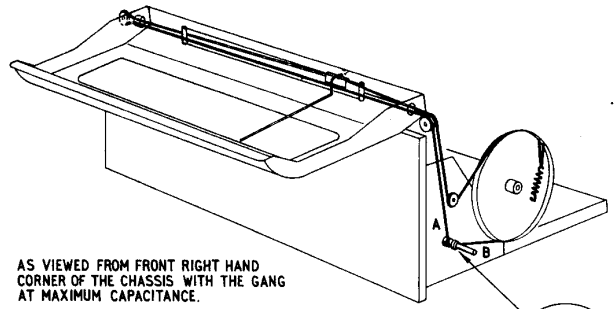




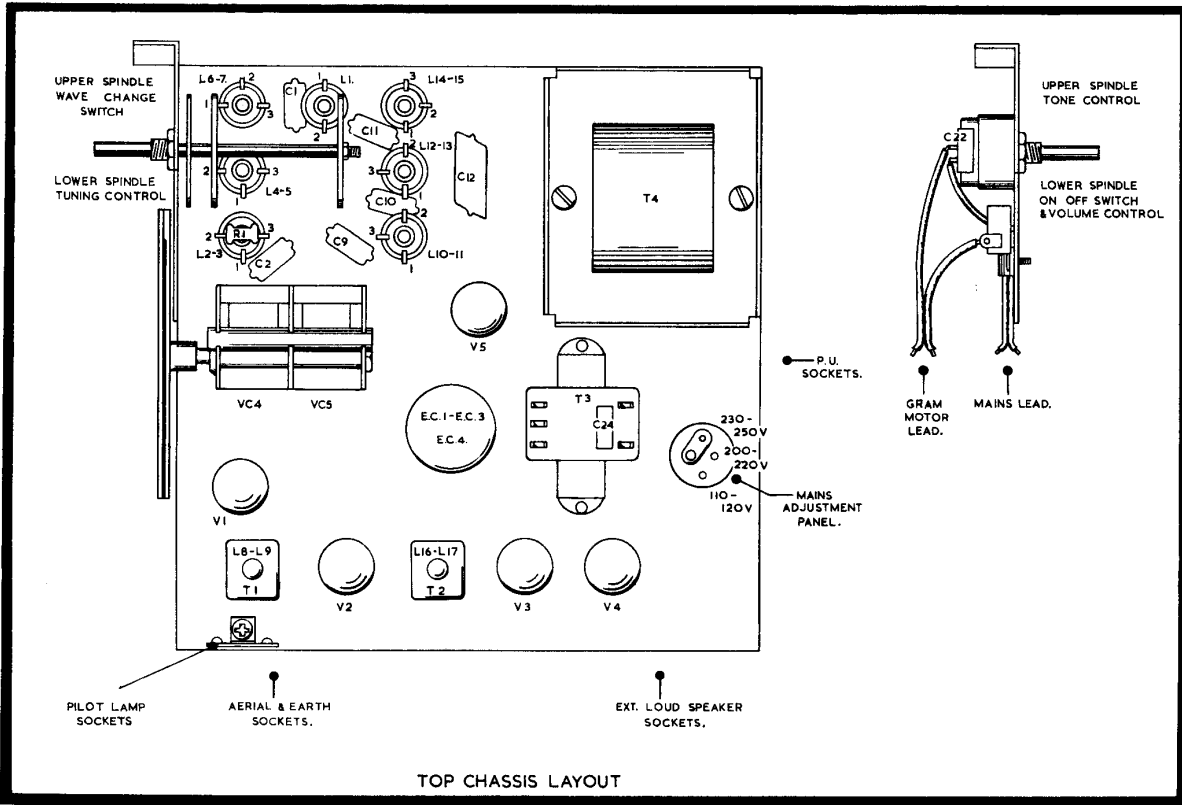
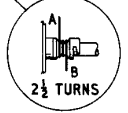
# REGENTONE Service

BULLETIN No 112.  
MODELS MULTI-99 & MULTI-99 CON.

