VIVID audio

Owner's Guide

V1p and V1w loudspeaker

Read these instructions that contain important information about the safe use, installation and maintenance of this loudspeaker.

- Unpack the loudspeaker following the instruction sheet attached to the shipping crate. The method is also described below. Check for damage. Keep potentially hazardous packaging (plastic bags, polystyrene etc.) out of reach of children.
- Dispose of packaging in compliance with current waste disposal requirements.
- This loudspeaker must only be used for the purpose for which it is intended.
- The manufacturer declines all responsibility for damage resulting from improper, incorrect or negligent use.
- Repairs must only be carried out by a service centre authorised by the manufacturer.
- Failure to comply with the above requirement will jeopardise the safe use of the loudspeaker and associated guarantees (if applicable).

IMPORTANT NOTE

THE SILVER ALUMINIUM DOMED/CONED DRIVE UNITS ARE EXTREMELY SENSITIVE. THEY MUST NEVER BE SUBJECTED TO PROBING FINGERS OR OTHER SHARP OBJECTS!
IF SO, CERTAIN DAMAGE WILL RESULT AND A REPLACEMENT DRIVER WILL HAVE TO BE FITTED. THIS REPLACEMENT WILL NOT BE PERFORMED UNDER GUARANTEE CONDITIONS.

PLEASE READ ALL PAGES PRIOR TO INSTALLATION

INTRODUCTION

Few owners of new Hi Fi equipment read the instruction manual.
Vivid Audio has decided not to provide a formal instruction manual or user guide on this product.

Instead, we have designed a concise informative piece, which should hold your interest whilst browsing through it. While doing so, you will learn about the do's and don'ts of this fine piece of equipment.

We at Vivid Audio are enthusiasts. We enjoy what we do - and are good at it. Although Vivid Audio is but a few years old, we have revolutionised perceptions on the performance of a good loudspeaker. We believe in sound engineering design and have a skilled crew of engineers and design professionals on board looking after all aspects of our products.

UNPACKING

Lay the sealed product on its back as indicated by the arrows on the side of the box.
Use a power driver or Phillips cross-head screwdriver to remove the screws securing the top wooden cover of the crate. Remove the cover and place safely aside.
Remove the accessories from the crate before proceeding.
Remove the loudspeakers from the crate by lifting them from the lower section of the crate. CAREFULLY remove the protective materials, paying special attention not to damage the drivers in the process (see warning).

Reassemble the packaging and save for future use.

Stand mounting (V1p only)

The loudspeaker will benefit enormously from the use of approximately 400mm high sturdy loudspeaker stands. It is recommended to spike to loudspeaker stands to the floor and to compliantly bond the loudspeaker base to the top of the stand by using the re-usable flexible adhesive provided.

Wall mounting (V1w only)

In the case of the wall mount version, a wall mount kit is provided and two variants are available, catering for both dry walling and brick and mortar type walling.
For dry walling the circular securing plate is provided with two mounting holes for the two 8mm coach screws (provided). Once the plate is firmly secured into a suitable sturdy stud, the mounting stalk can be secured in position and nipped up with a 13mm spanner (not provided). The loudspeaker is then fitted over the cut-out knuckle, positioned and tightened up by hand.
PLEASE ENSURE THAT THE COACH SCREWS ARE FIRMLY LOCATED INTO WOODEN STUD AND DO NOT MOUNT THE LOUDSPEAKER UNTIL THE SECURITY OF THIS MOUNTING HAS BEEN APPROVED.
For the masonry/brick mounting, the plate and coach screws are not used but the M8 Rawl type bolt is utilised. By using a suitable 14mm drill bit, bore the hole to take the Rawl bolt.

The mounting stalk is screwed directly onto the exposed m8 thread and is used to secure the whole sub assembly to the wall (use a 13mm spanner not provided).

In order to obtain the maximum benefit from your purchase, it is important to know something about the acoustics of the room in which you intend to install the loudspeakers. No matter how well the product performs in a good environment, the performance will be adversely influenced if care is not taken at this stage. Extensive information of room acoustics is available to you on our web site www.vividaudio.com

This procedure applies to V1p due to physical constraints on the use of V1w.

A précis of this guideline follows:

MAKE SURE YOUR AMPLIFIER IS TURNED OFF!!

All connections/reconnections must be made when the amplifier is switched off.

