This arrangement results in a remarkably stable acoustic center to each system, which, in turn, results in a very solid and secure stereo image.

Both of the Project K2 vertical twins are systems of high sensitivity, utilizing neodymium magnet compression drivers mounted to constant directivity horns and bass drivers with very high-powered magnetic motors. Both incorporate energy conducting bases to trap unwanted resonances, uncompromising network components and internal wiring, and are executed with an attention to detail that truly set new standards for the loudspeaker industry.

Yet, as similar as these two K2 vertical twin systems are, there are also profound differences between them. First, there is a difference in design intent. The K2.S9500 has been designed as the absolute peak of the loudspeaker designer's art. Nothing was spared to make this project the finest of the fine. Among the technologies that make this model the unique creation that it is are its 356 mm (14 inch) bass drivers with 100 mm (4 inch) edgewound voice coils, vented-gap cooling, and neodymium magnetics, and a beautiful and stable acrylic horn mounted to its massive compression driver — also furnished with neodymium magnets and 100 mm (4 inch) edgewound voice coil driving the unique titanium diaphragm with JBL's exclusive diamond pattern surround. Its design, execution and performance are absolutely without limit, and its price leaves no doubt that it has achieved these lofty goals.

Hence, the development of the K2.S5500. For the first time, a JBL Project speaker has been developed that — while thoroughly steeped in the tradition of uncompromising excellence that graces every JBL Project design — moves ever so slightly toward greater affordability than did past Project systems. With the introduction of the K2.S5500, the power and beauty of K2, while still rare, can now be enjoyed by more enthusiasts than before — those who found the K2.S9500 so very desirable, yet