

GRUNDIG**TAPE RECORDER****“CUB”**

General Description: Transistorised, battery-operated tape recorder for single-speed ($3\frac{3}{4}$ in./sec.) and maximum spool diameter of 3 in.

Power Supply: 6 + 3-volt batteries. Four 1.5-volt cells (LPU2 or equivalent), one 3-volt battery (No. 8 or equivalent). Consumption, amplifier only record, 10.6 mA., playback 10.1 mA. Total current record 250 mA., playback 250 mA. rewind 280 mA. Socket provided for use with external 6-volt supply.

Transistor Analysis:

<i>Transistor</i>		<i>Collector, volts</i>	<i>Emitter, volts</i>	<i>Base, volts</i>
TR ₁	OC71 . .	4.4	1.2	1.3
TR ₂	OC71 . .	8	4.1	4.2
TR _{3, 4}	OC72 . .	8.7	0.03	0.165

TR₅ is an OC602 used as a speed-regulator switch.

Head Adjustment: The erase head should leave a safety margin along the centre of the tape of 0.4 mm. \pm 0.1 mm. The record/playback head should protrude above the tape by 0.1 mm. The tape should be so guided that its central line is 22.3 mm. above the chassis.

The erase head should be adjusted in the record position by means of its threaded mounting pin to the position shown on the diagram.

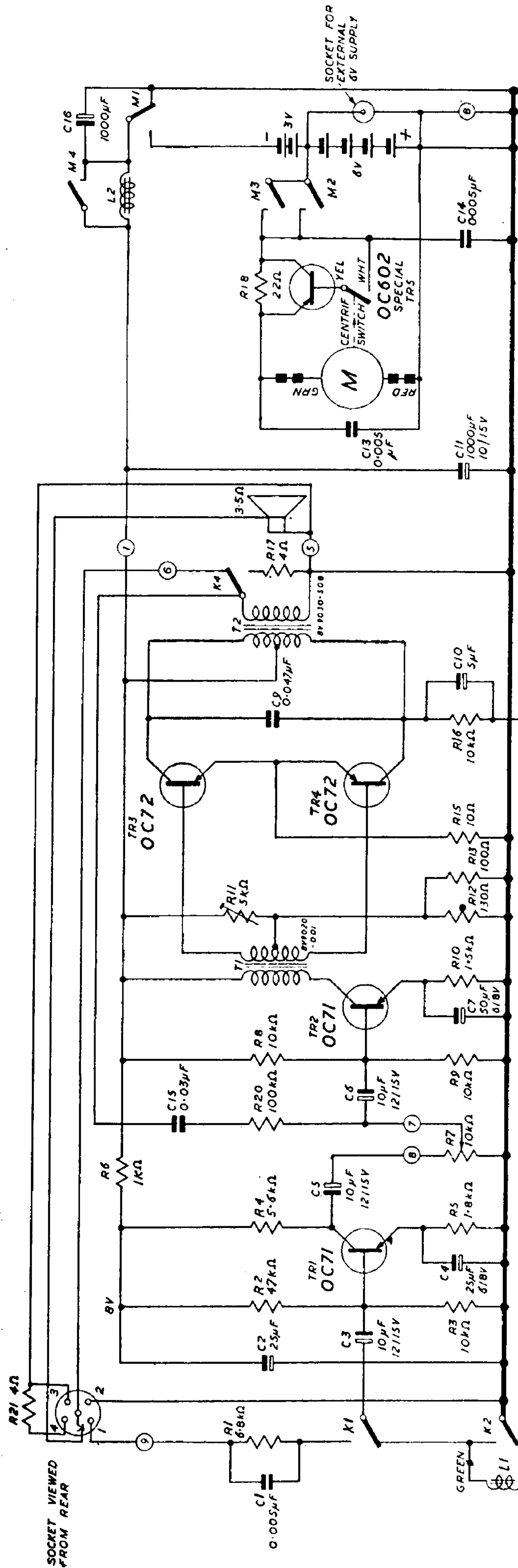
Brake Adjustments: In the record and playback positions a gap of approximately $\frac{1}{4}$ mm. must be ensured between the right-hand spool carrier and its brake spring. The adjusting screw must just make contact with the brake spring. The left-hand brake lever should clear its stop pin by approximately $\frac{1}{4}$ mm.