Start with the two main front speakers. Position the left front speaker one fifth of the width of the room from the left hand wall and one third of the distance from the back wall. Connect the low frequency (LF) terminals of the loudspeaker ONLY (facing the back of the loudspeaker, the LF terminals are on your left). We suggest you now load some well known music with predictable lower octave musical content into the CD player. A listener should be seated in the listening position and listen to subtle changes in bass character and cleanliness whilst the speaker is moved in the longitudinal plane towards and away from the rear wall of the room. A point will be reached where the bass sounds clean and believable. Mark this distance from the rear wall. Do the same in the lateral place about the position just realised. An improved result should be obtained. DEAD EASY! You have found the optimal position for the low frequency portion of the audio band in your room.
Place the right hand speaker in the mirror position on the right hand side of the room. From the seated position you should be equidistant from each speaker. We suggest you toe the speakers in towards the listening position so that the visually extended centres of the tweeters cross some way in front of you in the listening position. This may be re-adjusted once the loudspeakers are settled in.

Use a well-known piece of music. At this stage you should mark and note the position you have found. After listening to this track and a few others you may find that moving the speaker forward (towards the listening position), improves the sound stage. This is a personal preference and is worth spending time on.

MAKE SURE YOUR AMPLIFIER IS TURNED OFF!!

Connect the right red terminal of your amplifier to the red terminals of your right hand loudspeaker. The black terminal of your amplifier is connected to your right hand loudspeaker's black terminals

The left hand loudspeaker is connected in exactly the same manner as the right hand one.

If you are not sure of the method please obtain help from your dealer.

MAINTENANCE

THERE ARE NO USER SERVICEABLE PARTS CONTAINED IN THIS LOUDSPEAKER SYSTEM.

THE DRIVE UNITS ARE VERY SENSITIVE AND MUST NEVER BE SUBJECTED TO MISGUIDED FINGERS! IF SO, CERTAIN DAMAGE WILL RESULT AND A REPLACEMENT DRIVER WILL HAVE TO BE FITTED. THIS REPLACEMENT IS NEVER CARRIED OUT UNDER GUARANTEE CONDITIONS.

Please refer all problems to your dealer who has been trained to deal with any queries you may have regarding this product.

CLEANING

Use only the soft moistened lint free cloth (provided) to clean this product.

SERVICE NOTES

Service under guarantee is only provided upon presentation of reasonable evidence (e.g. completed guarantee card or purchase receipts) indicating -the date of the claim is within the guarantee period.
The guarantee is not valid if the defect is due to accidental damage (including during transport), misuse or neglect and in case of alterations or repair carried out by unauthorised persons.
The guarantee may not apply if the product requires modification or adaptation to enable it to operate in any country other than the country for which it was designed, manufactured, approved and/or authorised or if any damage results from these modifications.
Service (during and after guarantee) is available in all countries where this product is officially distributed by Vivid Audio. In countries where Vivid Audio does not distribute the product, the local Vivid Audio Agent or distributor organisation will provide service although there may be a delay if the appropriate spare parts and technical manual are not readily available.
These statements do not affect your statutory rights as a consumer.
In the event of difficulty please contact the Vivid Audio via our web site www.vividaudio.com

Guarantee

This Vivid Audio product is guaranteed against failure arising from faulty workmanship and materials for a period of 2 years from date of purchase. An extended guarantee may be negotiated by registering your product on our web site www.vividaudio.com. These guarantees are not transferable.

This guarantee is only valid in the country of original purchase.

All claims under this guarantee must be made to the distributor in the buyer's country by returning the unit securely packed in the original crate and packaging, with all accessories, postage/freight pre-paid and insured. The unit will be repaired or replaced at no charge for parts and labour.
This guarantee remains valid only if the serial number of the unit has not been defaced or removed and if repairs are performed only by authorised Vivid Audio dealers or distributors.
It does not cover damage due to misuse, accident or neglect. The distributor or manufacturer, (Vivid Audio (PTY) Ltd, South Africa), retains the exclusive right to make such judgement on the basis of inspection. The retailer, distributor and manufacturer of this Vivid Audio Loudspeaker shall not be liable for consequential damage arising from the use, misuse or failure of this product, including injuries to persons or property.
To qualify for this guarantee, the enclosed guarantee registration card must be filled in and returned to the manufacturer within 14 days of purchase, OR the product may be registered via Vivid Audio's web site, at www.vividaudio.com.

