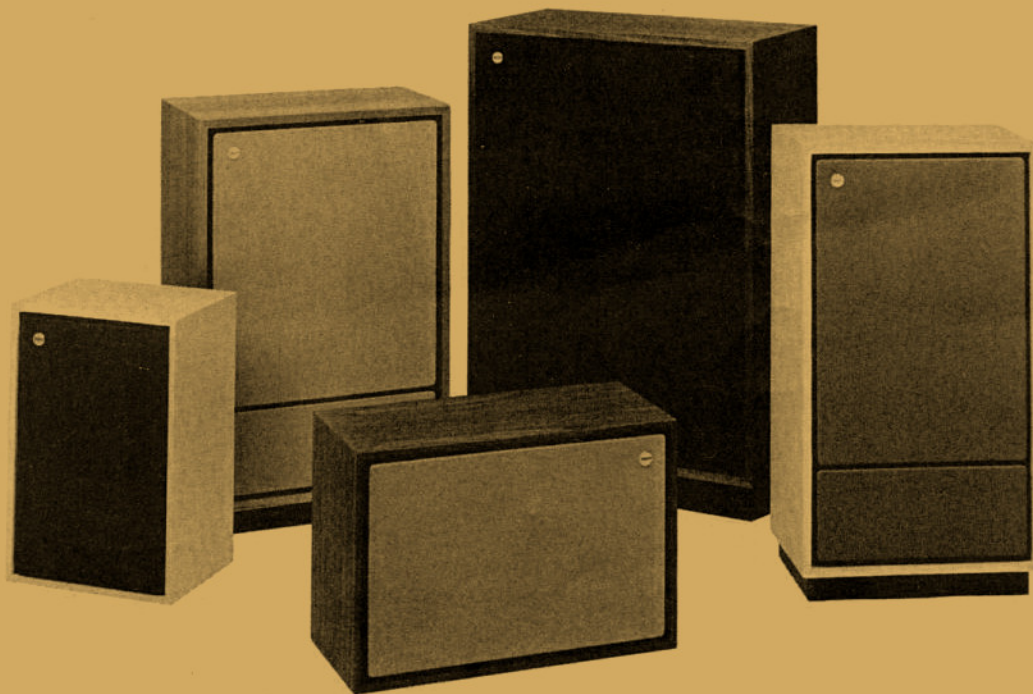


TANNOY®

Integrated
Loudspeaker
Systems



Technical
Manual for
Arden
Berkeley
Cheviot
Devon
Eaton

Tannoy Integrated Loudspeaker Systems

Welcome to the worldwide family of Tannoy loudspeaker owners. You have purchased one of the finest music reproduction systems ever devised and may, therefore, expect to receive many years of listening pleasure. It is suggested that you spend the few moments necessary to review this manual in order that the full potential of your Tannoy system may be realised.

Each of the loudspeakers in the range – the Arden, Berkeley, Cheviot, Devon and Eaton – incorporates a version of the famous HPD Integrated Drive System. These unique transducers are capable of reproducing, with low distortion, the entire audio spectrum at the high sound levels required in professional applications and in the most ambitious home installations.

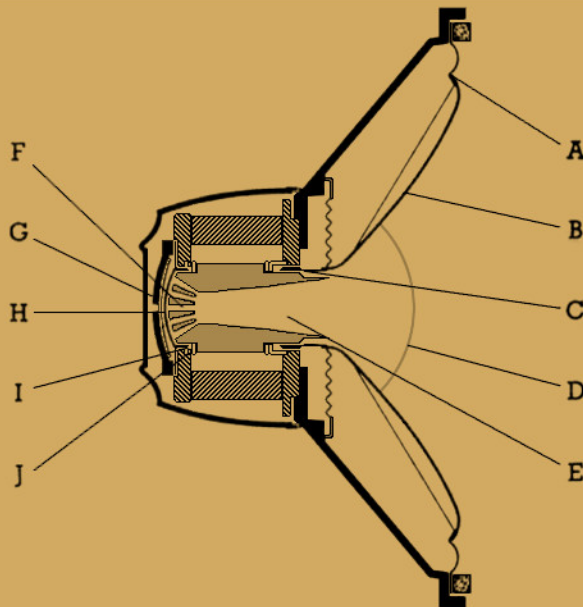
Components

HPD Integrated Drive System

This consists of a direct radiator bass unit and a high-frequency compression driver, both located concentrically within the same frame and magnet assembly.

The low-frequency section is a long excursion, low resonance loudspeaker having a 2" high temperature voice coil. The unique Girdacoustic reinforced cone, a feature of the HPD 385A and HPD 315A, ensures true piston action and smooth performance extending well into the midrange region. The HPD 295A is treated with a damping compound on the rear surface of the cone, since its smaller size precludes the use of the reinforcing technique.