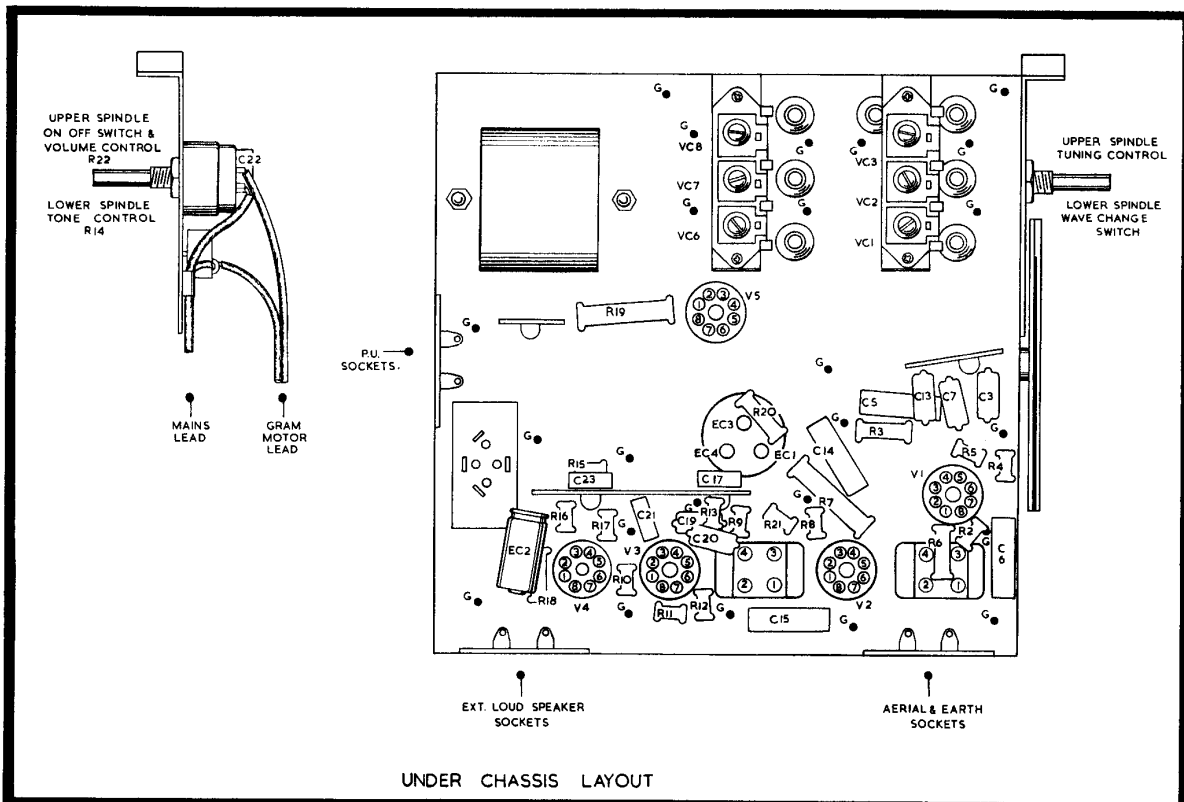


AS VIEWED FROM FRONT RIGHT HAND CORNER OF THE CHASSIS WITH THE GANG AT MAXIMUM CAPACITANCE.

LENGTH OF DRIVE CORD 71"



TOP CHASSIS LAYOUT



UNDER CHASSIS LAYOUT

WAVEBANDS:- L.W. 1000-2000 Metres.  
M.W. 200- 550 Metres.  
S.W. 6 Mc/s - 18 Mc/s.  
POWER SUPPLY:- 110-120,200/250 V. A.C.  
RECORD CHANGERS:- B.S.R. MONARCH  
'PRINCE' OR UA5.  
OUTPUT POWER:-  $2\frac{1}{2}$  WATTS. 10 Dbs.  
Negative Feedback.  
FITTED TERMINALS:- Ext. L.S. (low  
Impedance) Aerial  
and Earth  
NOTE:- An Internal Plate Aerial is  
fitted to this Model.

### Circuit Description.

The aerial input via an I.F. trap is transformer coupled on all wavebands and precedes V1 (ECH 42) operating as a frequency changer with internal coupling. The triode section of this valve operates as a grid tuned oscillator and tunes 470 Kc/s above the signal frequency on all wavebands.

Wavebands and gramophone selection are by means of Oak 'H' type switches. When switched to gramophone reproduction, the output from the pick-up head is fed via the volume control and a resistance-capacitance circuit, to the grid of the audio amplifier V3 (EBC 41).

With the switch selected to radio reproduction, the I.F. signal produced from the mixer valve is fed via the 1st I.F. transformer to the grid of V2 (EF 41 or EAF 42). The amplified I.F. signal developed across the primary of the second I.F. is fed via the secondary to the diode signal generator of V3 (EBC 41). The audio frequency component in rectified output, is developed across the diode load resistor, and passed via the volume control to the grid of the triode section of V3 for A.F. amplification. R.F. filtering is by means of the usual R.C. network. The second diode of V3 rectifies part of the signal at the anode of V2, the resulting D.C. potential developed across the load is fed back as bias to V1 and V2 for automatic gain control.

