

## TWIN-CHANNEL DISK REPRODUCING AMPLIFIER AM16/6

**Introduction**

The AM16/6 is a twin-channel amplifier unit for use in disk reproducers that are fitted with a pair of turntables. In particular, each channel is designed to amplify the output of a Goldring 800 pickup cartridge where this is substituted for a Tannoy Variluctance cartridge: the gain and frequency characteristic of each channel are such that the output obtained is similar to the output directly from the Tannoy cartridge.

The amplifier unit, which is transistor operated, is in a die-cast box which occupies a space of about 6 by 4 by 2 inches and is designed to be fitted within the cabinet of a reproducer, from which it must draw a d.c. supply.

**General Specification**

**Gain** 25  $\pm$ 1 dB at 1 kHz, measured using the high impedance input of an ATM/1 and with a level of -25 dB applied to the amplifier.

**Frequency Response** See Table 1.

**Distortion** Less than 1 per cent total harmonic distortion under the conditions specified for Gain.

**Noise** Not worse than -80 dB, measured on an ATM/1 in the T.P.M. mode, when a 600-ohm termination is connected alone to the amplifier input.

**Input Impedance** 40  $\pm$ 2 kilohms at 1 kHz, when the *H.F. Eq.* control is at maximum resistance.

**Supply Required** +420 volts, 9 mA.

TABLE 1: FREQUENCY RESPONSE

Tolerance,  $\pm$ 0.5 dB. Input, -25 dB.

<i>Freq.</i> Hz	<i>Rel.</i> <i>Output</i> dB	<i>Freq.</i> Hz	<i>Rel.</i> <i>Output</i> dB
40	-1.7	2,000	+2.2
60	-1.7	4,000	+4.5
100	-1.7	6,000	+5.3
200	-1.6	8,000	+5.6
500	-1.2	10,000	+5.8
1,000	0	12,000	+5.9
		15,000	+6.0

**Circuit (Fig. 1)**

Each of the two channels consists of a common-emitter stage coupled to an emitter-follower which provides the output.

The shunt resistance at the input of each channel prevents excessive output from a Goldring 800 pickup cartridge in the region of 15 kHz. The shunt resistance value can be adjusted by a preset *H.F. Eq.* control to obtain the required overall frequency response from a reproducer at the upper frequencies.

The RC negative-feedback network in the emitter circuit of the first stage in each channel is designed to produce a frequency response which levels out the raised step at the bass end of the characteristic of the Goldring 800 cartridge.

The amplifier is intended for connection to a 420-volt h.t. supply in a reproducer. A series resistor, R23, mounted outside the amplifier unit

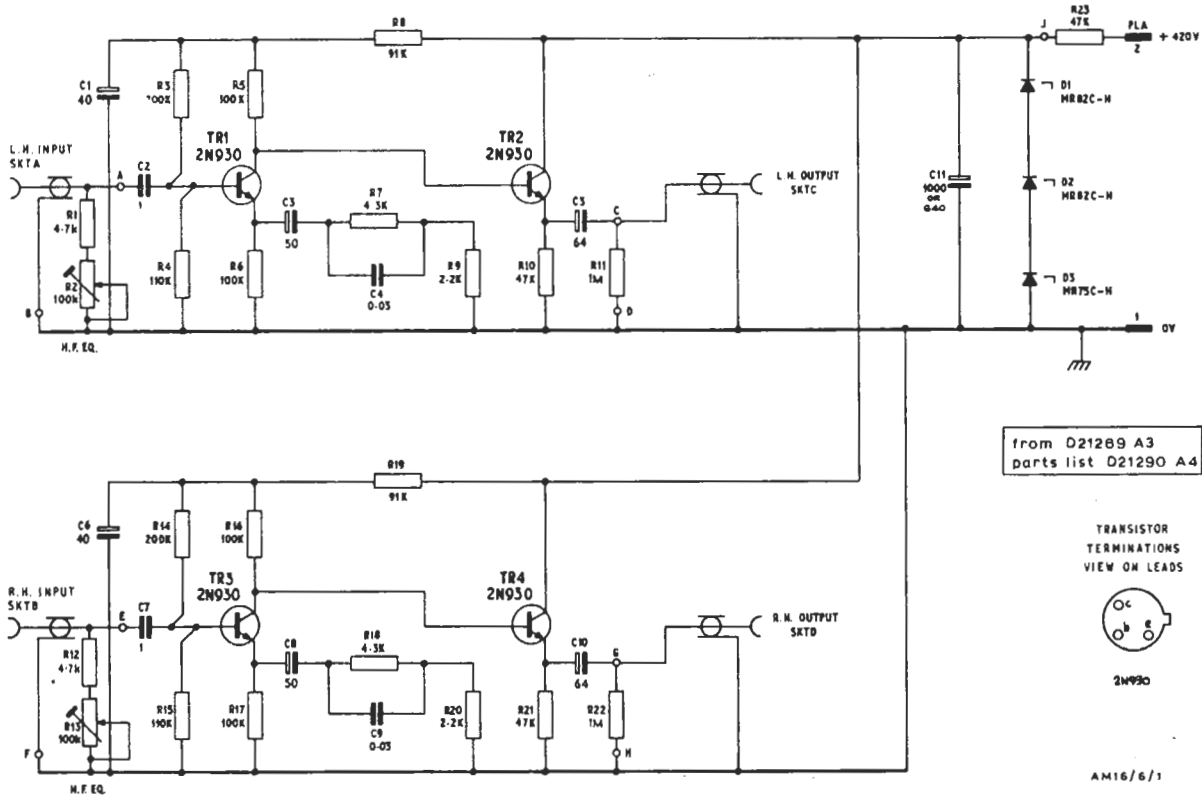


Fig. 1. Circuit of the AM16/6

case, and a shunt chain of three reference diodes reduce the voltage and provide a stabilised 24-volt supply within the amplifier unit.

**Maintenance**

With +24 volts on the collectors of TR2 and TR4, +9 volts should be measured, using an Avometer Model 8, at the emitters of these transistors.

In checking that the gain, frequency response

and distortion of the two amplifier channels are in accordance with the General Specification, apply the test signals to the amplifier from a TS/10 tone source via an LL/63R 1 : 1 ratio transformer with its secondary shunted by 600 ohms resistance.

**References**

1. Disk Reprodncer RP2/1B.
2. Designs Department Specification No. 1.43(68).

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