

# Wharfedale

Catalogue Section

(Regd. Trade Mark)

Catalogue Section

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**SPEAKER CHASSIS**

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## INTRODUCTION

In the following pages will be found details and illustrations of WHARFEDALE products, covering Loudspeakers, Cabinets, Transformers, Crossover Networks, etc.

A wide selection is offered to meet most requirements and all models in the range are built by craftsmen with many years of experience. The demand for this equipment is worldwide and regular shipments are made to countries throughout the world, including America and Japan.

WHARFEDALE loudspeakers have for 30 years been recognised as being among the finest available sound reproducers, and emphasis has always been on the use of top quality materials in their construction.

Some of the important points related to design and efficiency are as follows:

### SPEAKER UNITS

**CONE RESONANCE.** The fundamental resonance is still a most important consideration in a loudspeaker and this is kept as low as possible consistent with reliability. All speakers of 10 in. diameter upwards carry a card showing the actual resonance of the unit, tested on a large open baffle.

**SURROUNDS.** Roll surrounds are now fitted to the majority of our units, this type of suspension permitting large cone excursions under airtight conditions. The excellent low frequency performance of the W2, W3 and W4 models is mainly due to this development in a 12 in. unit and the Airedale is fitted with a roll surround version of the W15, the bass enclosure being 4 cu. ft. (The original W15/FS is still satisfactory in the large 9 cu. ft. corner enclosure and it is not necessary to convert existing models.)

**POLYSTYRENE DIAPHRAGMS.** The 12 in. bass speaker in the W2, W3 and W4 is now fitted with a polystyrene diaphragm across the cone face which acts as an acoustic filter. The W12/RS unit has also benefited from similar treatment and the resulting W12/RS/PST is eminently suitable for small enclosures, the PST filter masking the internal resonance — normally heard through the large cone.

**ALUMINIUM VOICE COILS.** These are used on several models to give maximum high frequency response. Tuned ultrasonic tinning now results in coils which are guaranteed 12 months in all climates.

**MAGNETS.** Magnetic materials and the design of magnet systems are constantly being improved by British manufacturers and such improvements are applied to Wharfedale magnet systems wherever possible. The result is that the vial flux density readings go up without increase in price.

Ceramic magnets are now being used on many models, but this does not signify that Alcomax and similar magnets are obsolete.

**CHASSIS.** Open die-cast chassis are used on all models to give maximum rigidity, minimum resonance and optimum air loading.

**POWER HANDLING CAPACITY.** The loudspeaker wattage ratings quoted in the following pages apply to open baffle mounting only. When used with properly designed enclosures or horns, all the units described will safely handle the peak output from a modern 10/15 watt amplifier on normal programme material at full domestic volume.

Treble units must, of course, be protected from low frequency input, but can usually be taken down to about 400 c/s without risk of damage.

It is now common practice in the U.S.A. to rate amplifiers and loudspeakers in peak watts which gives a figure exactly twice that of the British RMS rating. Accordingly, two figures for power handling capacity are shown throughout this leaflet and are based on music — not on single note input.

**POLARITY.** All Wharfedale speakers are marked to show polarity. The terminal (or tag) marked red indicates that when this terminal is positive the corresponding movement of the diaphragm is forward.

This helps in phasing speakers correctly for stereo or when two or more units are used in parallel on a single channel.

**RESPONSE CURVES.** Although response curves depend to a large extent on the method of taking them, they are included in this catalogue to give a pictorial indication of the range covered by the various units. The general input level is 4 volts, with microphone on axis so a comparative indication of efficiency is also given.

**LOW FREQUENCY PERFORMANCE.** This is indicated (for 10 in., 12 in. and 15 in. units), by actual waveform oscillograms taken at the highest input in watts without serious distortion at 30 c/s. which is a very severe test. There is, of course, very little power in music and records at 30 c/s and the figures do not indicate total power handling capacity.

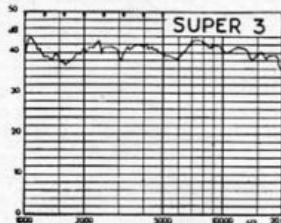
# Wharfedale

## SUPER 3

Still one of the most efficient treble units on the world market, the Super 3 is now fitted with a bakelised cone and cloth surround, and covers the range 1 to 20 kc/s with remarkable smoothness.



