CROSS-OVER FILTER FL6/10

The FL6/10 consists of a low-pass filter and a high-pass filter which divide an audio signal into two separate feeds, one for an l.f. loudspeaker unit and the other for h.f. units. The paralleled filter inputs can be connected directly to a single loudspeaker amplifier of low output impedance.

As shown in Fig. 1, a tapped auto-transformer forms the shunt inductor in the high-pass filter, and this serves as a means of setting the level of the h.f. feed. The value of C1 is adjusted, according to the tappings used, to maintain the required frequency characteristic. The values of R1 and R2 may be varied to compensate for differences in individual l.f. speaker units. All these adjustments are made when a loudspeaker assembly is initially tested and should only be modified by Equipment Department, particularly as part of the procedure in changing a speaker unit.

In the normal condition, using taps and component values as in Fig. 1, the electrical cross-over frequency occurs at about 1·6 kHz if the low-pass filter is loaded with 15 ohms to represent the l.f. speaker unit and the high-pass filter is loaded with 6 ohms to represent two parallel h.f. units. Under these conditions, the voltage loss introduced by each filter is about 20 dB at the cross-over frequency, the loss in the low-pass filter is 30 dB at about 2·2 kHz, and the loss in the high-pass filter is 30 dB at about 1·1 kHz.

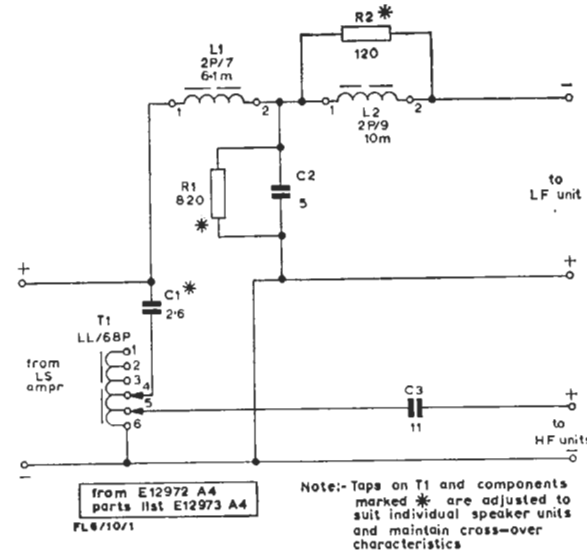

Fig. 1. Circuit Diagram of Filter FL6/10

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