

GRUNDIG TAPE RECORDER Model TK18

General Description: Single-speed ($3\frac{3}{4}$ in./sec.), dual-track tape recorder with electronically controlled automatic recording level control circuit. Maximum spool diameter $5\frac{3}{4}$ in. Two sockets for inputs from microphone, telephone adaptor, radio set or gramophone pick-up. High impedance and extension speaker outputs. Digital type position indicator. For operation from A.C. mains, 200–240 volts, 50 c/s. (60 c/s. adaptor kits available).

Automatic Recording Level Circuit: This arrangement eliminates the need for the use of conventional magic eye recording level indicator. The signal appearing at the anode of the triode section of the ECL86 is fed to the first half of the ECC81. This valve is biased back so that only signals of approximately 10 volts upwards will be amplified. The bias is obtained from a potential divider between H.T. and chassis: R50, R28, R29 (threshold pre-set), R30 (recording sensitivity pre-set) and R26. Output from this stage is fed to the second triode section of the ECC81 operated as a cathode follower. The resultant signal is rectified by MR2, thus charging up C6. This D.C. voltage is then fed as a control voltage to the grids of the EF86 and EF83 amplifier stages. R12 is brought into circuit when the microphone key is depressed to provide a shorter time constant for microphone recording. The purpose of switch contact *at1* is to short out the control voltage on playback. The approximate delay times are 15 minutes on radio and pick-up and 3 minutes on microphone inputs.

Dismantling: All major components are readily accessible by removing base (four screws in rubber feet) and by removing top deck. Top deck is removed as follows. Remove holding screws and gently lift off back of top cover. Depress with three fingers of each hand six operating keys, and with thumbs gently lift front lip of cover which will come off quite easily. When refitting, place cover loosely in position and press back well home on to rear lip. With three fingers of left hand depress operating keys and push left-hand corner of top deck downwards with other hand. Repeat with right-hand corner, depressing three keys with one hand and locating top deck with other. When replacing deck mounting screws, note that shortest screw must be located in front right-hand position, i.e. closest to start key.

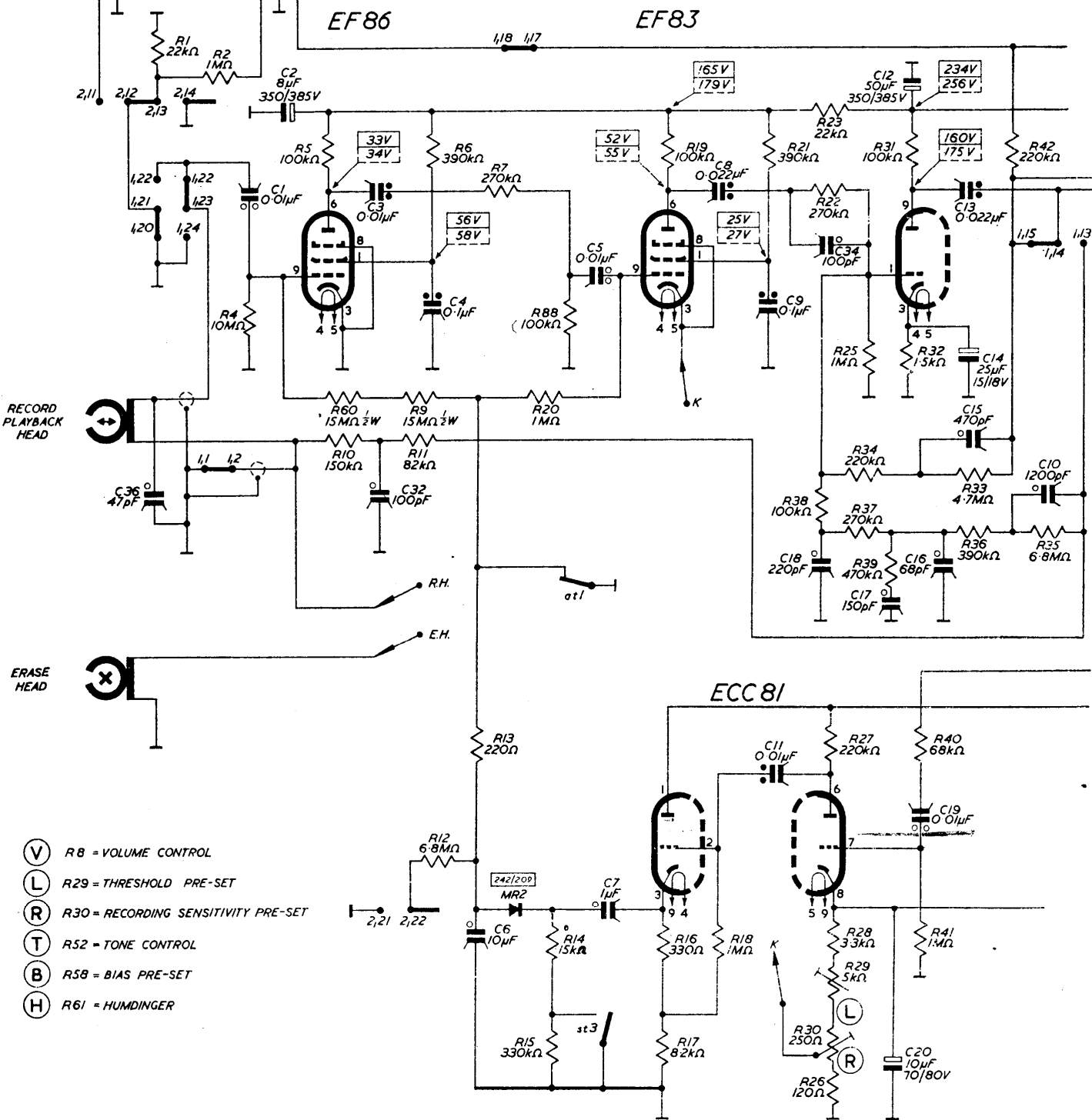
Clutches: Clutches are of friction type and will not normally need attention, other than occasional cleaning of felt clutch faces with methylated spirits to remove dirt or foreign matter. The clutch may be taken apart as follows. Removal of large clutch spring ring will release upper clutch spindle, exposing circlip of upper clutch half. Remove circlip, small washer and upper clutch half. Felt insert may now be cleaned. Before re-assembling clutch, make quite sure that plastic washers which fit between