Impedance 2/3 ohms or 10/15 ohms.  
Flux density 14,500 oersteds.  
1" dia. centre pole.  
Aluminium voice coil.  
Max. input 6 watts rms or 12 watts peak.  
Frequency range 1,000-20,000 c/s.



Axial response curve.  
Mic. distance 1' 6".  
Input 4 v. at 1000 c/s.

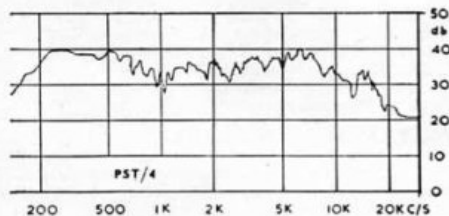
Suitable methods of mounting and details of crossover networks are given in the CCS leaflet.



## PST/4

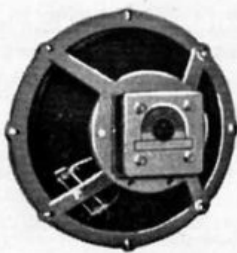
Impedance 10/15 ohms only.  
Flux density 11,500 oersteds.  
3/4" dia. centre pole.  
Aluminium voice coil.  
Max. input 5 watts rms or 10 watts peak.  
Frequency range 300-15,000 c/s.

Cloth surround and polystyrene diaphragm.



Axial response curve.  
Mic. distance 12".  
Input 4 v. at 1,000 c/s.

N.B. — The above treble speakers should not be used without a series capacitor to protect them from excessive LF input.

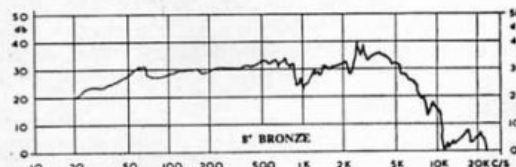


## 8" BRONZE

Impedance 2/3 ohms or 10/15 ohms.  
Flux density 10,500 oersteds.  
1" dia. centre pole.  
Max. input 5 watts rms or 10 watts peak.  
Frequency range 60-10,000 c/s.  
Copper voice coil.  
Corrugated cone surround.

Axial response curve.  
Mic. distance 12".  
Input 4 v. at 1,000 c/s.

These conditions also apply in general to the response curves which follow in this catalogue.



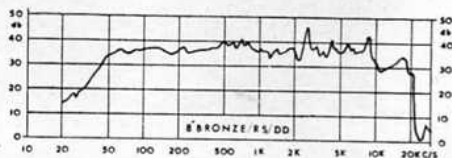
# Wharfedale

N.B. — The 8" and 10" Bronze units are now available in the RS/DD versions and provide wide range results at a remarkably low price. They replace the 8" Bronze/RS, 8" Bronze/FS/AL, 10" Bronze/RS and 10" Bronze/FSB.

When mounted in a 1 cu. ft. enclosure with slotted back (or tuned with 9" x 1" vent), this unit performs well in the bass and gives good "top" and justifies connection to a good FM set or average tape recorder. The HF output can easily be augmented by adding a PST/4.

## 8" BRONZE/RS/DD

Impedance 10/15 ohms only.  
Frequency range 50-20,000 c/s.  
Roll surrounds and double diaphragm  
Other details as 8" Bronze unit

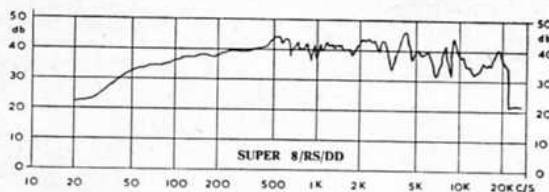


## SUPER 8/RS/DD

There is a saying that handsome is as handsome does, but there is no gainsaying that this speaker scores on both counts. The output is well maintained up to 20 kc/s, and we have shown on page 3 that it will give some undistorted output in a small enclosure even as low as 30 c/s, although we only claim reasonable coverage down to 40 c/s.

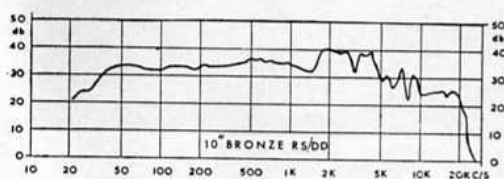


Impedance 10/15 ohms only.  
1" dia. centre pole.  
Ceramic magnet.  
Flux density 14,500 oersteds.  
Max. input 6 watts rms or 12 watts peak.  
Frequency range 40-20,000 c/s.  
Aluminium voice coil.  
Roll surround and double diaphragm.