High frequencies are reproduced by a horn-loaded compression driver utilizing a duralumin diaphragm and 2" diameter aluminium voice coil.



A Rolled surround for stability in low bass response.

B Unique ribbing virtually eliminates cone break-up ensuring smooth response and extraordinary high power capacity.

C High temperature voice coil.

D Dustproof, acoustically transparent sealing dome.

E Concentric HF horn (completed by curved LF cone).

F Phase-compensating multiple throat for extended and smooth HF response.

G Acoustic balance cavity for reduced distortion.

H Precision contoured high frequency diaphragm.

I Aluminium voice coil conductor for high power capacity and superb HF response.

J Exclusive magnetic shunt for increased LF flux.

Crossover Network

The crossover network receives an electrical signal containing the full frequency spectrum from the amplifier and divides it between the low frequency and high frequency sections of the loudspeaker system. Tannoy networks are of the highest quality : capacitors are non-polarized, solid dielectric types for low losses and close tolerances ; resistors and inductors are very generously rated ; and all components are assembled on a fibreglass printed circuit board for maximum reliability.

Enclosures

All enclosures are solidly constructed from high-density compressed wood (also known as 'particle board' or 'chipboard') and are lined with acoustic foam to absorb

reflections and eliminate standing waves. The exposed natural wood grain surfaces of each enclosure are genuine American Black Walnut, European Ash or Burmese Teak veneers. The Walnut enclosures are carefully hand rubbed with oil and wax to show the rich depth of the wood, while the Ash and Teak models are coated with the finest clear Melamine lacquers which conceal none of the delicate grain structures but, at the same time, afford excellent protection. The Arden, Berkeley, and Cheviot are braced internally to reduce the spurious resonances which can occur in large panel areas. All enclosures are ported to provide low frequency loading, thereby reducing distortion and extending bass response.

Any Integrated Loudspeaker System can safely be driven by an amplifier with a power rating equal to the power handling capacity of that system ,ie ; 85 Watts RMS for the Arden and Berkeley, 60 Watts RMS for the Cheviot and Devon, and 50 Watts RMS for

the Eaton. A more powerful amplifier can be used with a system if precautions are taken to avoid conditions such as switch-on surges and amplifier clipping which may result in momentary power peaks greatly in excess of the specified ratings.

Amplifier Power

Connections to Amplifier

A loudspeaker should be connected to the amplifier with suitable low-resistance twin-cable. Ordinary lighting flex is suitable for distances of up to 50 feet – for greater distances heavier gauge wire is recommended.



Connection to a system is by two spring-loaded terminals at the rear of the enclosure ;

Important

Care must be taken to ensure that the amplifier is switched off when connecting or disconnecting the loudspeakers. Failure to

do so may seriously damage them and invalidate the Warranty.

Phasing

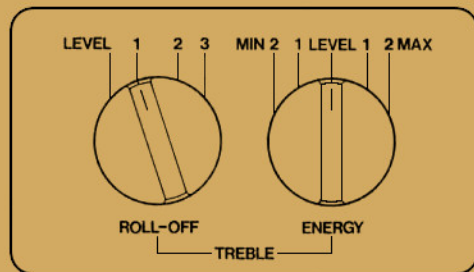
When using two loudspeakers for stereo it is essential that consistent polarity is observed for both channels. This can be checked aurally by placing them side-by-side and listening to a monophonic signal with good bass content played through both left and right channels. If the phasing is correct the bass will be full and rich, whereas if it is incorrect there will be very little bass due to cancellation effects. Incorrect phasing can be rectified by reversing the connecting leads on ONE of the systems (at either the amplifier or loudspeaker terminals – but not both).

System Location

A pair of loudspeakers should be placed 7-14 feet (2-4 metres) apart so that the main listening position and the two loudspeakers form a triangle with approximately equal sides. To provide optimum stereo imaging

over a fairly wide area, they should be angled slightly inwards so that their axes intersect at a point a few feet in front of the listening position.

Each system is provided with two controls located on the front baffle. The grilles are fixed to the enclosures by plastic dowels and can be easily removed to facilitate system adjustment. Labelled 'Roll-off' and 'Energy', these controls can be used to compensate for the acoustic characteristics of the listening room and should be adjusted with amplifier controls in the 'flat' or uncompensated position. Each loudspeaker system should be adjusted individually. This is most easily done by rotating the amplifier Balance control to select the desired loudspeaker.