The audio frequency signal derived from the anode of V3 is fed via resistance-capacitance coupling to the grid of V4 (EL 41) for power amplification. This valve provides an output of approximately  $2\frac{1}{2}$  Watts at the secondary of the output transformer. 10 db. of negative feedback is obtained by feeding back via a resistance circuit to the anode of V3.

The H.T. supply is derived from a full wave rectifier V5 (EZ 40). Smoothing for the anode and screen grid of V4 is provided by the usual resistance-capacity filter. A further R.C. network filter supplies H.T. for V1, V2 and V3.

### INSTRUCTIONS FOR REMOVING CHASSIS.

Note.- It is not necessary to remove the escutcheon from the baffle when withdrawing the chassis.

1. Remove 4 control knobs by exerting a pull on each in turn.
2. Unplug dial lamp leads from sockets on left of chassis.
3. Disconnect mains lead to motor at plug and socket joint cleated to base of cabinet.
4. Unplug P.U. leads from right hand end of chassis.
5. Remove 2 screws securing motor base-board to brackets on sides of cabinet, and slide out the motor base-board complete with motor.
6. Remove one chassis screw which passes upwards through the cabinet base.
7. Remove 3 countersunk head wood screws securing the speaker baffle to the front of the cabinet, one in the top centre and one each immediately below the escutcheon pivot brackets.
8. Open the dial escutcheon, and draw back the complete assembly, until the escutcheon is clear of its cut-out. Skew the chassis round so that the left hand spindles will emerge first and withdraw the complete assembly.

### ALIGNMENT INSTRUCTIONS.

#### INTERMEDIATE FREQUENCY (470 Kc/s).

1. Apply signal generator output direct via 0.1 mfd. Condenser to fixed vanes of R.F. section of gang condenser and chassis.
2. Switch receiver to M.W. with gang fully opened.
3. Adjust dust cores of I.F. transformers for maximum output in normal manner.

#### INTERMEDIATE FREQUENCY TRAP.

1. Apply signal generator output (470 Kc/s) via dummy aerial to aerial and earth sockets of receiver.
2. Switch receiver to M.W. with gang condenser fully open, adjust dust core of I.F. trap for minimum output.

#### RADIO FREQUENCY ALIGNMENT.

NOTE: Connect Signal Generator via dummy Aerial to aerial and earth sockets of receiver. Switch receiver to required band and adjust signal generator to desired frequency. Load output transformer secondary with 3.0 ohms. Set volume control to maximum. With gang fully closed, set pointer to 100 degree position on scale.

#### LONG WAVE

1. Set pointer to 160 Kc/s calibration mark. Adjust oscillator and then dust cores for maximum output.
2. Set pointer to 300 Kc/s calibration mark. Adjust oscillator and then aerial trimmers for maximum output.
3. Repeat (1), (2), (1).
4. Check sensitivity and calibration at specified frequencies.

MEDIUM WAVE.

1. Set pointer to 575 Kc/s calibration mark.  
Adjust oscillator and then aerial dust cores for maximum output.
2. Set pointer to 1500 Kc/s calibration mark. Adjust oscillator and then aerial trimmers for maximum output.
3. Repeat (1), (2), (1).
4. Check sensitivity and calibration at specified frequencies.

SHORT WAVE.

1. Set pointer to 7.5 Mc/s calibration mark. Adjust oscillator and then aerial dust cores for maximum output.
2. Set pointer to 15.0 Mc/s calibration mark. Adjust oscillator and then aerial trimmers for maximum output.
3. Repeat (1), (2), (1).
4. Check sensitivity and calibration at specified frequencies.

GENERAL NOTES

1. Oscillator Frequency. The oscillator is at a higher frequency on all bands.
2. Sealing. All trimmers to be sealed in normal manner.
3. Pulling. There may be a slight tendency to "pulling" on short waves. When adjusting aerial trimmer at 15.0 Mc/s "rock" the tuning condenser.
4. Sensitivity and Calibration Check Frequencies.  
L.W. 160 Kc/s; 200 Kc/s; 300 Kc/s.  
M.W. 575 Kc/s; 990 Kc/s; 1500 Kc/s.  
S.W. 7.5 Mc/s; 10.0 Mc/s; 15.0 Mc/s.
5. Calibration Error.  
L.W. Alignment frequencies - Thickness of pointer. Check point - 5/32"  
M.W. Alignment frequencies - Thickness of Pointer. Check Point - 3/32".  
S.W. Alignment frequencies - 1/16".