This unit, mounted in the 1 cu. ft. cabinet with slotted back, was demonstrated with considerable success to about 6,000 people during the 1962 Audio Fair in London. The speaker also gives excellent results in the concrete columns described in the CCS leaflet.

## 10" BRONZE/RS/DD



Impedance 10/15 ohms only.  
1" dia. centre pole.  
Flux density 10,500 oersteds.  
Max. input 6 watts rms or 12 watts peak.  
Frequency range 35-10,000 c/s.  
Roll surround and double diaphragm.

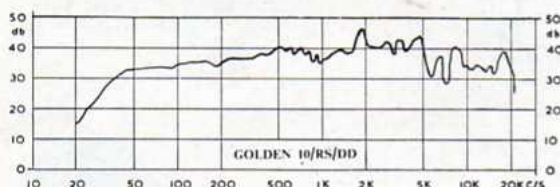
# Wharfedale

## GOLDEN 10/RS/DD

Introduced about 25 years ago, the Wharfedale Golden has always enjoyed a high reputation. The RS/DD treatment brings the speaker up to date and improves the response at both ends of the scale.



Impedance 10/15 ohms only.  
1" dia. centre pole.  
Flux density 14,500 oersteds.  
Max. input 8 watts rms or  
16 watts peak.  
Frequency range 30-20,000 c/s.  
Aluminium voice coil.  
Roll surround and  
double diaphragm.



The low frequency performance of this speaker is similar to that shown in the oscillograms below.

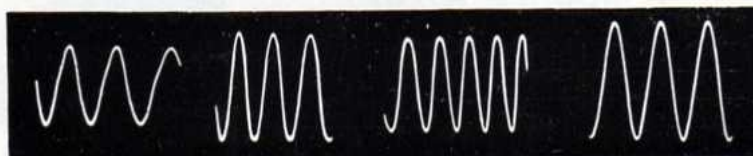
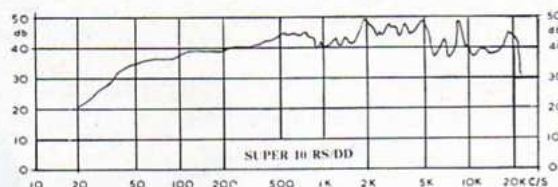


## SUPER 10/RS/DD

This model was demonstrated at the 1962 Audio Fair fitted in a 2 cu. ft. enclosure tuned with 12" x 3 1/4" slot, and created a most favourable impression. Although the frequency range is similar to the Golden, the higher flux density of the Super 10 (formerly W10), magnet gives higher sensitivity and rather better HF and transient performance.

Impedance 10/15 ohms only.  
1" dia. centre pole.  
Flux density 16,000 oersteds.  
Max. input 10 watts rms or  
20 watts peak.  
Frequency range 30-20,000 c/s.  
Aluminium voice coil.  
Roll surround and  
double diaphragm.

Axial response curve.  
Mic. distance 12".  
Input 4 v. at 1,000 c/s.



Waveform with unit mounted in 4 cu. ft. cabinet with slotted back.  
Input 2 watts, set at 1,000 c/s.



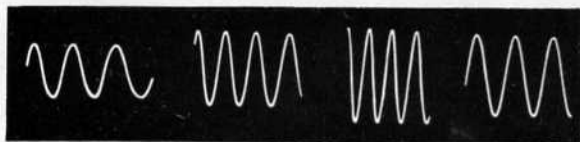
# Wharfedale



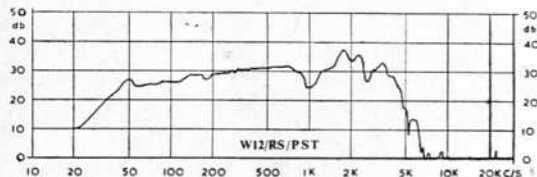
## W12/RS/PST

For clean bass down to 25 c/s in large enclosures, or 30 c/s in quite small ones, the W12/RS/PST is hard to beat. The polystyrene diaphragm although shown white here, is actually sprayed black so it does not show through the mesh.

