

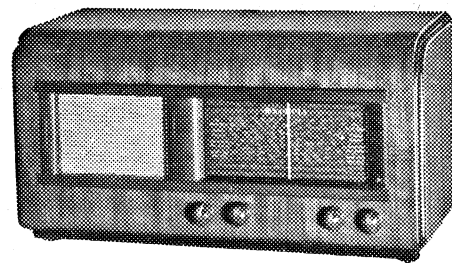
TECHNICAL INFORMATION  
AND  
SERVICE DATA

**RADIOLA**

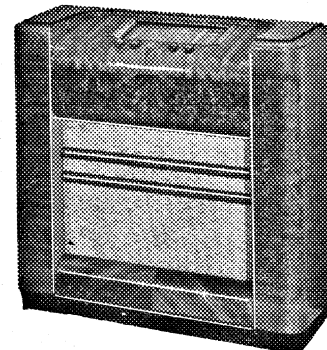
**618-T and 721-C**

**FIVE VALVE, TWO BAND  
A.C. OPERATED SUPERHETERODYNES**

ISSUED BY  
**AMALGAMATED WIRELESS (A/SIA) LTD.**



618-T



721-C

**ELECTRICAL SPECIFICATIONS.**

FREQUENCY RANGES: Medium Wave ..... 540-1600 Kc/s  
(555-187.5M)

Short Wave ..... 6-18 Mc/s  
(50-16M)

INTERMEDIATE FREQUENCY ..... 455 Kc/s

POWER SUPPLY RATING ..... 200-260 volts,  
50-60 C.P.S.

(Instruments available for other voltage and  
frequency ratings.)

POWER CONSUMPTION ..... 60 watts

DIAL LAMPS ..... 6.3 volts, 0.25  
amp. M.E.S.

VALVE COMPLEMENT:

- (1) 6J8GA Converter
- (2) 6SK7GT I.F. Amplifier
- (3) 6SQ7GT Detector, A.F. Amplifier, A.V.C.
- (4) 6V6GT Output
- (5) 6X5GT Rectifier

LOUDSPEAKER:

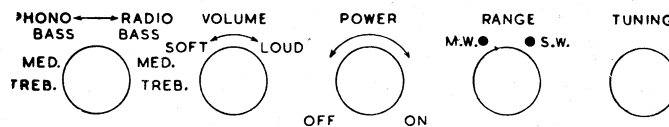
Model 618-T 7 inch—Code No. AY38  
Transformer—XA2  
V.C. Impedance 3 ohms at 400 C.P.S.  
Permanent Magnet

Model 721-C 12 inch—Code No. AU44 or AU45  
Transformer—TU202  
V.C. Impedance 2.2 ohms at 400 C.P.S.  
Permanent Magnet

UNDISTORTED POWER OUTPUT: 3 watts

**MECHANICAL SPECIFICATIONS.**

	Height	Width	Depth
Cabinet Dimensions (inches):			
Model 618-T	10½	20½	8¾
Model 721-C	31½	33½	12½
Chassis Base Dimensions (inches)	2½	11	5½
Carton Dimensions (inches)			
Model 618-T	11	20½	11
Model 721-C	32	35	13¾
Weight (nett lbs.):			
Model 618-T			26
Model 721-C			56
Cabinet Finish	Walnut Veneer		