Iron Dust Cores.

With one exception, the dust cores of all oscillator and aerial coils are to be adjusted to the second tuneable signal when the dust cores are screwed into the coil from the top of the former.

The exception is the S.W. oscillator coil. On this band, the iron dust core is screwed into the coil from the top of the former.

REPLACEMENT PARTS.

- R.148616 Bkt. P/L. Mtg.  
R.142504 Clip Knob.  
R.142502 Clip Pulley Ret.  
R.142576 Clip Scale.  
R.142507 Clip Condenser.  
RA.450365 Coil L.W. Ae.  
RA.450250 Coil M.W. Ae.  
RA.450366 Coil S.W. Ae.  
RA.450367 Coil L.W. Osc.  
RA.450368 Coil M.W. Osc.  
RA.450369 Coil S.W. Osc.  
RA.450364 Coil I.F. Trap.  
R.127521 Condenser Gang.  
R.128516 " 3 x 4-40 pF.

REPLACEMENT PARTS - Contd.

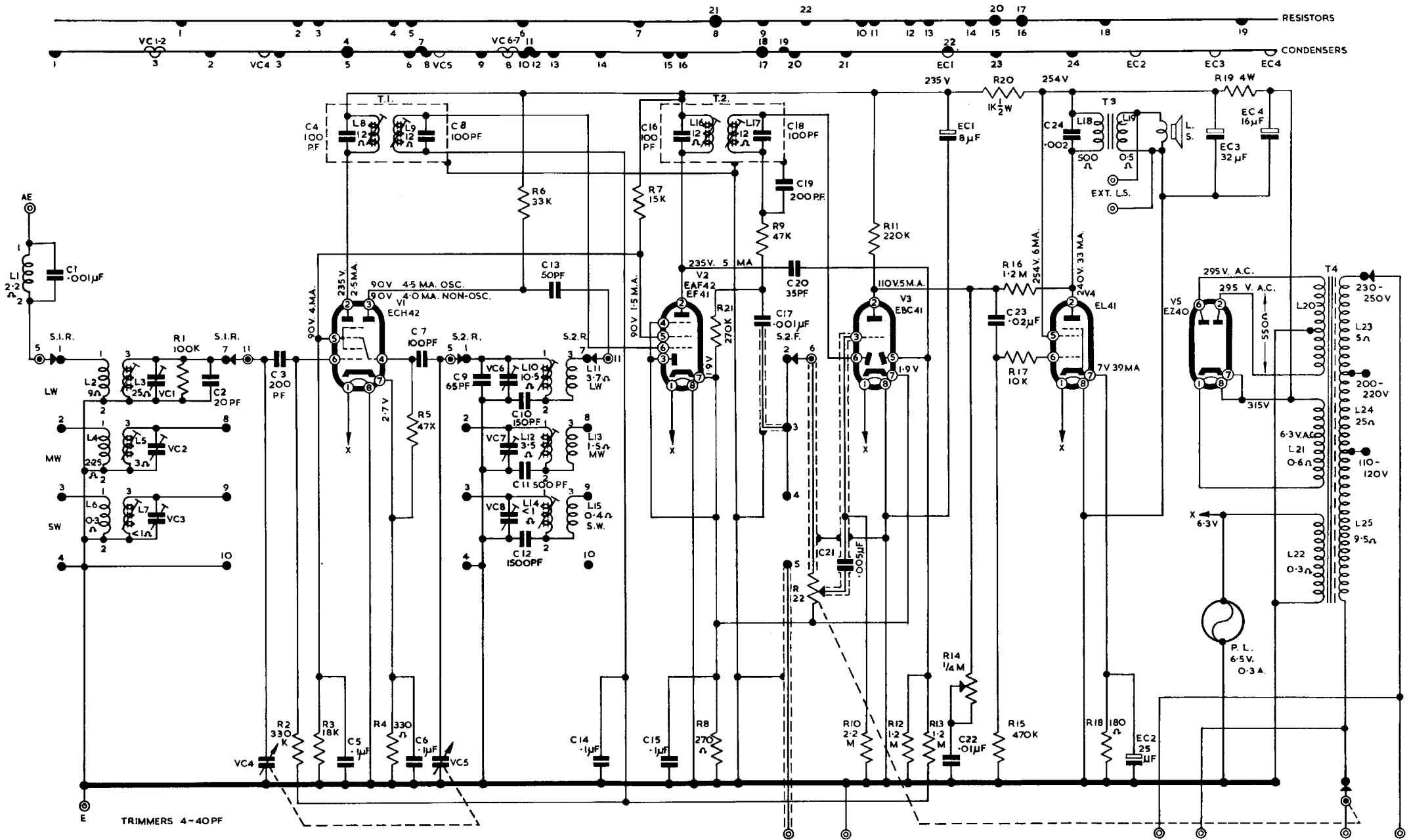
- R.301508 Core Dust.  
R.125555 Drive 2 Speed.  
R.125557 Drum 4 1/2".  
R.126639 Glass Scale.  
R.164511 Grommet.  
R.175595 Knob W/C. Brown.  
R.175578 Knob W/C. Cream.  
R.169511 Knob Plain Brown.  
R.169513 Knob Plain Cream.  
R.148612 Pivot Bracket L.H.  
R.148613 Pivot Bracket R.H.  
R.138501 Plug. Volt. Sel.  
RA.407022 Pointer & Carriage.  
R.125566 Pulley Idler.  
R.190540 Speaker 6 1/2".  
R.190541 Speaker 8".  
R.122503 Spring Cord Tension.  
R.122509 Spring Return.  
R.159613 Transformer Mains.  
R.159614 Transformer Output.  
RA.415031 Transformer I.F. 1 & 2.

