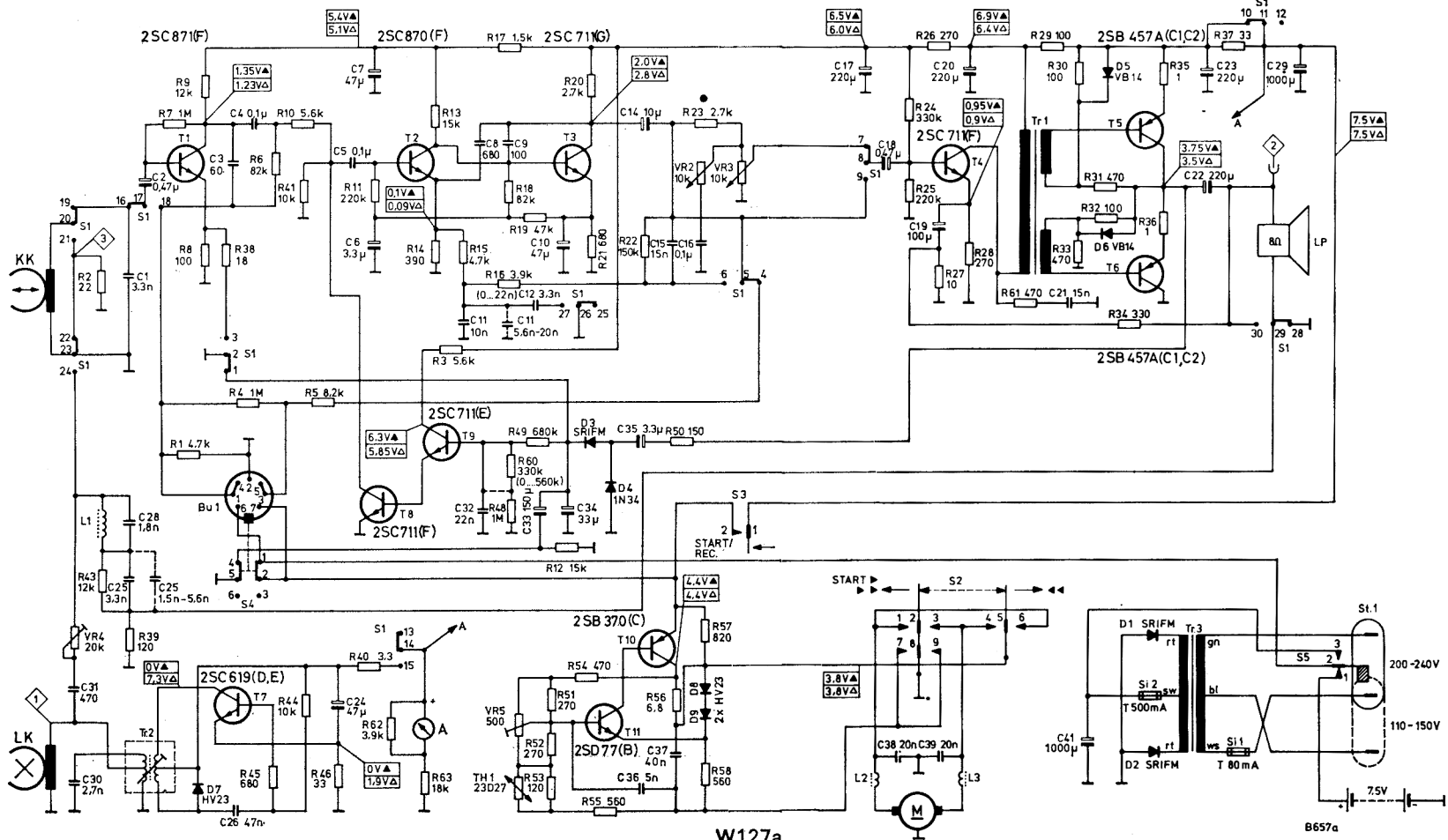


I.T.T./K.B.

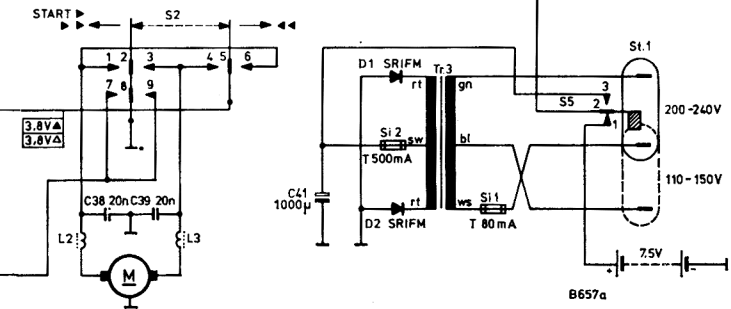
# Model SL 51

**General Description:** A cassette type tape recorder for use on A.C. mains or batteries. Features include meter for battery check and automatic record-level control.

**Circuit Diagram Notes:** The voltage measurements are taken without signal at the operating voltage of 7.5 volts with a measuring instrument with 33k ohms/volt internal resistance. The indicated measurements are average values determined from series measurements. ▲ Voltages measured with START-button depressed. △ Measured with REC./Start-button depressed. Position of switch contacts shown are Stop/Battery operation without microphone.