**CONTROLS MODELS 618-T & 721-C**

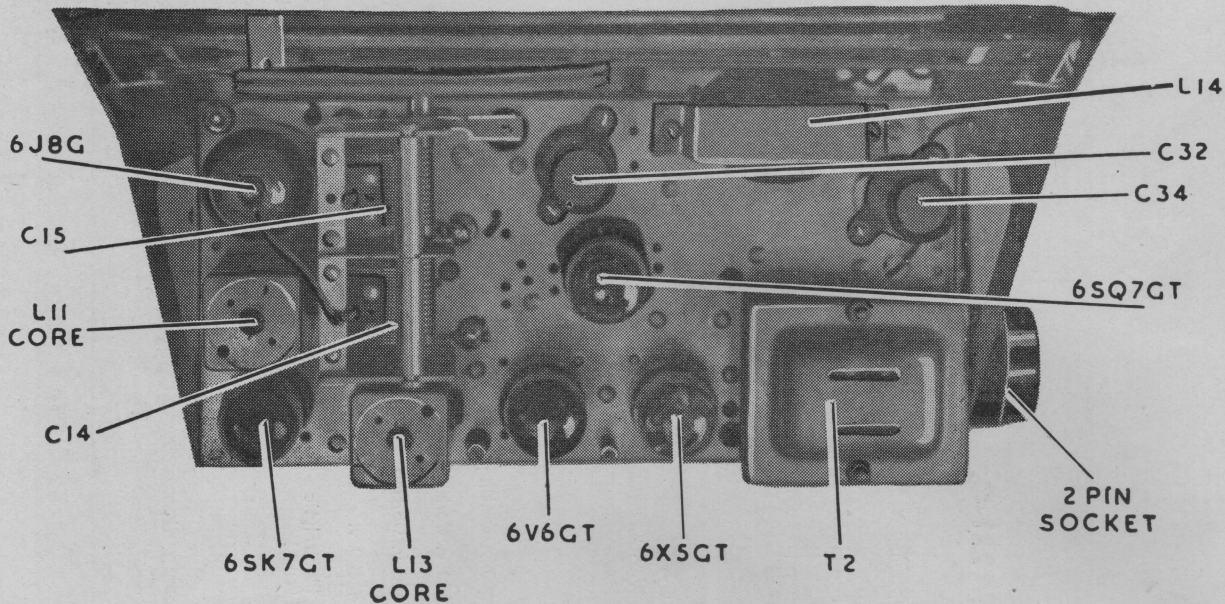
**GENERAL DESCRIPTION.**

The models 618-T and 721-C are table and console models respectively. Features of design include: Tropic-proof construction, automatic volume control, magnetite cores in I.F. transformers and broadcast oscillator coils, air-dielectric trimming capacitors, straight-line edge lighted

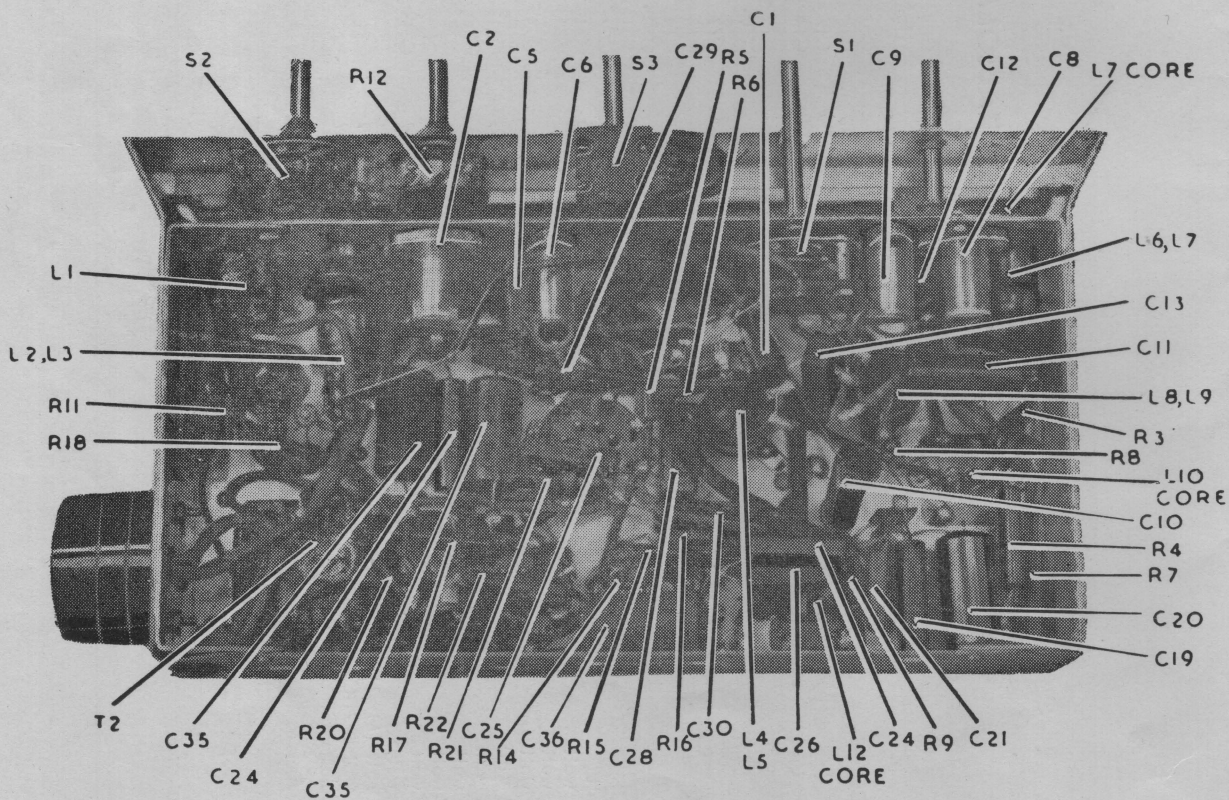
dial. The receivers also incorporate a 200-260 volts, 2-pin power socket to enable either an Electric Clock, F.M. Tuner or Record Player to be connected by means of the 2-pin plug supplied.