Notes: For the following checks and also for those indicated on the circuit diagram, all controls must be turned to maximum.

Record Amplifier: Feed into recorder via test network A (below circuit diagram) a signal of 20 mV. at 333 c/s., 1 kc/s. and 5 kc/s. Insert 100-ohm resistor into neutral return lead (green) of record head and measure potential drop across it on valve voltmeter: this should be: 333 c/s., 5 mV.; 1 kc/s., 5 mV.; 5 kc/s., 10 mV.

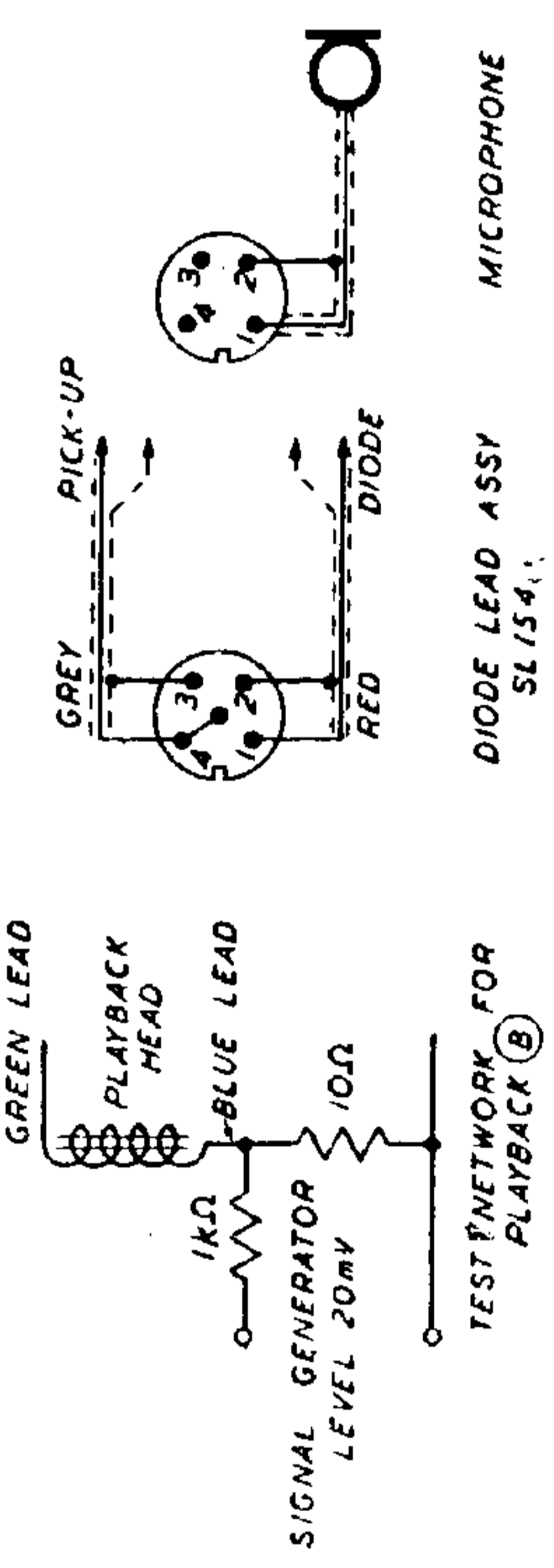
Playback Amplifier: Feed into recorder via test network B a signal of 20 mV at 333 c/s., 1 kc/s. and 5 kc/s. Replace loudspeaker by 3.5 ohm resistor and measure potential drop across it on valve voltmeter: this should be: 333 c/s., 190 mV.; 1 kc/s., 164 mV.; 5 kc/s., 90 mV.

Test via Tape: Feed into recorder, via test network A, a signal of 20 mV. at 1 kc/s. On playback replace loudspeaker with 3.5-ohm resistor and measure potential drop across it: this should be at least 200 mV.

