



TURNBERRY GR <sup>LE</sup>

LIMITED  
**TANNOY**  
EDITION

HERITAGE, TRADITION AND TIMELESS STYLING;  
INNOVATION AND PIONEERING AUDIO DESIGN.

# TURNBERRY GOLD REFERENCE LIMITED EDITION

The Turnberry GR Limited Edition is a substantially upgraded version of the Turnberry GR and this leaflet outlines the key differences compared to the 'standard' model. Most of the installation instructions such as system wiring and speaker positioning are the same as the Turnberry GR and for this reason the standard manual is included with your new speakers. Please read the main 'Owner's manual' (Stirling GR and Turnberry GR) for general instructions on set up and getting the best out of your LE speakers, whilst observing the specification differences contained in this additional booklet of information.

Exclusive, perfected and hand finished in Scotland to the highest standards, only 150 pairs of the Turnberry Gold Reference Limited Edition have been made. While the cabinet and character remains true to Turnberry GR, the LE features Tannoy's flagship 250 mm (10") Alnico Gold Reference Dual Concentric™ driver, a custom crossover and luxury LE grille and special trim detailing.

The Prestige GR Dual with Alnico magnets brings Tannoy's signature PepperPot™ Waveguide™ and matching bespoke cone material to the Turnberry GR for the first time. Together with a larger 50 mm (2.00") aluminium-magnesium alloy dome HF unit, the driver delivers unrivalled smoothness and extension, combined with extremely high power handling and class-leading musical communication.

To match the Alnico GR Dual with the classic Turnberry cabinet, the LE uses a completely bespoke crossover which has been upgraded with custom-specification ICW ClarityCap™ MR capacitors, low loss laminated core inductors and high precision resistors. The result is a rich and articulate sound with remarkable sound staging and all the cohesive musicality of a true point source transducer.

Mounted on a Limited Edition engraved machined aluminium panel, the Turnberry GR LE's high frequency power controls can tailor the listening experience without introducing any potential distortion than can result from using an amplifier's 'tone' controls. Please refer to the Owner's Manual for further details of this control panel (page 32)

Comprehensively braced and heavily damped, the Turnberry GR LE cabinet is structurally identical to the standard model, using the same fine timber and artisan craftsmanship throughout. The cabinet's distributed port bass loading ensures prodigiously deep LF response and a dynamic scale that belies the speaker's relatively compact dimensions. Superior peak power handling of 500 watt and a very high 93dB efficiency make the Limited Edition Turnberry GR a powerhouse of musical expression.

## AESTHETICALLY PLEASING AND MUSICALLY ENGAGING

Distinctively engraved, individually machined metal trims carry the Limited Edition insignia to fully authenticate this enhanced version of the Turnberry GR. The rear baffle carries detail of the special Alnico magnet motor system used within the Dual Concentric driver in this model.

The timeless classic design of the hand-crafted cabinet is finished in oiled real wood veneers and supplied with a tin of wax-oil to help you maintain the pristine lustre of the wood. Utilising a bespoke weave grille cloth, normally reserved for the Kensington GR, the Turnberry GR LE is as aesthetically pleasing as it is musically engaging.

The prestigious Turnberry Gold Reference LE has been strictly limited to a production run of just 150 pairs worldwide. Each pair has been manufactured, hand-finished, pair-matched and tested in Scotland. Supplied in this pack is a numbered certificate of authenticity.







# TRADITIONAL CRAFTSMANSHIP USING THE FINEST MATERIALS

## THE DUAL CONCENTRIC™ DRIVE UNIT

One of the unique advantages of the Tannoy Dual Concentric principle is that the low and high frequency sound radiation is generated on the same axis. The high frequency unit is mounted behind, and concentrically with the low frequency unit. High frequency sound radiates from the centre of the low frequency unit through a carefully designed exponential horn. Low and high frequencies are therefore fully integrated at source. It is this feature that gives the Dual Concentric driver such unique sound reproduction qualities.

There are other significant benefits. The high frequency unit does not obstruct the low frequency unit in any way (a unique feature when compared with other so called coaxial systems). Polar dispersion of sound is symmetrical in both horizontal and vertical planes. By careful crossover network design the virtual acoustic sources of the high and low frequency units form a virtual point source. Therefore the total sound appears to emanate from a single point source located slightly behind the drive unit. This means that the loudspeakers, when fed from a high quality stereo source, can recreate a full and accurate stereo image.

### The Low Frequency Section

The low frequency section of the Dual Concentric driver has exceptional power handling and dynamic range. The low frequency cone piston is produced from selected paper pulp. This is specially treated to absorb internal resonance modes.

The twin roll fabric surround is also damped and shaped correctly to terminate the moving cone and provide optimum compliance and linearity at large excursions. The cone piston is driven by a high power motor system consisting of a four layer coil suspended in a precision magnetic air gap. The coil is wound with a special high temperature adhesive system and cured to ensure reliable operation at high peak power inputs. The shape of the low frequency cone is arranged to provide optimum dispersion of audio frequencies at both the high and low ends of the spectrum. The cone flare continues the high frequency horn profile to ensure a smooth transition at the crossover point.

Low frequency alignment is through the front firing Tannoy Distributed Port System (DPS).

#### The High Frequency Section

The high frequency driver consists of a wide dynamic range compression unit giving superb transient performance with a smooth uncoloured response. The compression unit feeds acoustic power through a multiple phase compensating device to the throat of a precision machined solid steel acoustic horn. This horn provides an acoustic impedance transformation to match the compression unit radiation into the listening environment.