SPECIFICATION VIVID AUDIO V1

Configuration	2 way vented cabinet
Cabinet material	Complex loaded carbon fibre filled polymer
Finish	High gloss automotive
Drive units	26mm metal dome hf unit
	158mm metal coned lf unit
Sensitivity	89dB/1w @1m
Nominal Impedance (Ω)	8
Frequency range (hz)	- 6dB points 42 – 42,000
Frequency response (hz)	45 – 39,000 +/- 2dB on reference axis
Harmonic distortion (2nd and 3 rd harmonics)	< .0.5% over frequency range
Cross over frequencies (hz)	3000
Power handling (music program) watts rms	150
V1p Loudspeaker dimensions (H, W, D) mm	635, 255, 195
V1w Loudspeaker dimensions (H, W, D) mm	595, 255, 195 (+ 88mm),
V1p Net mass (kg)	15
V1w Net mass (kg)	12
V1p Shipping dimensions pair (H, W, D) mm	750, 640, 360
V1w Shipping dimensions pair (H, W, D) mm	750, 640, 320
V1p Shipping mass pair (kg)	42
V1w Shipping mass pair (kg)	37

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INSTALLATION NOTES: *DATE:……..*

Some early loudspeaker history

1874 - Ernst W. Siemens was the first to describe the "dynamic" or moving-coil transducer, with a circular coil of wire in a magnetic field and supported so that it could move axially. He filed his U. S. patent application for a "magneto-electric apparatus" for "obtaining the mechanical movement of an electrical coil from electrical currents transmitted through it" on Jan. 20, 1874, and was granted patent No. 149,797 Apr. 14, 1874. However, he did not use his device for audible transmission, as did Alexander G. Bell who patented the telephone in 1876. After Bell's patent was granted, Siemens applied for German patent No. 2355, filed Dec. 14, 1877, for a nonmagnetic parchment diaphragm as the sound radiator of a moving-coil transducer. The diaphragm could take the form of a cone, with an exponentially flaring "morning glory" trumpet form. This is the first patent for the loudspeaker horn that would be used on most phonographs players in the acoustic era. His German patent was granted July 30, 1878 and his British patent No. 4685 was granted Feb. 1, 1878.

1898 - Oliver Lodge filed for British patent No. 9712 on Apr. 27, 1898, for an improved loudspeaker with nonmagnetic spacers to keep the air gap between the inner and outer poles of a moving coil transducer. This was the same year he applied for a patent on his famous radio tuner. A model of his loudspeaker is in the British Science Museum in South Kensington, and a photo was published in *Wireless World* Dec. 21, 1927. This improvement was later claimed by Pridham and Jensen in the Magnavox application for patent No. 1,448,279 filed Apr. 28, 1920, and granted Mar. 13, 1923.

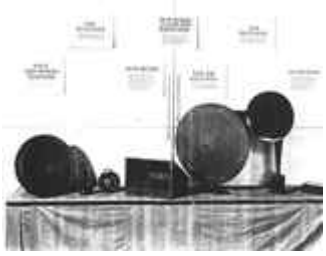
Oliver Lodge
from Das Fotoarchiv

1901 - John Stroh first described the conical paper diaphragm that terminated at the rim of the speaker in a section that was flat except for corrugations, filed for the British patent No. 3393 on Feb. 16, 1901, granted Dec. 14, 1901.

1908 - Anton Pollak improved the moving-coil loudspeaker with a voice-coil centering spider, filed for U.S. patent No. 939,625 on Aug. 7, 1908, granted Nov. 9, 1909.

1911 - Edwin S. Pridham and Peter L. Jensen in Napa, California, invented a moving-coil loudspeaker they called the "Magnavox" that was used by Woodrow Wilson in San Diego in 1919.

1915 - Harold Arnold began program at Bell Labs to improve phonographic sound recording. The first priority was the electronic amplifier using the new vacuum tube, second was the microphone, and third was the loudspeaker that would improve the "balanced armature" units developed for public address. After WWI, J. P. Maxfield led this project that produced E. C. Wente's moving coil speaker by 1925, the Orthophonic phonographic player by 1925, and Vitaphone talking motion pictures by 1926.



early Bell loudspeakers

1918 - Henry Egerton on 1918/01/08 filed patent for balanced-armature loudspeaker, used in the Bell Labs No. 540AW speakers developed by N. H. Ricker Oct. 6, 1922, that became the 540 commercial speaker by 1924; was based on the balanced armature telephone patent of Thomas Watson granted Oct. 24, 1882, similar to devices also developed by Siemens and Frank Capps.

