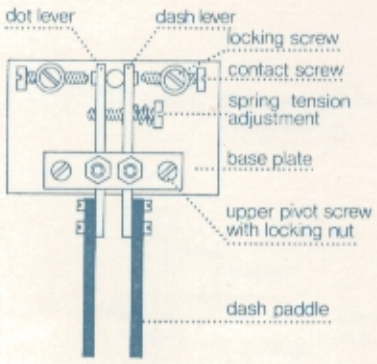
Adjustment of Manipulator



The manipulator may be adjusted to suit your personal taste.

To adjust the movement of a lever first loosen the locking screw (see figure). Adjust the contact screw for the movement preferred. Lock the screw in position. Repeat the procedure for the other lever.
Lever tension may be adjusted with the spring tension screw. Proper adjustment of the lever pivots is extremely important for smooth operation of the key. A 1,5 mm hexagonal key should be used for this adjustment. First loosen the locking nuts visible through the hole in the bottom of the cabinet.
Insert the hex-key and adjust the pivot screw. Then tighten up the locking nut.
If necessary re-adjust the pivot by loosening the locking nut slightly. Properly adjusted, the lever should move freely without noticeable friction but still be firmly supported.
Repeat the above procedure for the other lever.

Components

Controls:

P_1	Speed Potentiometer , 250 k, reverse semi-log.
P_2	Tone Control, 100 k, K II, log

Resistors 1–26:

values as indicated on circuit diagram 1/8 watt rating.

Capacitors:

C_{1-8}	values as indicated, Polycarbonate
C_{9-10}	Electrolytics 12 VW
C_{11-13}	Ceramic 400 VW
C_{14}	Ceramic 2 kV test

Semiconductors:

Q_1	Transistor type BC 258
Q_{2-10}	Transistor type BC 168 A
IC 1	Integrated circuit, dual flip-flop type SN 7473
IC 2	Integrated circuit, quad two-input gate SN 7400

Diodes:

D_{1-4}	Germanium type AA 117
D_{5-9}	Silicon type 1 N 914
D_{10}	Zener diode type 1 S 2056 A. 5.6 V

Relay:

S-model: Siemens Kartenrelais V 23016 B 0002-A101, 6 V SPDT-contacts

R-model: Reed relay, SPDT, RH 12

Transformer: 220/110/10 V 100 mA

Neon lamp:

Cerberus GI 6.1 Ls (NE-2)