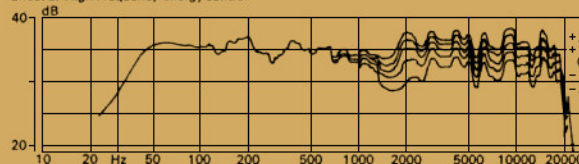


The 'Energy' control has five positions and enables the output of the high-frequency driver to be increased or decreased over its entire range from 1 KHz to 20 KHz. The 'Roll-

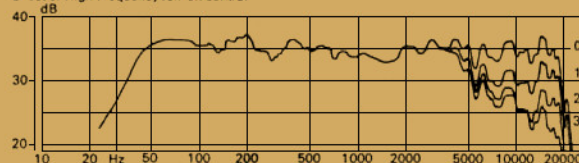
Occasional dusting with a soft cloth will maintain the finish of the enclosure ; stains may be removed by means of a damp cloth. Ordinary furniture polishes should not be

Every Tannoy Loudspeaker System is guaranteed against any manufacturing defect in parts or workmanship for a period of five years. This warranty does not cover

Effect of High Frequency energy control



Effect of High Frequency roll-off control



off' control affects only the extreme high frequencies ,ie; those above 5 KHz.

The flattest response will be obtained with both controls set at the 'Level' position, which should be used for initial listening tests. If the overall high frequency sound quality seems too prominent, the -1 or -2 positions for the 'Energy' control should be tried. If the sound is subdued, +1 or +2 will be preferred. Once the 'Energy' setting has been established, the 'Roll-off' control can be adjusted to reduce extreme high-frequency content if necessary.

used, although the Walnut surface may be treated with wax specially formulated for use on oiled finishes.

any defects or failures caused by abuse or improper operation ; such determination to be made at the sole discretion of Tannoy on the basis of physical inspection.

System Adjustment

Care of Wood Finishes

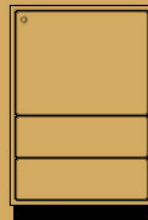
Warranty

Tannoy Integrated Loudspeaker Systems

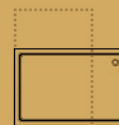
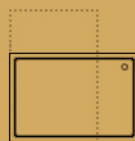
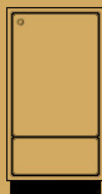
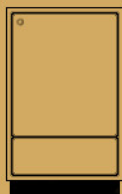
Specifications

Arden

Drive System	HPD 385A
Power Handling Capacity in Watts continuous programme	85
Nominal Impedance in ohms	8
Frequency Response in Hz \pm 4dB	30-20,000
Sensitivity : input Watts at 400 Hz required to produce 96dB at 1 metre in an anechoic environment	3
Crossover Frequency at 12dB per octave	1000 Hz
Low Frequency Direct Radiator	
Nominal Diameter mm (inches)	385 (15)
Voice Coil Diameter mm (inches) (Copper wire)	50 (2)
Bl Factor in gauss/cm	19×10^6
Fundamental Resonance Hz	20
High Frequency Compression Driver	
Dural Diaphragm Diameter mm (inches)	50 (2)
Voice Coil Diameter mm (inches) (Aluminium wire)	50 (2)
Horn Cut-off Frequency in Hz	500
System Dimensions (H \times W \times D) cm (inches)	99 \times 66 \times 37 (39 \times 26 \times 14½)
Shipping Weight Kg (lbs)	56 (124)



Berkeley	Cheviot	Devon	Eaton
HPD 385A	HPD 315A	HPD 315A	HPD 295A
85	60	60	50
8	8	8	8
35-20,000	40-20,000	45-20,000	50-20,000
3	5	5	7
1000 Hz	1000 Hz	1000 Hz	1000 Hz
385 (15)	315 (12)	315 (12)	295 (10)
50 (2)	50 (2)	50 (2)	50 (2)
19×10^6	16×10^6	16×10^6	16×10^6
20	20	20	22
50 (2)	50 (2)	50 (2)	50 (2)
50 (2)	50 (2)	50 (2)	50 (2)
500	500	500	500
$84 \times 54 \times 31$ ($33 \times 21 \times 12$)	$85 \times 45 \times 26$ ($33 \times 17\frac{1}{2} \times 10\frac{1}{4}$)	$58 \times 40 \times 26$ ($23 \times 15\frac{1}{4} \times 10\frac{1}{4}$)	$52 \times 35 \times 25$ ($20\frac{1}{4} \times 13\frac{1}{4} \times 9\frac{1}{4}$)
41 (90)	30 (66)	21 (46)	18 (40)



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Tannoy reserve the right to make changes in product specifications in accordance with a policy of continual research and development.