

# TANNOY<sup>®</sup>



## The Name for Loudspeakers



## ARUNDEL

Time Compensated Dual Concentric Loudspeaker System

Superb stereo sound has always been a feature of the Tannoy Dual Concentric Loudspeaker. Now the latest Time Compensated Dual Concentric Systems take another step closer to the real thing.

The Dual Concentric drive unit in the Arundel combines our remarkable high frequency compression driver with a 380mm (15") bass radiator, to provide one axis along which both high and low frequency sounds are generated.

Our unique new Time Compensated crossover, with adjustable high frequency response, now aligns these sources at one single point on that axis.

The Tannoy Arundel — For those who appreciate the finest sound

The result is elimination of time delay distortion, with stereo images precisely located in time and space.

The original proportions of the Arundel are a result of our new research to find the optimum internal volume for realistic bass response, with cabinet dimensions that provide real improvements in sound quality.

The narrower front baffle reduces resonance by giving a more rigid mounting for the drive unit, while the deep cabinet reduces unwanted sound reflections from the rear of the loudspeaker.

The result is a clearer, more accurate sound for your continued listening pleasure.

The elegant styling of the Arundel has been chosen to compliment both the Loudspeaker and your home. Superbly finished, selected real walnut veneers are used on the outer surfaces of the cabinet, with a warm, hand-laid cork finish to the front baffle.

Completing the distinctive appearance of the Arundel is the three-piece detachable grille, covered in acoustically transparent Oatmeal cloth specially woven for Tannoy from fine Swiss yarn.

## Why Dual Concentric?

The theoretically 'ideal' loudspeaker would have just one single drive unit producing both high and low frequencies.

This is, however, impossible as the reproduction of different frequencies requires drive units of quite different physical and electrical characteristics. High frequency reproduction requires a light, fast moving diaphragm; while a much larger unit is required to move the greater volume of air needed for mid and low frequencies.

In a conventional loudspeaker, therefore, two (or more) drivers are used, mounted separately on the front baffle behind the grille. This separation means that the soundwaves from each driver have to travel unequal distances to the listener, causing unnatural time delays in the arrival of high and low frequencies. That delay confuses our hearing mechanism, which is less able to reconstruct a convincing stereo image of the original performance.

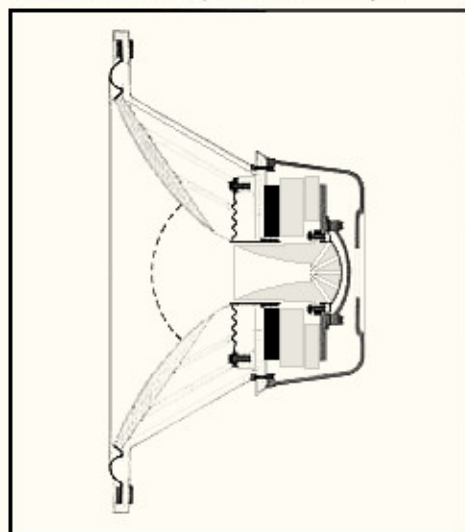
The Tannoy Dual Concentric takes a major step towards the theoretical ideal by actually combining two quite separate and physically different drive units within the same chassis.

High frequencies are reproduced by a compression driver, which is mounted behind the centre of the cone of the mid/low frequency driver. Both drivers are engineered to accept wide ranging power levels, using high temperature coil winding techniques, and are capable of very wide dynamic range reproduction.

The Tannoy Dual Concentric looks, at first glance, like one speaker. A closer look will reveal the throat of the compression driver behind the dust dome in the centre of the bass cone.

The result is that the source of sound at high frequencies and the source of sound at low frequencies are on the same axis. Complementary crossover design, using unique circuitry, aligns the high frequency and low frequency sources at one point on that axis.

The Tannoy Dual Concentric is, therefore, a true single point sound source loudspeaker system which eliminates unnatural time delays, and provides the smooth consistent intensity of sound necessary to create a precise stereo image.



The separate components of the Dual Concentric have been developed to be the best of their type available.

Our compression driver is a massive device in comparison with conventional tweeters, capable of accepting very high power inputs and converting significantly more of that power into pure sound. The horn throat and phase compensating array is machined from solid steel to eliminate resonance. The flare of the horn throat is continued by the bass cone, ensuring a smooth, distortion free sound at the crossover point.

Our special Barium Ferrite magnet has a much greater mass than most speaker magnets, and utilises a unique magnetic shunt to ensure the best acoustic balance of high and low frequencies.

The bass driver uses an individually treated cone with specially damped suspension to give controlled bass response without colouration.

**The Complementary Crossover**  
Our crossover networks are individually designed to complement each model of loudspeaker and provide a fully 'phase coherent' system, using our unique circuitry. This gives a single point sound source, particularly at frequencies where the human ear derives the information necessary to create a precise stereo image.

All of our crossover components are the finest available and each is mechanically and thermally stable, enabling full advantage to be taken of the Dual Concentric's high power handling without the need for signal degrading 'protection' devices.

To enable you to adjust the high frequency response of the system to suit your listening environment, we have included two controls in the crossover. An energy control to increase or decrease the output of the compression driver over the frequencies from 1kHz to 20kHz, and a roll-off control which alters the output of frequencies above 5kHz.

The Tannoy Dual Concentric System is not the cheapest way to make a loudspeaker; but we do it because we know it is the best way to give you superior stereo sound. The elimination of unnatural time delay distortion provides superb stereo imagery. Wide sound dispersion enables you to appreciate that image over a wider area than with conventional loudspeakers. Wide dynamic range gives you the highs and lows of a musical performance, and is essential to realise the full benefit of today's high quality analogue and digital recordings as well as tomorrow's laser technology.

## ARUNDEL — Technical specification

Recommended amplifier power (RMS per channel into 8Ω)*	50-200W
Peak power handling	500W
Impedance	8Ω nominal 5.5Ω minimum
Sensitivity (1W @ 1m)	92dB (anechoic) 95dB (domestic)
Frequency response (± 3dB)	32Hz-20kHz
Phase response	90Hz-10kHz ± 12°
Time compensation	Better than ± 10μsec. 90Hz-10 kHz
Dispersion (including angle @ -6dB points @ 10kHz)	90° horizontal & vertical
Crossover type	Passive, low loss, time compensated type 1019
Crossover frequency	1kHz
Crossover controls	Energy Shelving. ± 6dB over 1kHz-20kHz Roll-off Slope. +3dB to -6dB per octave 5kHz-20kHz
Driver type	Dual Concentric, high compliance type 3839 Diameter 380mm (15")

Distortion	Less than 2% 3rd harmonic at half power 80Hz-20kHz Less than 0.5% 3rd harmonic for 90dB 40Hz-20kHz Less than 2% 3rd harmonic for 110dB 80Hz-20kHz Less than 5% 3rd harmonic for 113dB 80Hz-20kHz
Bass loading	Single ducted port
Cabinet construction	18mm high density particle board with rigid cross-bracing and bitumen damping
Finish	Real walnut veneers Baffle finished in hand laid cork
Grille	3-piece detachable. Oatmeal cloth on wood frames.
Cabinet internal volume	180 litres
Cabinet dimensions (h x w x d)	1000 x 498 x 489mm (Packed: 1140 x 560 x 560mm)
Cabinet weight	46kg (Packed: 54kg)

\* The peak power capability of all Tannoy Loudspeakers will allow higher amplifier powers to be used with wide dynamic range material. Care must be taken, however, to avoid conditions such as switch-on surges and amplifier overloading or 'clipping' which may result in momentary peaks of power greatly in excess of the specified ratings.

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