Impedance 12/15 ohms only.  
1 3/4" dia. centre pole.  
Ceramic magnet.  
Flux density 14,000 oersteds.  
Max. input 15 watts rms or 30 watts peak.  
Frequency range 25-4,000 c/s.  
Roll surround and polystyrene diaphragm.



Waveform with unit mounted in 4 cu. ft. enclosure with slotted back. Input set at 5 watts at 1,000 c/s.



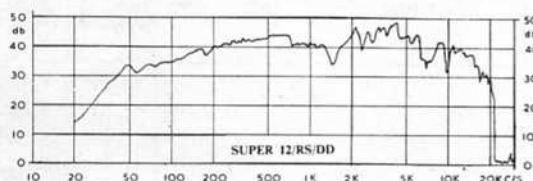
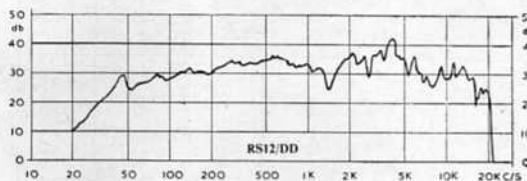
Since this design was described in the Cabinet Handbook, the polystyrene diaphragm has been re-designed so that the overall response of this speaker is extended to 4,000 c/s.



## RS12/DD

Fitted with roll surround and double diaphragm assembly, this unit will give really wide response in enclosures as small as 2 cu. ft. and yet may be used with advantage in corner cabinets of 9 cu. ft. The centre diaphragm is a one-piece moulding, including dome, similar to the type used so successfully in the Super 3.

Impedance 12/15 ohms only.  
Flux density 14,000 oersteds.  
1 3/4" dia. centre pole.  
Aluminium voice coil.  
Max. input 15 watts or 30 watts peak  
Frequency range 25-17,000 c/s.



## SUPER 12/RS/DD

This fine loudspeaker employs the same double diaphragm assembly as the RS12/DD but with a more powerful Alcomax III magnet giving improved sensitivity, damping and power handling capacity.

Impedance 12/15 ohms only.  
Flux density 17,000 oersteds.  
1 3/4" dia. centre pole.  
Aluminium voice coil.  
Max. input 20 watts rms or 40 watts peak.  
Frequency range 25-20,000 c/s.

N.B. — The LF performance of these 12" RS/DD units is on a par with the waveforms shown for the RS/PST type. The response above 12 kc/s has been improved since these models were introduced.



# Wharfedale

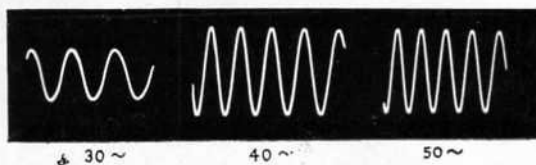
## W15/RS



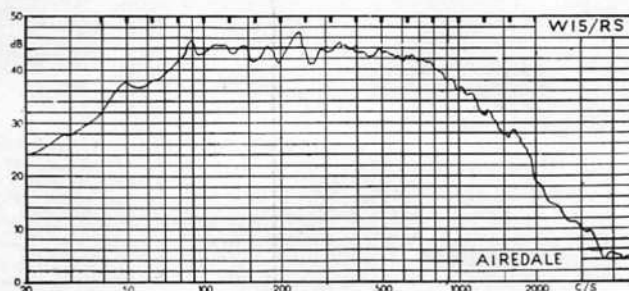
Converted to the RS type in June 1961, this magnificent bass unit has a smooth response up to 2,000 c/s and goes down to 25 c/s in suitable enclosures as small as 4 cu. ft. in volume. It is used in the Airedale cabinet model, which has achieved world fame for its magnificent bass. The following oscillograms, taken with an input at the remarkable level of 10 watts, illustrate the basic reason.

Impedance 12/15 ohms only.  
Flux density 13,500 oersteds.  
2" dia. centre pole.  
Max. input 20 watts rms or 40 watts peak.  
Frequency range 25-1,500 c/s.  
Roll surround.

Waveform at 10 watts input level.



Response curve, also taken in Airedale 4 cu. ft. enclosure, with crossover at 400 c/s.