1921 - The Phonetron based on patent No. 1,847,935 filed Apr. 23, 1921, by C. L. Farrand, was the first coil-driven direct-radiator loudspeaker to be sold in the U.S. and was well-received, competing with the horns used by table radios

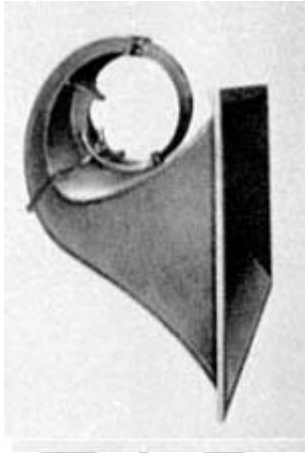
1925 Grebe radio receiver and 1924 Western Electric 540 speaker (NMAH)

1923 - The Thorophone was a gooseneck loudspeaker with a voice-coil driver

1925 - The research paper of Chester W. Rice and Edward W. Kellogg at General Electric was important in establishing the basic principle of the direct-radiator loudspeaker with a small coil-driven mass-controlled diaphragm in a baffle with a broad midfrequency range of uniform response. Edward Wente at Bell Labs had independently discovered this same principle, filed patent No. 1,812,389 Apr. 1, 1925, granted June 30, 1931. The Rice-Kellogg paper also published an amplifier design that was important in boosting the power transmitted to loudspeakers. In 1926, RCA used this design in the Radiola line of a.c. powered radios.

1925 - Victor Orthophonic acoustic phonograph player had a folded exponential horn that was later used as model for the Klipsch speaker of the hi-fi era. Within a year, the Orthophonic faced competition from all-electric phonographs with an electromechanical pickup, vacuum-tube amplifier, and moving-coil loudspeaker, such as the Brunswick Panatrope sold by the Brunswick-Balke-Collender Company.

1926 - Vitaphone sound system for motion pictures used a new speaker developed at Bell Labs. Wente and Thuras designed the Western Electric 555-W speaker driver that was coupled with a horn having a 1-in. throat and a 40-sq. ft. mouth; it was capable of 100-5000 hz freq. range with an efficiency of 25% (compared to 1% today) needed due to low amp power of 10 watts. The power amps were 205-D. Older loudspeakers were balanced armature type, but the newer 555-W speakers of the Vitaphone were moving coil type.



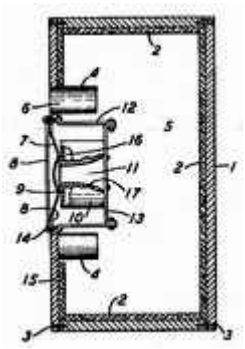
Vitaphone 555-W, from AT&T Archives

1928 - Herman J. Fanger filed patent No. 1,895,071 on Sep. 25, 1928, granted Jan. 24, 1933, that described what came to be known as the coaxial speaker, composed of a small high frequency horn with its own diaphragm nested inside or in front of a large cone loudspeaker, based on the variable-area principle that made the center cone light and stiff for high frequencies and the outer cone flexible and highly damped for lower frequencies.

1929 - E. W. Kellogg filed patent No. 1,983,377 on September 17, 1929, granted December 4, 1934, that described an electrostatic speaker composed of many small sections able to radiate sound with out magnets or cones or baffles. This patent, as well as the 1932 British patents of Hans Vogt, influenced Peter Walker to build the Quad ESL flat panel speaker in 1957.

1929 - J. D. Seabert of Westinghouse developed a horn-type loudspeaker that directed the sounds of human speech toward the audience better than cone speakers that were intended for the over-all sound including music to fill the entire theatre. These "directional baffle" horns had an opening 3 ft. by 4 ft. and were different from small-throat horns.

1930 - Albert L. Thuras filed patent No. 1,869,178 on Aug. 15, 1930, granted July 26, 1932, for the bass-reflex principle while working at Bell Labs. Early cabinets used a passive baffle to direct sound to the front, allowing the back of the cabinet to be open for the low sounds. The bass-reflex enclosure kept the low-frequency sounds from being lost from the rear of the diaphragm.



Thuras bass-reflex patent

1931 - Bell Labs developed the two-way loudspeaker, called "divided range" for the demonstration by H. A. Frederick in December of vertically cut records. The high frequencies were reproduced by a small horn with a frequency response of 3000-13,000 hz, and the low frequencies by a 12-inch dynamic cone direct-radiator unit with a frequency response within 5db from 50-10,000 hz. By 1933, a triple-range speaker had been developed for the Constitution Hall demo in April, adding Western Electric No. 555 driver units as the mid-range speaker. For the low frequency range 40-300 hz, a large moving coil-driven cone diaphragm in a large baffle expanding from a 12-in throat to a 60-inch mouth over a total length of 10 ft. This 3-way system was introduced in motion picture theatres as "Wide Range" reproduction.