# CIRCUIT CODE—RADIOLAS 618-T & 721-C.

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.	
<b>INDUCTORS</b>									
L1	I.F. Filter (including C4)	9382	R12	0.5 megohm—Volume Control, (721-C)	7690	C12	70 uuF Mica	C33	500 uuF Mica (721-C)
L2, L3	Aerial Coil, 540-1600 Kc/s	15454	R13	10 megohms, 1 watt		C13	470 uuF Mica Padder, $\pm 2\frac{1}{2}\%$	C34	8 uF 525 P.V. Electrolytic
L4, L5	Aerial Coil, 6-18 Mc/s	15456	R14	325 ohms, 3 watt		C14	12-430 uuF Tuning (618-T)	C35	0.1 uF Paper, 400 v. working
L6, L7	Oscillator Coil, 540-1600 Kc/s	9206A	R15	50,000 ohms, $\frac{1}{2}$ watt		C14	12-430 uuF Tuning (721-C)	C36	25 uF 40 P.V. Electrolytic
L8, L9	Oscillator Coil, 6-18 Mc/s	15458	R16	0.5 megohm, $\frac{1}{2}$ watt		C15	12-430 uuF Tuning (618-T)	<b>TRANSFORMERS</b>	
L10, L11	1st I.F. Transformer	22700	R17	50,000 ohms, 1 watt		C15	12-430 uuF Tuning (721-C)	T1	Loudspeaker Transformer (618-T)
L12, L13	2nd I.F. Transformer	22703	R18	50 ohms, 3 watt		C16	0.1 uF Paper, 400 v. working		XAZ
L14	Filter Choke	TU17	R19	100 ohms, $\frac{1}{2}$ watt		C17	70 uuF Mica	T1	Loudspeaker Transformer (721-C)
<b>RESISTORS</b>									
R1	200 ohms, $\frac{1}{2}$ watt		R20	100 ohms, $\frac{1}{2}$ watt		C18	70 uuF Mica	T2	Power Transformer
R2	32,000 ohms, $\frac{1}{2}$ watt		R21	0.25 megohm, 1 watt		C19	0.05 uF Paper, 200 v. working		TU202
R3	25,000 ohms, 1 watt		R22	1.0 megohm, 1 watt		C20	0.1 uF Paper, 400 v. working		17859A
R4	25,000 ohms, 2 watt		R23	0.2 megohm, $\frac{1}{2}$ watt (721-C only—not used in 618-T)		C21	9 uuF Mica		17861A
R5	1.6 megohms, $\frac{1}{2}$ watt		<b>CAPACITORS</b>						
R6	2.5 megohms, $\frac{1}{2}$ watt		C1	4 uuF Mica		C22	70 uuF Mica	<b>LOUDSPEAKERS</b>	
R7	20,000 ohms, 1 watt		C2	3-25 uuF Air Trimmer	19659	C23	70 uuF Mica	12 inch Permanent Magnet (721-C)	
R8	0.1 megohm, $\frac{1}{2}$ watt		C3	0.05 uF Paper, 200 v. working		C24	100 uuF Mica	7 inch Permanent Magnet (618-T)	
R9	50,000 ohms, $\frac{1}{2}$ watt		C4	50 uuF Silvered Mica		C25	200 uuF Mica	<b>SWITCHES</b>	
R10	20,000 ohms, $\frac{1}{2}$ watt		C5	9 uuF Mica		C26	100 uuF Mica	Range Switch (618-T)	
R11	0.2 megohm, $\frac{1}{2}$ watt (618-T)		C6	3-25 uuF Air Trimmer	19659	C27	0.01 uF Paper, 600 v. working	Range Switch (721-C)	
R12	0.5 megohm, $\frac{1}{2}$ watt (721-C)		C7	0.1 uF Paper, 200 v. working		C28	50 uuF Mica	PU/Tone Switch (618-T)	
			C8	3-25 uuF Air Trimmer	19659	C29	0.01 uF Paper, 600 v. working	PU/Tone Switch (721-C)	
			C9	3-25 uuF Air Trimmer	19659	C30	0.02 uF Paper, 600 v. working	Power Switch (618-T)	
			C10	4000 uuF Mica Padder, $\pm 2\frac{1}{2}\%$		C31	0.01 uF Paper, 600 v. working (618-T)	Power Switch (721-C)	
			C11	0.05 uF Paper, 400 v. working	6490	C31	0.0025 uF Paper, 600 v. working (721-C)		