## WHARFEDALE LOUDSPEAKER DATA

MODEL	BASS RESONANCE c/s	FLUX DENSITY Oersteds	TOTAL FLUX Maxwells	MAX. INPUT		WEIGHT Lb.	BAFFLE OPENING In.	CHASSIS DIA. In.	OVERALL DEPTH In.	FIXING HOLES PCD In.
				RMS Watts	PEAK Watts					
Super 3 . . . . .	Treble only	14,500	60,000	6	12	3½	3	3⅝	2½	3½
PST/4 . . . . .	Treble only	11,500	28,800	5	10	1½	3⅝	4⅝	2⅝	4⅝
8" Bronze . . . . .	70/80	10,500	41,500	5	10	2½	7	8	3¾	7¾
8" Bronze/RS/DD . . . . .	50/60	10,500	41,500	5	10	2½	7	8	3¾	7¾
Super 8/RS/DD . . . . .	50/60	14,500	60,000	6	12	4½	7	8	3½	7¾
10" Bronze/RS/DD . . . . .	38/43	10,500	41,500	6	12	4½	8¾	9¾	4¾	9¾
Golden 10/RS/DD . . . . .	38/43	14,500	60,000	8	16	5½	8¾	9¾	5½	9¾
Super 10/RS/DD . . . . .	38/43	16,000	85,000	10	20	10½	8¾	9¾	5¾	9¾
W12/RS/PST . . . . .	26/32	14,000	156,000	15	30	12	10⅞	12⅞	5¼	12⅞
RS/12/DD . . . . .	26/32	14,000	156,000	15	30	12	10⅞	12⅞	5¼	12⅞
Super 12/RS/DD . . . . .	26/32	17,000	190,000	20	40	18¾	10⅞	12⅞	7	12⅞
W12/EG . . . . .	46/52	14,000	156,000	15	30	12	10⅞	12⅞	5¼	12⅞
W15/RS . . . . .	26/32	13,500	180,000	20	40	13½	12¾	14½	7⅝	14⅞
W15/EG . . . . .	36/42	13,500	180,000	20	40	13½	12¾	14½	7⅝	14⅞

RS=Roll surround

DD=Double diaphragm

PST=Polystyrene diaphragm

# Wharfedale

## ELECTRIC GUITARS

After months of tests with various guitar groups, we have produced a 12" and 15" speaker robustly constructed to stand up to long periods of guitar input and specially designed to give good tonal quality in cabinets of portable size and weight.

The W12/EG is a wide-response unit fitted with double diaphragm and intended for use with LEAD GUITARS. The W15/EG is the 15" unit, fitted with heavy cone, giving full output down to the E-string of BASS GUITARS at 41 c/s.

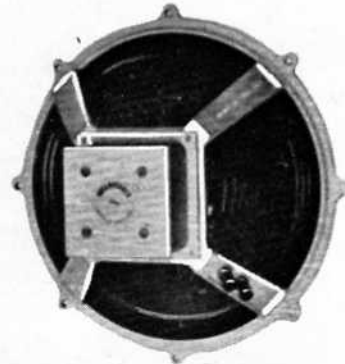
**Guarantee.** With guitar input it is always necessary to make judicious use of the amplifier volume control to avoid excessive and distorted output which can overload practically any loudspeaker. Although these models have been specially designed for guitar use, the maker's guarantee does NOT cover physical damage due to overloading.

**Cabinets.** The models EG12 and EG15 can be supplied separately, or fitted with the appropriate unit, plus its list price. Constructional details are given on a separate leaflet, with a larger 15" enclosure which can be made and used where extra bass is preferred to mobility.



**W12/EG**

12/15 ohms  
Weight 12 lb.



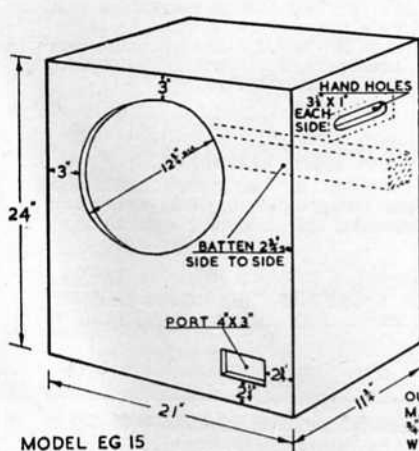
**W15/EG**

12/15 ohms  
Weight 13½ lb.