W127a



SWITCH DIAGRAM

B657a

position of controls	S1
STOP	1, 30
START	All contacts in the position shown in circuit diagram.
(play back)	
REC. + START	All contacts switched over.
REC. / START	

position of controls	S2	S3
STOP	1 2 3 4 5 6 7 8 9	1 2
REC.		
START		
START		
▶▶		

function	S4
without mike	1 2 3 4 5 6
with mike	

function	S5
mains lead unplugged	1 2 3
mains lead plugged in	

W127b

(W127a) CIRCUIT DIAGRAM—MODEL SL51 (Part). continued opposite (W127b)

**Power (Mains Voltage):** 110–150/200–240 V, 50–60 Hz

**Batteries:** 5 “C” cells (7.5 V).

**Current Requirements (at 50 mW Power Output):** Approx. 160 mA at 7.5 V D.C.; approx. 20 mA at 220 V A.C.; approx. 30 mA at 110 V A.C.

**Fuses:** Primary 80 mA, Secondary 500 mA.

**Component Parts:** Eleven transistors, seven diodes, two rectifiers.

**Tape Cassette:** Compact Cassette C60, C90, speed 4.75 cm. p.s. Two-track, international standard.

**Sockets:** Mains lead and a seven-pin standard socket for microphone/radio, gram/second recorder, post-amplifier (800 mV across  $\geq 22 \text{ k}$ ), remote control.

**Input Sensitivities:** Microphone/radio: 0.1–2 mV across 1 k ohm; gram: 0.1–2 V across 1 megohm.

**Voltage Change-over:** The set was adjusted at the factory to 200–240 volts. To change over to 110–150 V operation, remove the two screws holding the socket cover plate in place, turn the cover plate over so that the lettering “110–150 V” shows, and screw it back into place.

### Dismantling

**To Remove Top Case:** Remove the battery lid. Release the two screws that are accessible inside the battery compartment and also the two screws at the opposite corners. Carefully turn the set face downwards.

Release the button “CASS”. Remove the top of the case only after the cassette lid has been opened.

Carefully lift up the top of the case, tilt it by 180 degrees over the battery compartment.

**To Replace the Case:** When replacing the top of the case take care that the cassette pressure spring is not bent and that the connecting leads are not wedged between the top and bottom section of the case.

**To Remove Chassis Assembly:** Remove the two screws that are in the bottom of the case (under the push-buttons) and covered by rubber plugs. Next, remove the top of the case as described above.

Remove the fixing screw on top of the chassis between the motor and mains transformer, release also the other screw at the opposite corner at the left, rear side of the chassis.

Carefully lift up the chassis and tilt it by 90 degrees over the battery compartment. Remove the indicating instrument from the retaining spring and turn it over to the left-hand side. It is now possible to continue tilting the bottom of the case and the chassis until the latter lies flat on the top of the case. While tilting the top of the case and the chassis assembly, take care not to damage the connecting leads and the catch for the cassette lid.

**To Replace Chassis Assembly:** To replace the chassis, proceed in reverse order. Take care not to wedge the connecting leads between chassis and top or bottom of the case. The two screws for fastening the chassis through the bottom of the case under the push-button assembly have nut threads. The six other screws (the two short screws for fastening the inside of the chassis, the four long screws for the bottom of the case, of which the white ones are to be screwed into the battery compartment) are self-tapping screws. Do not confuse the types of screw. To replace the top of the case, see above.

**Alignment Erase Frequency and Bias Adjustment for the Record/Replay Head:** The adjustment is carried out with the button REC depressed. All measurements are made with the oscilloscope.

The erase frequency is 54 kHz and can be adjusted with TR2. An adjustment of the R.F. transformer TR2 can also be carried out by a frequency comparison (Lissajous figures).

The limiting values of the erase head voltages lie between 25 Vpp and 35 Vpp (measured between TP1 and the reference potential). The bias current is adjusted with the potentiometer VR4. This adjustment was made very accurately at the factory. It is advisable to change the bias current with VR4 only after the Record/Replay head has been replaced and when, therefore, the required frequency response was no longer attained. The bias current is correctly adjusted when the optimum frequency response is attained.

The limiting values for the bias lie between 90 mVpp and 125 mVpp (adjustable with VR4, measured at the resistor R2, test point TP3). On account of the manufacturing tolerances of the Record/Replay heads, only the limiting values can be indicated. The correct bias current can be determined only with the aid of the frequency response.

## I.T.T./K.B.

## Model SL 55

**General Description:** A cassette type tape recorder for use on A.C. mains or batteries. Features include batteries (5 "C" cells, 7.5 V) automatically disconnected when operating on mains voltage. Recording level control automatic and manual with special circuit when recording through microphone; level control also possible when tape is not moving. Separate controls for recording and playback, tone control. Interlocking lever prevents recorder operation when no cassette is inserted. There is a meter to indicate battery condition and recording level.

**Mains Voltage:** 110-150/200-240 V, 50-60 Hz.

**Current Requirements (at 50 mW Power Output):** Approx. 160 mA at 7.5 V D.C.; approx 20 mA at 220 V A.C.; approx. 30 mA at 110 V A.C.