

TANNOY[®]



The Name for Loudspeakers



Westminster

COMPOUND HORN LOADED LOUDSPEAKER SYSTEM

The Tannoy Westminster presents the latest in Dual Concentric technology combined with traditional standards of construction and finish, and is a worthy successor to the renowned Tannoy Autograph. A 15" Dual Concentric drive unit is coupled to a straight axis horn at the front and to a long folded horn at the rear.

The advantages of the system are as follows: Low frequencies, i.e. below 300Hz are reproduced by a much larger radiating wavefront than with conventional direct radiating loudspeakers. The quality of low frequencies as perceived by a listener are more realistic since low frequency sound radiations in musical instruments, etc. are also

generated by large radiating wavefronts. For example, timpani, contra bass, organ pipes (32 ft, 16 ft) producing low frequencies naturally, all have a basic wavefront generating area much larger than even a 15 inch (380 mm) direct radiating loudspeaker system. The radiating area of the rear folded horn in the Westminster loudspeaker is over

2.5 times that of a 15 inch loudspeaker and therefore much more comparable to the original instruments. The quality of low frequency reproduction is therefore improved. The efficiency of the system used in the Westminster is approximately 8dB greater than conventional direct radiating systems using a 15 inch drive unit. A fundamental consequence of the increase in efficiency is a lower distortion content when operated at normal domestic sound levels. A further consequence of high efficiency is of course that the power amplifier is under much less stress when reproducing high peak transient sound levels typical of wide dynamic range digital recordings. The air load matching between drive unit and listening environment is improved by the use of compound horn techniques, therefore the drive unit is much

less highly stressed in reproducing peak transient levels. The thermal dissipation in the voice coil is reduced resulting in a more linear conversion of quiet and loud passages, i.e. the true dynamic range of the programme material is retained.

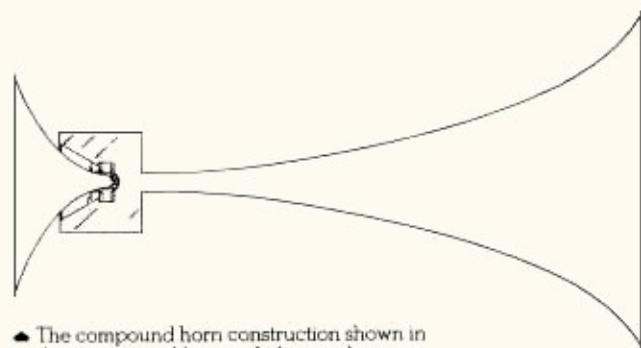
Using conventional separate bass and treble units with a rear folded horn would result in an extremely large and cumbersome cabinet. The Tannoy Dual Concentric drive unit has separate high and low frequency drivers within a common chassis. Integration of the drive unit and horn loading systems with the cabinet is therefore more effective and the physical size of the cabinet reduced. In the Dual Concentric drive unit a single chassis carries both a direct radiating low frequency driver and, mounted behind and on the same axis, an HF compression driver.

When used in the Westminster with a time compensated crossover network, a single point sound source is provided for frequencies from which the listener can re-create stereo images. The result is a much clearer, more accurate stereophonic effect. Lower frequencies which do not affect stereo imagery are reproduced through the rear folded horn.

The resulting sound quality available from the Westminster produces a sense of reality and presence which is simply not provided by any more conventional loudspeaker system.

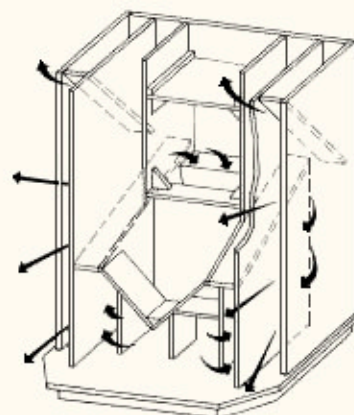
The finishing touch to this fine loudspeaker is provided by the superbly finished cabinet, combining solid walnut mouldings and real walnut veneers with discrete oatmeal grille cloth.

The centre grille is removable with a key for access to the HF response controls.



▲ The compound horn construction shown in diagrammatic form with the rear horn straightened out for clarity.

● Perspective view of Westminster cabinet showing the internal construction of the rear horn. Arrows show the direction of radiation from the drive units.



TECHNICAL SPECIFICATIONS

Power rating	120W RMS, 500W peak
Amp rating	50 to 200W RMS per channel. 8Ω
Sensitivity	96dB for 1 watt at 1 metre
Maximum SPL	117dB at 1m for 120W 123dB at 1m for 500W peak
Impedance	8Ω Nom/5.5Ω Min.
Frequency vs SPL	18Hz - 20kHz
Phase response	80Hz - 10kHz ± 12°
Time compensation	< ± 10µSecs, 80Hz - 10kHz
Dispersion	60° incl. ang. hor. + vert. at -6dB at 10kHz
Crossover frequencies	1kHz electrical, 300Hz acoustical
Crossover control	± 6dB over 1kHz to 20kHz shelving +3dB to -6dB per octave over 5kHz to 20kHz slope
Crossover type	Passive, low loss, time comp. type 1027
Driver type	Dual Concentric, high compliance type 3839/W
Distortion	< 2% third harm. at ½ power, 80Hz - 20kHz for 90dB SPL, < 0.3% third harm., 50Hz - 20kHz for 110dB SPL, < 1.4% third harm., 80Hz - 20kHz for 113dB SPL, < 3.0% third harm., 80Hz - 20kHz

Enclosure type	Compound horn
Rear folded horn	Total length = 3m (10 feet) Throat area = 0.03m ² (49 sq in) Mouth area = 0.4m ² (620 sq in) Flare constant = 0.85 (exponential)
Front horn	Total length = 0.15m (6 in) Throat area = 0.075m ² (116 sq in) Mouth area = 0.31m ² (480 sq in) Flare constant = 9.7
Enclosure volume	521 litres
Enclosure dimensions	1300H × 1030W × 631D mm
Enclosure weight	115 kg complete
Packed dimensions	1500H × 1100W × 720D mm
Packed weight	140 kg
Enclosure material	Solid walnut with 25mm particle board
Grille material	Specially woven cloth over wood frame with lock and key fixing

LOW FREQUENCY DIRECT RADIATOR

Nominal diameter	380mm, 15 inch
Voice coil diameter	52mm, 2 inch
Free air resonance	22Hz
Total Q	0.18

HIGH FREQUENCY DIRECT RADIATOR

Diaphragm diameter	51mm, 2 inch
Voice coil diameter	51mm, 2 inch
Horn lower cut off freq	250Hz

Due to our policy of continuous improvement, we reserve the right to change specifications without notice.

All Tannoy products are designed and manufactured in Great Britain by:

TANNOY LIMITED
Rosehall Industrial Estate, Coatbridge,
Strathclyde, Scotland ML5 4TF.
Telephone: Coatbridge (0236) 20199 Telex 778621