CHASSIS TOP VIEW MODELS 618-T/721-C



CHASSIS UNDERNEATH VIEW MODELS 618-T/721-C

## SOCKET VOLTAGES.

Valve	Cathode to Chassis Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Heater Volts
6J8GA Converter: M.W. ....	1.5	80	240	1.0	6.3
S.W. ....	2.0	80	240	1.3	6.3
Oscillator: M.W. ....	—	—	115	5.0	—
S.W. ....	—	—	115	5.0	—
6SK7GT I.F. Amplifier	0	80	240	5.0	6.3
6SQ7GT 2nd Det., A.V.C. A.F. Amp.	0	—	90*	0.6	6.3
6V6GT Output	13	240	225	40.0	6.3
6X5GT Rectifier	300	—	280 (A.C.)	—	6.3

Volts across back-bias resistor R18—3.0.

Total H.T. Current—60 mA.

Measured at 240 volts A.C. supply. No signal input. Volume control maximum clockwise. Voltmeter 1000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

\*This reading may vary depending on the resistance of the voltmeter used.

## D.C. RESISTANCE OF WINDINGS.

Winding	D.C. Resistance in ohms
Aerial Coil (M.W.):	
Primary (L2)	30
Secondary (L3)	4
Aerial Coil (S.W.):	
Primary (L4)	4
Secondary (L5)	*
Oscillator Coil (M.W.):	
Primary (L6)	2
Secondary (L7)	6
Oscillator Coil (S.W.):	
Primary (L8)	*
Secondary (L9)	*
I.F. Transformer Windings	10
I.F. Filter (L1)	17.5†
Power Transformer (T2):	
Primary	50
Secondary	400
Loudspeaker Input Transformer (T1):	
XA2 Primary	450
XA2 Secondary	*
TU202 Primary	400
TU202 Secondary	*

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

\*Less than 1 ohm.

†In some receivers this reading may be as high as 60 ohms.