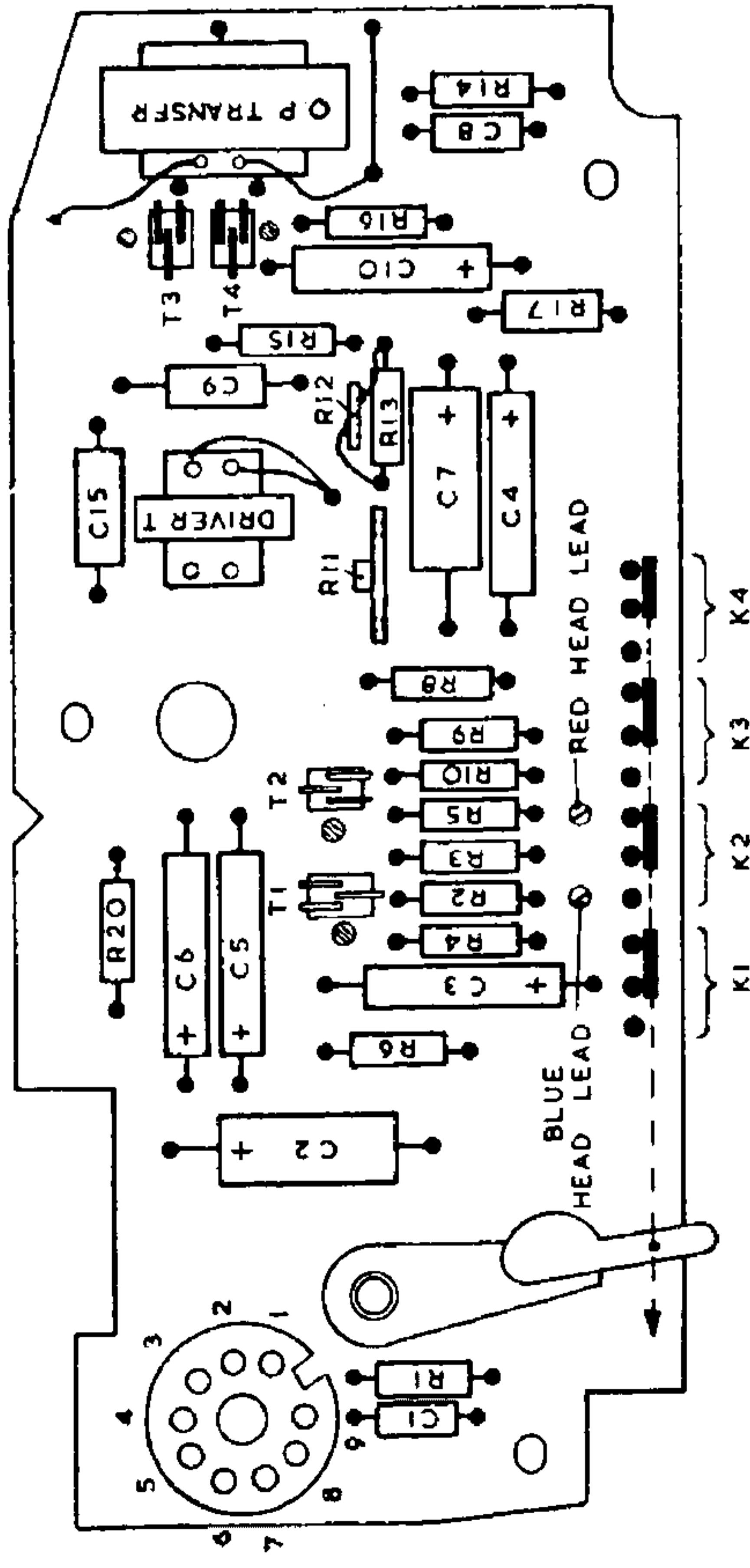


NOISE LEVEL WHEN PLAYING BACK - WITH VOLUME CONTROL TO MAXIMUM SHOULD NOT EXCEED 4mv

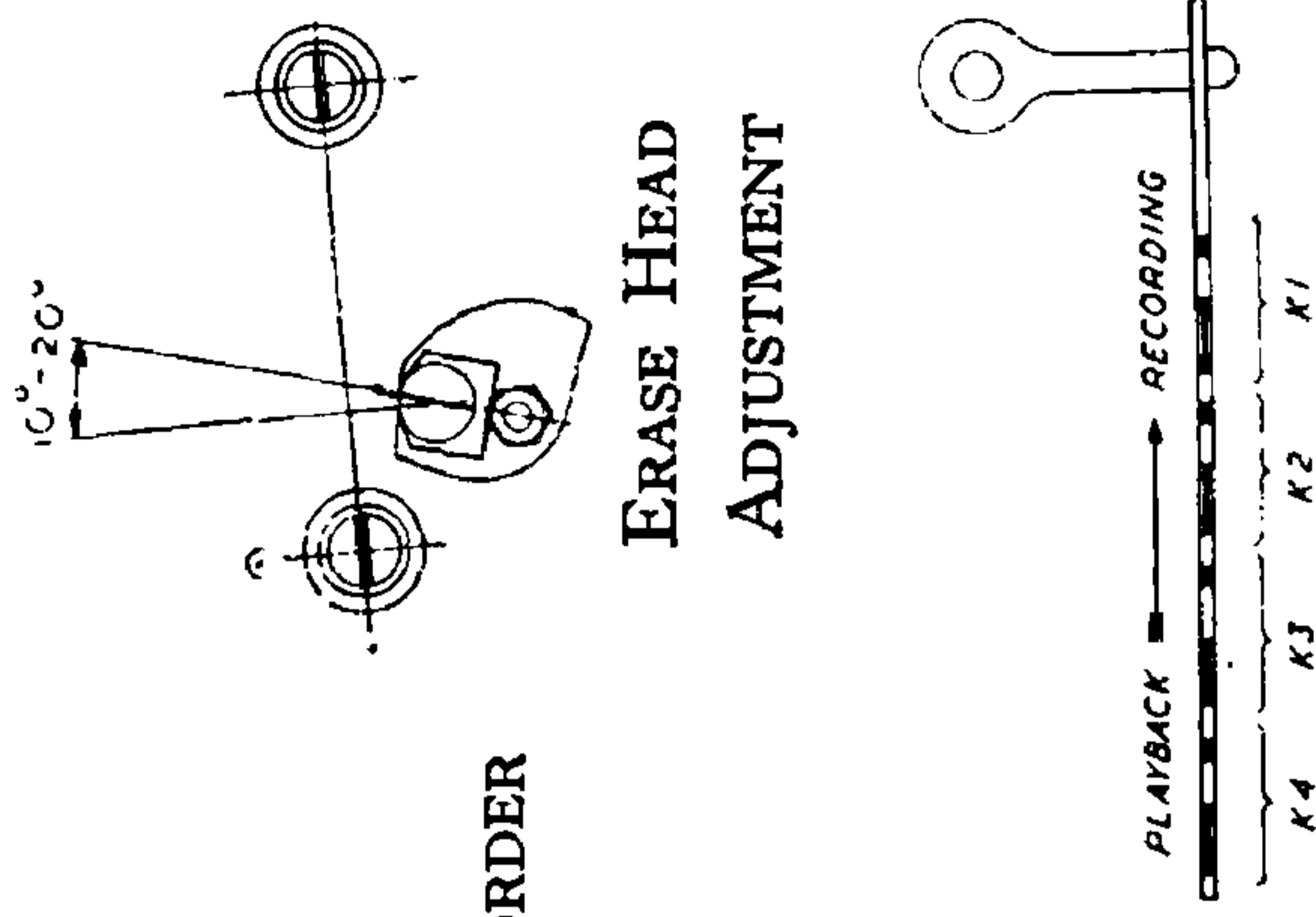
D.C. RECORDING BIAS - INSERT A D.C. MILLIAMPERE (AVO B) IN SERIES WITH THE NEUTRAL RETURN LEAD OF THE RECORD HEAD (GREEN) A READING OF 0.425mA ± 10% SHOULD BE OBTAINED.



GRUNDIG "CUB" TRANSISTORISED TAPE RECORDER



ERASE HEAD ADJUSTMENT



SWITCH ARRANGEMENT