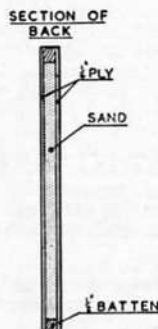
SPECIFICATION	W12/EG	W15/EG
Flux density, oersteds	14,000	13,500
Total flux, maxwells	156,000	180,000
Maximum input rms	15 watts	20 watts
" " peak	30 watts	40 watts
Frequency range	40-17,000 c/s	35-5,000 c/s

### CONSTRUCTIONAL DETAILS OF CABINETS . . .

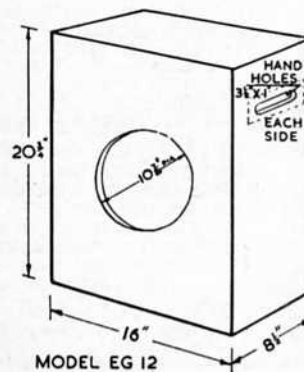
specially designed for use with Electric Guitar speakers, covering the required frequency ranges without unwanted resonance or vibration.



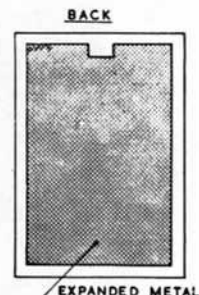
MODEL EG 15



OUTSIDE SIZES  
MATERIAL  
¾" THICK PLYWOOD  
WEIGHT 39 lb  
2½ CU. FT. APPROX.



MODEL EG 12



OUTSIDE SIZES  
MATERIAL  
¾" THICK PLYWOOD  
WEIGHT 17 lb  
1½ CU. FT. APPROX.

# Wharfedale

## CROSSOVER UNITS

The use of reversible electrolytic capacitors and ferrite-cored coils, with a consequent reduction in size, has enabled us to re-design the Wharfedale crossover units to make them much more compact and lighter in weight. The range has been streamlined to cater for the two basic types necessary for either a two or three-way speaker system.

### HS/400/3

Half-section three-way separator with crossover frequencies at 400 and 3,000 c/s. Available for 7-16 ohms only.

This separator unit gives an attenuation of about 12 dB per octave from the main crossover frequency.

Volume controls are fitted in the middle and treble speaker circuits to assist in balancing the three units and to compensate for room acoustics.

Size: 6" x 5" x 2 1/4."

Weight: 32 oz.

Maximum input: 30 watts.

The HS/400/3 can be used as a two-way half-section network by ignoring the treble terminals and putting the shorting switch to the two-way position.



### QS/800



Quarter-section two-way network with a crossover frequency of 800 c/s. Available for 7-16 ohms only. This separator gives a maximum attenuation of about 6 dB per octave.

Size: 5" x 3" x 2 1/4."

Weight: 15 oz.

Maximum input: 30 watts.

A tweeter can be added to the QS/800 using the circuit shown below.

All separator boxes are filled with wax to keep out damp or moisture, and the units are therefore suitable for tropical use.

N.B. — Full details of crossover circuits and how they work are given in the books *Loudspeakers* and *More About Loudspeakers*.

### WMT 1 MATCHING TRANSFORMER

Auto Transformer for matching 10-16 ohm or 7-9 ohm speakers to sets with 2-5 ohms output or vice versa.

Frequency response within 1dB from 20 c/s to 15 kc/s. Power handling capacity 15 watts. Can be used to match loudspeakers of different impedances to crossover unit in high quality two- or three-speaker system.

N.B. — This is not an isolating transformer.



### SM 1 STEREO MIXER TRANSFORMER

Although the best stereo reproduction is obtained by using two full range loud-speakers spaced 6 to 12 feet apart, some compromise is often necessary. With the SM 1 isolating and mixing transformer, the following systems may be used effectively.

- (a) One bass and two treble speakers.
  - (b) One full range speaker and one treble unit.
  - (c) Two widely spaced main speakers with a third to "fill in the middle."
- Maximum input 15 watts. Frequency response: Plus or minus 1dB 30 to 20,000 c/s.

Issued by **SIMON GRAY PTY. LTD.**, 28 Elizabeth Street, Melbourne (Tel. 63 8166 — 63 8211)  
Australian National Distributors for **WHARFEDALE WIRELESS WORKS LTD.**,  
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