## MECHANICAL REPLACEMENT PARTS

Item	Part No.	Item	Part No.
Cabinet: Model 618-T .....	C89	Dial, pointer assembly: Model 618-T .....	20522
Model 721-C .....	C86	Model 721-C .....	20331
Cable, aerial .....	15452	Dial, scale: Model 618-T .....	23340
Cable, power: Model 618-T .....	23926	Model 721-C .....	23342
Model 721-C .....	24605	Drum, drive: Model 618-T .....	20130
Cable, speaker .....	19188	Model 721-C .....	15684
Cable, volume: Model 618-T .....	20425	Knob .....	4589
Model 721-C .....	20416	Socket, valve .....	4704
Chassis, end:		Socket, valve cushion .....	20142
Model 618-T—Left hand .....	24240	Spindle, assembly, drive:	
Right hand .....	22417	Model 618-T .....	20505
Model 721-C—Left hand .....	24241	Model 721-C .....	20339
Right hand .....	20316	Strip, tag: 1 way .....	7628
Clip, grid .....	7459	2 way .....	8863
Dial, frame assembly: Model 618-T .....	20514	3 way .....	8821
Model 721-C .....	20343 G	Terminal, spring .....	5458

# ALIGNMENT PROCEDURE.

## Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Realignment should be necessary only when components in tuned circuits are repaired or replaced or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be readjusted unless by skilled operators using specialised equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action.

Also, keep the volume control in the maximum clockwise position.

## Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911, or
- (2) A.W.A. Modulated Oscillator, type J6726.  
If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and, for short wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.
- (3) A.W.A. Output Meter, type 2M8832.

## ALIGNMENT TABLE.

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output
1	6J8GA*	455 Kc/s	540 Kc/s	L13 Core
2	6J8GA*	455 Kc/s	540 Kc/s	L12 Core
3	6J8GA*	455 Kc/s	540 Kc/s	L11 Core
4	6J8GA*	455 Kc/s	540 Kc/s	L10 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (L7)†
6	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C8)
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C2)
Repeat adjustments 5, 6 and 7.				
8	Aerial Terminal	16 Mc/s	16 Mc/s	H.F. Osc. Adj. (C9)‡
9	Aerial Terminal	16 Mc/s	16 Mc/s	H.F. Aer. Adj. (C6)§

\*With grid clip connected. A 0.001 uF capacitor should be connected in series with the "high" side of the test instrument.

†Rock the tuning control back and forth through the signal.

‡Use minimum capacity peak if two can be obtained. Check to determine that the trimmer has been adjusted to correct peak by tuning the receiver to approximately 15.09 Mc/s. where a weaker signal should be received.

§Use maximum capacity peak if two can be obtained.

## CONNECTION TO POWER SUPPLY.

The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at the frequency stated on the label within the cabinet. The power supply connections are shown in the accompanying diagram.

## CHASSIS REMOVAL.

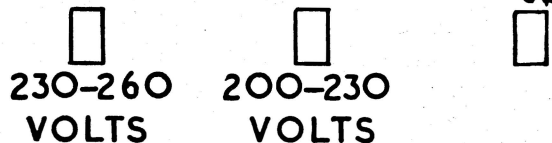
### Model 618-T.

- (1) Remove the control knobs—each is held by a set-screw.
- (2) Disconnect the cable from the loudspeaker.
- (3) The chassis is held in the cabinet by two screws. Remove these and withdraw the chassis.

### Model 721-C.

- (1) Remove the control knobs—each knob is held by a set-screw.
- (2) Disconnect the cable from the loudspeaker.
- (3) The chassis is held in the cabinet by four winged nuts, two at each end of the dial frame assembly. Removal of these enables the chassis to be withdrawn.

**RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES**

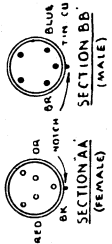
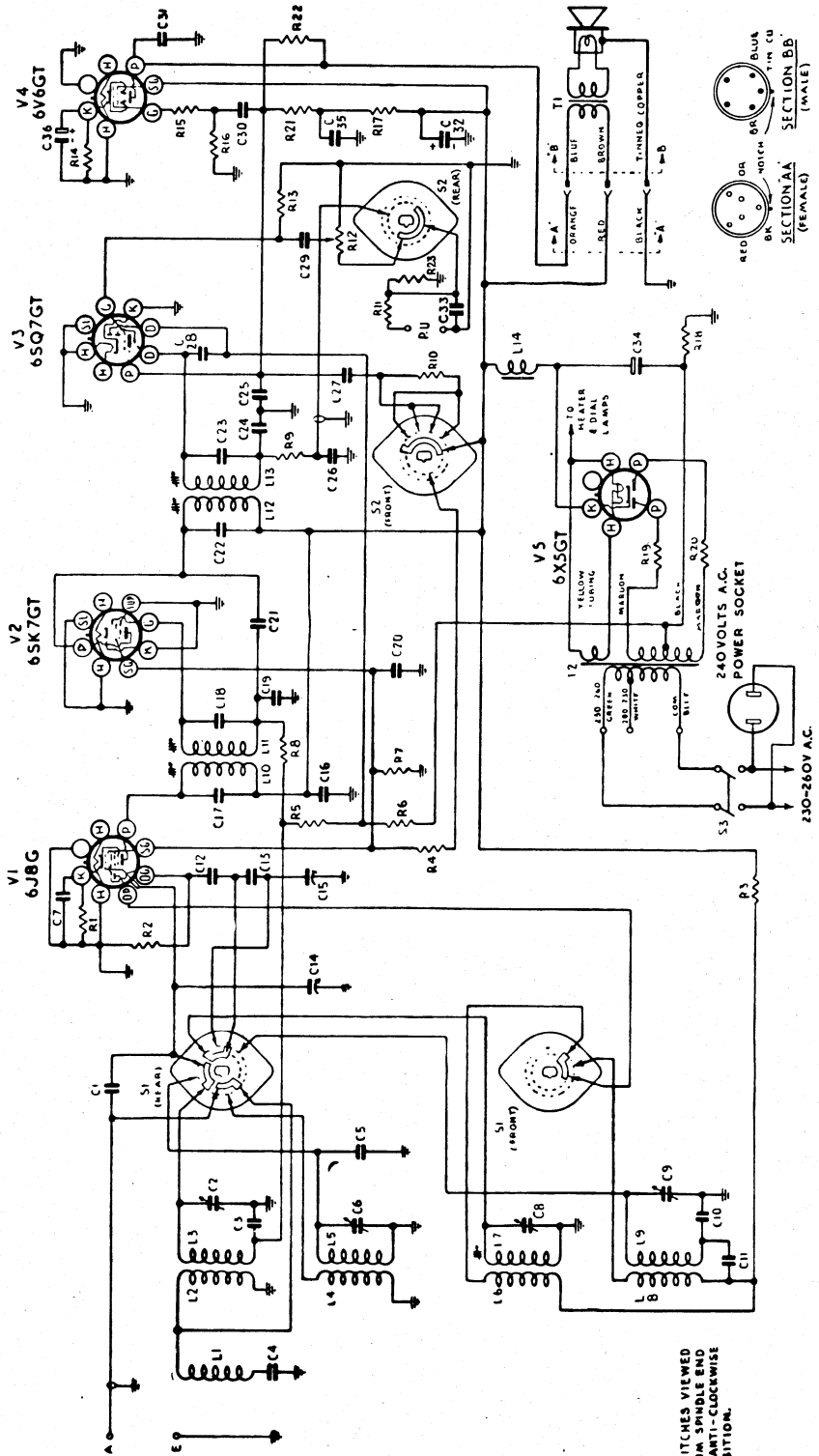


## DIAL POINTER ADJUSTMENT.

The dial pointer is held in position by two rubber-lined clips. To alter the position of the pointer, loosen the two holding clips slightly and move the pointer in the required direction. It is important to reclamp the clips after any adjustment of the dial pointer.

## DRIVE CORD REPLACEMENT.

Follow the diagram which is affixed to the back of the dial frame assembly. This shows the route of the cord and the method of attachment.



○ SWITCHES VIEWED FROM SPINDLE END IN ANTI-CLOCKWISE POSITION.