## SUPERB TRANSIENT PERFORMANCE WITH A SMOOTH AND UNCOLOURED RESPONSE

A magnesium alloy diaphragm, formed by a specially developed five-stage process, produces a piston with a very high stiffness to mass ratio. Optimum molecular grain structure gives long-term durability. A very low mass precision aluminium coil provides the driving force for the diaphragm, with fine multi-stranded copper lead out wires to ensure reliability. The diaphragm is suspended by a newly designed ventilated Mylar™ surround, with superior energy terminating properties, to give low coloration and a smooth frequency response. A rear damped acoustic cavity controls the compression driver response and ensures further correct acoustic impedance matching to the horn throat.

The response of the compression horn driver extends two full octaves below the crossover frequency to eliminate colourations that can arise through operation over the fundamental resonance region.



# OPTIMUM ACOUSTIC BALANCE WITH INCREASED SENSITIVITY

## The Magnetic Circuit

An Alcomax 3™ high-energy magnet provides flux generation for both high frequency and low frequency driving motors. Precision air gaps contain the magnetic flux surrounding each coil. The high frequency air gap has a unique shunt member to apportion the total magnetic flux in the correct ratio between low and high frequency units. This gives an optimum acoustic balance. Precision machined, low carbon steel pole pieces ensure unsaturated operation, linear flux fields and a high heat sinking capability. High power inputs can therefore be handled with minimum change of impedance due to temperature effects. A very robust, high quality, precision pressure die-cast chassis locates the whole magnet assembly and positions the moving parts with high accuracy. This provides long-term reliability and yet does not interfere with the acoustic radiation from the individual sections.

## Alcomax 3™ Magnet

Alcomax 3 is a grade of Alnico magnet, an especially high-energy material. This unusual iron/nickel alloy is doped with cobalt, aluminium and other rare metals to produce a magnetic material with very special properties. Alcomax 3 has a high remanent magnetism and energy product. In other words, it magnetises to a high level and retains that exceptional degree of magnetisation. Alcomax 3 is also an electrical conductor, forming a shorted turn around the voice coils, to effectively null non-linear eddy current effects. These properties give the Dual Concentric drive unit using an Alcomax 3 magnet an exceptionally clean transient response and increased sensitivity.



TURNBERRY GR  
LIMITED EDITION

A LIMITED EDITION OF 150 PAIRS  
TANNOY DUAL CONCENTRIC DRIVER  
WITH ALNICO MAGNET SYSTEM  
DESIGNED, ENGINEERED AND MANUFACTURED  
IN THE UNITED KINGDOM

## CROSSOVER NETWORK

During the design of the crossover network the acoustic, mechanical and electrical interactions of the high and low frequency sections have been fully analysed. The crossover is therefore an integral part of the design of the system. The crossover network provides complex equalisation in both amplitude and phase for each section and fully integrates the response at the crossover point. All components are high precision, low-loss and thermally stable. Specially selected components of the highest quality are used, such as ClarityCap™ MR series non-microphonic polypropylene capacitors, high precision resistors, and very low loss laminated iron core inductors. Wiring is by Neotech™ PCOCC-A (99.9999% purity), having a large crystal structure and stable atomic arrangement.

## HIGH AND LOW FREQUENCY SECTIONS ARE ALIGNED IN TIME AND SPACE TO ENSURE ACCURATE REPRODUCTION OF STEREO IMAGES

All components in the crossover network are hard wired to eliminate unwanted metal-to-metal contact and ensure freedom from vibration. The components are laid out to minimise inter component coupling and are placed well away from the driver magnetic field. High current switch blocks with gold-plated screw terminals permit user adjustment of high frequency energy to suit differing listening environments.

The complementary design of crossover and drive units means that the loudspeaker system as a whole behaves as a minimum phase system over the audio band and therefore the acoustic sources of the high and low frequency sections are aligned in time and space to ensure accurate reproduction of stereo images.

# TURNBERRY GR LIMITED EDITION SPECIFICATION

## Performance

Recommended amplifier power (watt RMS)	250 (maximum)
Continuous power handling (watt RMS)	125
Peak power handling (watt)	500
Sensitivity (2.83 volt @ 1m)	93 dB
Nominal impedance (ohm)	8
Frequency response (-6 dB)	29 Hz – 27 kHz
Dispersion (degrees conical)	90

## Drive Units

Driver type	250 mm (10") Dual Concentric™
Dual Concentric high frequency	52 mm (2") round wire voice coil, magnesium alloy diaphragm, Alcomax 3™ magnet system
Dual Concentric low frequency	52 mm (2") round wire voice coil, twin roll fabric surround, Alcomax 3™ magnet system

## Crossover

Crossover Frequency	1.1 kHz
Crossover Type	Passive compensated 2nd order LF, compensated 2nd order HF
Adjustments	+/- 3 dB over 1.1 kHz to 27 kHz, shelving

## Cabinet

Enclosure type	Distributed port
Volume	100 litres (3.53 cu. ft)
Dimensions	(H x W x D) 950 mm (37.40") x 456 mm (17.95") x 366 mm (14.41")
Finish	Walnut veneered 18 mm cabinet with solid walnut edging





TANNOY



# CONGRATULATIONS

on the purchase of your Turnberry GR Limited Edition loudspeakers.

We hope these give you many years of listening pleasure.

No. \_\_\_\_\_ of 150 pairs

limited production of

TURNBERRY GR <sup>LE</sup>

loudspeakers



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Dr Paul Mills  
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