1932 - RCA demonstrated a dual-range speaker of its own design for theatres, using three 6-inch cone diaphragms with aluminium voice coils in divergent directions, with a response of 125-8000 hz, and 10-ft. horns 40-125 hz.

1933 - "Progress was such that a demonstration of the new system - called "stereophonic" because of its ability to give a spatial sense corresponding to stereoscopic vision - was given before the National Academy of Sciences and many invited guests at Constitution Hall, Washington in the spring of 1933. Transmission was over wire lines from the Academy of Music in Philadelphia and three channels were used with microphones respectively at left, centre and right of the orchestra stage and loud speakers in similar positions in Constitution Hall." This transmission of music "was carried out with special loud speakers developed for the purpose by Dr. Wente and the late A. L. Thuras. The objectives in the design of these loudspeakers were uniform response over the whole tonal range of the orchestra, an enhanced sound power output capacity without noticeable non-linear distortion and uniform distribution of the emitted sound at all frequencies throughout a wide solid angle. For the receiving unit and the multicellular horn which were developed for this demonstration, Dr. Wente, jointly with the Bell Telephone Laboratories, was awarded a gold plaque by the Academy of Motion Picture Arts and Sciences in 1936." (Bell Labs, 1953)

Thuras theater speaker 1933, from AT&T Archives

1935 - Douglas Shearer and John Hilliard at MGM developed a standard theatre speaker system, starting with the Loews 5000-seat Capitol Theatre on Broadway. James Lansing and Dr. John F. Blackburn of Cal Tech designed a 2-way speaker system; the high frequency driver had a 3-inch aluminium diaphragm and throat size of 1.4 inches; the low frequency baffled cone unit was 15 inches. ERPI provided speakers from Fletcher's hi-fi experimental equipment to help design the speakers. The low frequency horn used four 15-in. Lansing cone drivers and Lansing 284 drivers for multicell horns of different sizes. The system was installed in 12 theatres for the opening of "Romeo and Juliet" with Norma Shearer, sister of Douglas,

then installed in all Loews Theatres, then became the standard established by the Academy.

Aztec A-7 Voice of the Theatre, from *Audio,* Dec. 1961

1940 - Paul W. Klipsch filed patent No. 2,310,243 on Feb. 5, 1940, granted Feb. 9, 1943, for the corner horn speaker.

1941 - Altec Lansing Corp. was formed when Altec bought Lansing; Altec Service Corp. (from "all technical") had been formed in 1938 by M. Conroe and George Carrington to manage ERPI installations after ERPI was dissolved. John Hilliard worked at Altec Lansing in 1943 on magnetic airborne sub detection and in 1945 put on the market the 2-way "Voice of the Theater" speaker system with improved horns and magnet drivers. See Lansing Heritage for images and a detailed history.


Avery Fisher with 9-tube amp and coaxial speaker, from *Fortune,* Oct. 1946

1949 - W. E. Kock and F. K. Harvey at Bell Labs developed the acoustical lens, and reported findings in 1949 JAES. These lenses are used in James B. Lansing theater speakers and home hi-fi speakers

1953 - Arthur Janszen was granted patent No. 2,631,196 on March 10, 1953, for an electrostatic high-frequency speaker

1954 - Acoustic Research introduced the small AR-1 bookshelf loudspeaker that used the acoustic suspension principle developed by company co-founder Edgar Villchur. This was soon followed by the $89 AR-2 and by the AR-3 with improved domed tweeters in 1958.


Walker's ESL, from Quad

1957 - Quad ESL marketed as the first full-range electrostatic loudspeaker, designed by Peter Walker and David Williamson, based on Edward W. Kellogg's patent No. 1,983,377 filed September 17, 1929 and granted December 4, 1934.

1974 - *Earthquake* premiered Nov. 15 in the Chinese Theatre in Hollywood with Universal Picture's Sensurround process developed by W. O. Watson and Richard Stumpf at Universal. Four large low-frequency horns were located behind the screen, two in each corner. The Model W horn in each corner was 8 ft. long, 4 ft. wide, 4 ft. high. The Model C horn in each corner was a modular unit 1 ft. wide and 5 ft. high. Two additional horns were located on a platform in the rear of the theatre. Each horn was driven by a 1000-watt amplifier controlled by inaudible tones on a special optical control track along with the normal 4-track magnetic soundtrack of the 35mm Panavision filmstrip.

Steven E. Schoenherr

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