FERROGRAPH

LOUDSPEAKER S1

Wilmot Breeden Electronics Limited
SIMONSIDE WORKS, SOUTH SHIELDS, TYNE WEAR, NE34 9NX
STAND

The stand for the Ferrograph S1 loudspeaker is a special single-pillar design, the feet being fitted with swivelling castors for complete freedom of movement. It is constructed of aluminium for lightness combined with strength and has been designed in sections for ease of packing and for convenience in transit. The instructions for assembly are given below.

Assembly

Either end of the draw bolt should be screwed into the centre of the upper support arm for approximately 1 inch, when the end will be recessed about $\frac{1}{2}$ inch from the flat surface. The support pillar should be slid over the draw bolt and the single-slotted end located in the circular recess in the centre boss of the upper support arm. It should be rotated until the slot locates on the key, then pushed fully home.

For convenience, the upper support arm should be stood on a flat surface and the lower support arms inserted into the slots in the support pillar as shown in the diagram. The cone sleeve should now be slid onto the draw bolt as far as possible and held in place by the locknut, which should be adjusted finger tight. The locking collar can now be pushed over the end of the support pillar to locate in the cut-out of each lower support arm and tapped gently into place. The locknut can now be tightened until the support arms are held firmly in place and the whole structure is rigid. The nut should not be overtightened as this would only place undue strain on the support pillar and draw bolt.

Finally the stand should be fastened to the loudspeaker cabinet using the hexagonal headed screws and washers provided. It will be found most convenient to do this with the cabinet upside down (on a soft surface to avoid marking the cabinet top) or on its side. The screws should be inserted by hand into the captive nuts on the bottom of the cabinet and made finger tight. They should then be tightened gradually in turn until the stand is held firmly to the cabinet. Again, overtightening should be avoided.

An alternative method is for the upper support arm (with the draw bolt correctly inserted) to be fastened to the loudspeaker cabinet at the start. The rest of the assembly will then proceed as described above.
CONNECTIONS

The connections to the Ferrograph S1 loudspeaker should be made at the recessed panel on the back of the cabinet, to the two 'press' terminals. The ends of the lead should be bared — about 1/8 in. (5 mm.) — and if flex leads are being used, the ends should be 'prepared' so that no stray strands of wire occur. The centre part of the terminal should be pressed in and the lead inserted into the hole on the upper side of the terminal, at the innermost part of the slot. When the centre part is released the lead is held firmly in place by the spring pressure.

In view of the high wattage rating of the loudspeaker, it is essential to use wire which is capable of carrying the current at maximum power (approx. 3 Amp at 25W). Where long leads are used, this is even more important as the resistance of the leads must be kept to a minimum compared to that of the loudspeaker. Although no harm will result, significant resistance in the leads can reduce the power available at the loudspeaker itself. In general, ordinary twin-core lighting flex will be adequate for most installations.

When two loudspeakers are used, they should be wired in phase. This can be ensured by connecting the loudspeakers as shown in the diagram, the use of colour coded wire facilitating this. If coded wire is not used, an alternative check on the phasing can be carried out by ear. The same signal should be fed simultaneously to both loudspeakers (situated fairly close to each other) and the bass response compared with that obtained when the leads to one of the loudspeakers are reversed. The loudspeaker connections giving the greater bass response should be used.
CABINET
The cabinet is constructed from polyester faced, high density chipboard with extensive internal bracing to minimise cabinet resonance. It is filled with long-fibre wool to achieve maximum acoustic damping. The detachable front grille is covered with acoustically transparent "Gender" style folk weave fabric, and is surrounded by an aluminium trim.
The front grille is held in place by several pads of 'Velcro', and may be removed by easing it out of the metal trim. When refitting, care should be taken that the pads match those on the baffle board and therefore the apertures in the grille backing locate over the speaker units and port aperture.

SPECIFICATION

Speakers
The system comprises three separate units, for h.f., m.f. and l.f., driven via a sophisticated cross-over network.

Nominal Dimensions

Overall — Height: 39½ in. (1 metre)  
Weight: 62 lbs. (28 kg.)

Cabinet — Height: 25 in. (64 cm.)  
Width: 14 in. (35 cm.)  
Depth: 17½ in. (44 cm.)  
Volume: 2·6 cu. ft. (73,600 cu. cm.)  
Weight: 56 lbs. (25 kg.)

Stand — Height: 14½ in. (37 cm.)  
Weight: 6 lbs. (2·7 kg.)

Cross-Over Network
The complex, steep-cutting cross-over network consists of 18 elements mounted on a printed circuit board of heavy gauge copper/glass fibre laminate.

Performance
Loudspeaker Impedance: 8 Ω nominal  
6 Ω minimum over audio range

Power Handling Capacity: 100W peak power  
25W r.m.s. sine wave power (continuous rating)

Typical Frequency Response: 45-20,000 Hz ± 3dB (pure sine wave radiation down to 30 Hz in free space conditions)

Cross-over Frequencies: 400 Hz and 3·5 kHz

Printed in England by Howe Brothers (Gateshead) Limited