2mV-45mV MICRO
SENSITIVITIES 100mV-2V
RADIO L.S./GRAM PU

ALL VOLTAGE MEASUREMENTS WERE
TAKEN WITH AN AVO 8 MULTI-RANGE METER

PLAYBACK VOLTAGE READINGS
RECORDING

PINS 2-3
HIGH IMPEDANCE OUTPUT 700mV



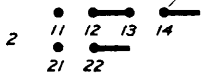
- (V) R8 = VOLUME CONTROL
- (L) R29 = THRESHOLD PRE-SET
- (R) R30 = RECORDING SENSITIVITY PRE-SET
- (T) R52 = TONE CONTROL
- (B) R58 = BIAS PRE-SET
- (H) R61 = HUMDINGER

| CONTACT SETS | 1 | 2 | 3 |
|---------------------|---|---|---|
| at=RECORDING BUTTON | r | r | |
| st=START BUTTON | r | r | a |

a = MAKE CONTACT
r = BREAK CONTACT
SHOWN IN NEUTRAL POSITION

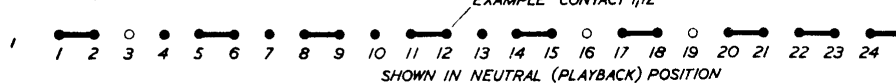
INPUT SWITCH

SHOWN IN RADIO POSITION

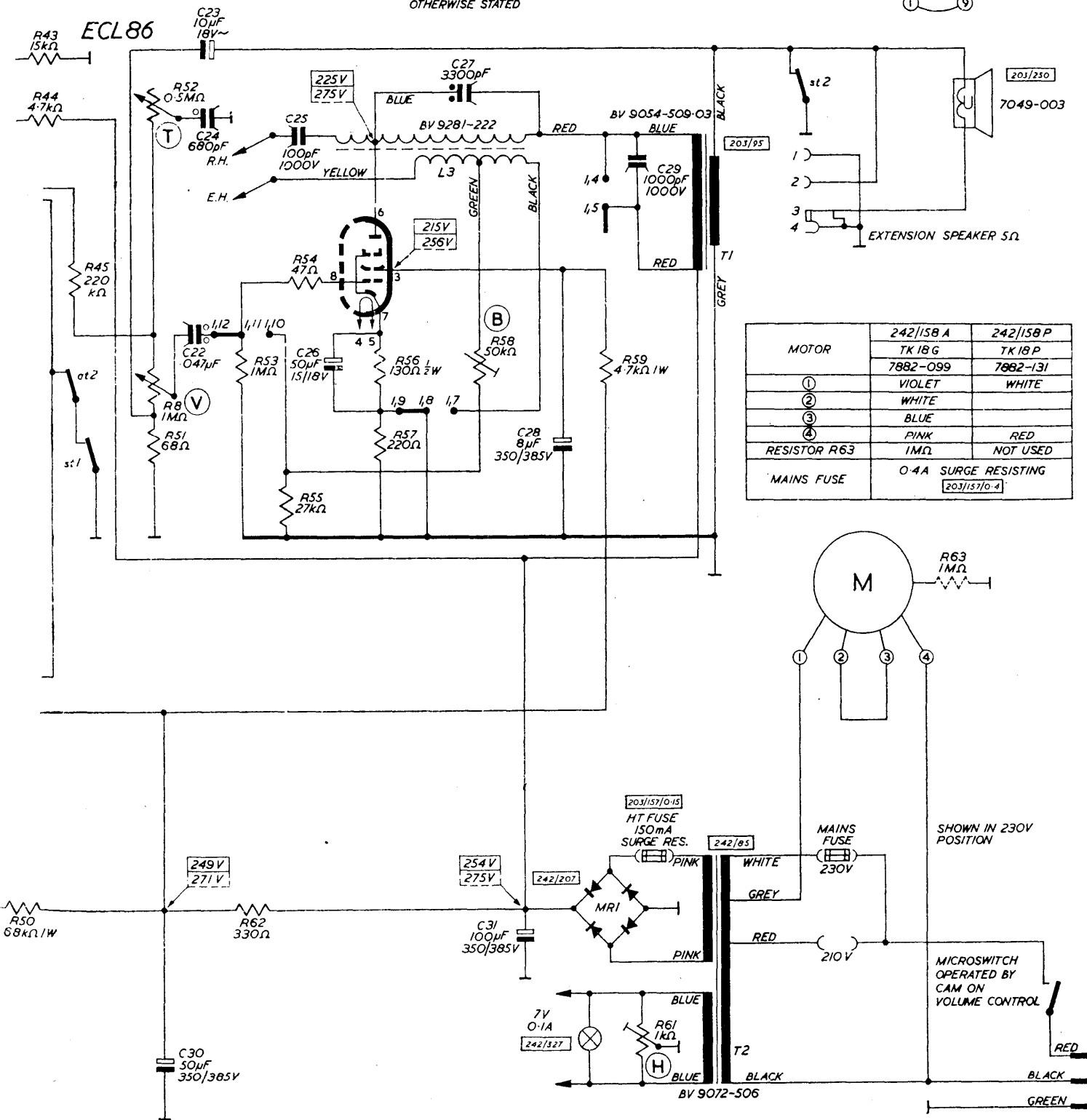
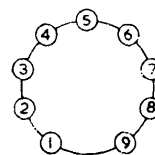
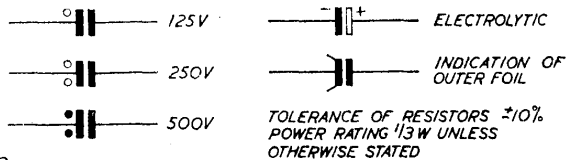


RECORD-PLAYBACK SWITCH

EXAMPLE CONTACT 1,12



upper clutch half and circlip are undamaged. They can easily affect speed of machine and cause wow or flutter.



| MOTOR | 242/158 A | 242/158 P |
|--------------|-------------------------------------|-----------|
| | | TK 18 G |
| | 7882-099 | 7882-131 |
| ① | VIOLET | WHITE |
| ② | WHITE | |
| ③ | BLUE | |
| ④ | PINK | RED |
| RESISTOR R63 | 1MΩ | NOT USED |
| MAINS FUSE | 0.4A SURGE RESISTING 203/157/0.4 | |

CIRCUIT DIAGRAM—GRUNDIG MODEL TK18

Uneven pull from either spool spindle or jerkiness may be due to dirt on the felt insert under the corresponding upper clutch half. Felt may be cleaned with methylated spirits using a small brush. It is also permissible to roughen felt with piece of fine sandpaper. Tapes recommended are "Grundig Tape", "Master Tape" or "BASF type LGS".