RESISTORS

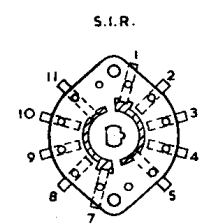
Part No.	Value	Wattage	Ref.
R.132552	1K	4	R.19
R01.15310	15K	2	R.7.
R08.33310	33K	1/4	R.6.
R08.18310	18K	1/4	R.3.
R08.10210	1K	1/4	R.20.
R08.18110	180 Ohms	1/4	R.18.
R09.22520	2.2M	1/4	R.10.
R09.12520	1.2M		R.12,13.
R09.12510	1.2		R.16.
R09.47420	470K		R.15.
R09.27420	270K		R.21.
R09.33420	330K		R.2.
R09.22420	220K		R.11.
R09.47320	47K		R.9.
R09.47310	47K		R.5.
R09.10420	100K		R.1.
R09.10320	10K		R.17.
R09.33110	330 Ohms		R.4.
R09.27110	270 Ohms		R.8.
R09.82320	82K		-
R.158617	1M S.P.S.T. VOL.		R.22.
R.158618	1/4 TONE		R.14.

CONDENSERS.

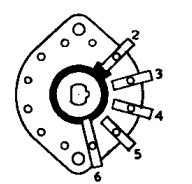
Part No.	Value	Ref.
R.129573	200 pF	C.19.
R.129685	200 pF	C.3.
R.129535	100 pF	C.7.
R.129527	50 pF	C.13.
R.129516	35 pF	C.20.
R.129702	0.1 mfd. 350V.	C.14,5,6,15
R.129745	0.001 mfd. 500V.	C.17.
R.129734	0.02 500V.	C.23.
R.129719	0.005 500V.	C.21.
R.129708	0.002 1000V.	C.24.
R.129701	0.01 500V.	C.22.
R.129815	0.001 Moulded M.	C.1.
R.130522	20 pF	C.2.
R.130520	150 pF	C.10.
R.130521	65 pF	C.9.
R.130519	500 pF	C.11.
R.129538	1500 pF	C.12.
R.131600	25 mfd. 25V.	E.C.2.
R.131601	16 x 32 x 8 mfd. 350V.	E.C.1.
		3,4.



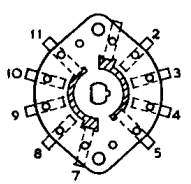
TRIMMERS 4-40PF



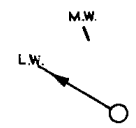
S.I.R.



S.2.F.



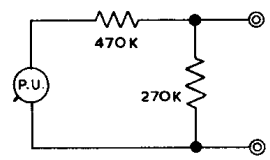
S.2.R.



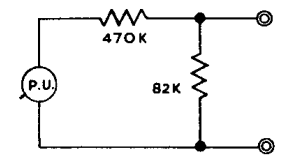
M.W. S.W.

GRAM.

SWITCH POSITION



PICK-UP FILTER FOR GARRARD RC110.



PICK-UP FILTER FOR BSR 'MONARCH PRINCE'

MULTI-99.

SWITCH WAFERS AS VIEWED FROM KNOB END OF SWITCH

SWITCH POSITION

PICK-UP FILTER FOR GARRARD RC110.

PICK-UP FILTER FOR BSR 'MONARCH PRINCE'

RESISTORS

CONDENSERS

AC. MAINS. 110-250V