

S Grant

MURPHY service information

MURPHY 'CONSTELLATION' MODEL SGS76 SERVICE INFORMATION:

REFERENCE LIST FOR CIRCUIT DIAGRAM:

Abbreviations:

cer.	ceramic	elect.	electrolytic
p.s.m.	protected silver mica	v.d.c.	d.c. voltage rating
tub.	paper tubular	W.	wattage rating
m.tub.	metallised paper tubular	-ve	negative temperature coefficient.
log.	logarithmic law		
i.s.tub	insulated sealed paper tubular (metal case).		

<u>Part No.</u>	<u>Circuit No.</u>	<u>Value</u>	<u>Tolerance & Remarks</u>	
27269	R1	100K ohm	.4W.	20%
25445	R2	22K ohm	.4W.	10%
27397	R3	470K ohm	.4W.	20%
24517	R4	82 ohm	.4W.	10%
24933	R5	1K ohm	.4W.	10%
26885	R6	1K ohm	.4W.	20%
27397	R7	470K ohm	.4W.	20%
25439	R8	18K ohm	1.5W.	10%
25669	R9	82K ohm	.4W.	10%
26725	R10	150 ohm	.4W.	20%
24229	R11	15 ohm	.4W.	10%
25471	R12	22K ohm	1.5W.	10%
27269	R13	100K ohm	.4W.	20%
26533	R14	15 ohm	.4W.	20%
27525	R15	2.2M ohm	.4W.	20%
27397	R16	470K ohm	.4W.	20%
27525	R17	2.2M ohm	.4W.	20%
27237	R18	68K ohm	.4W.	20%
27333	R19	220K ohm	.4W.	20%
24613	R20	150 ohm	.4W.	10%
27653	R21	10M ohm	.4W.	20%
27653	R22	10M ohm	.4W.	20%
24613	R23	150 ohm	.4W.	10%
26021	R24	680K ohm	.4W.	10%
26021	R25	680K ohm	.4W.	10%
27269	R26	100K ohm	.4W.	20%
27269	R27	100K ohm	.4W.	20%
25061	R28	2.2K ohm	.4W.	10%
27269	R29	100K ohm	.4W.	20%
27269	R30	100K ohm	.4W.	20%
25125	R31	3.3K ohm	.4W.	10%
27205	R32	47K ohm	.4W.	20%
27205	R33	47K ohm	.4W.	20%

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Part No.	Circuit No.	Value	Tolerance & Remarks
52631	C33	150 pf	p.s.m. \pm 5% 350 v.d.c.
49447	C34	.01 mf	m.tub. \pm 25% 150 v.d.c.
52646	C35	100 pf	p.s.m. \pm 20% 350 v.d.c.
49454	C37	.04 mf	m.tub. \pm 25% 150 v.d.c.
56159	C38	16 mf	elect. + 50% 275 v.d.c. - 20% combined with C53
49455	C39	.02 mf	m.tub. \pm 25% 150 v.d.c.
49455	C40	.02 mf	m.tub. \pm 25% 150 v.d.c.
66165	C41	47 pf	cer. \pm 20% G.P.1. 500 v.d.c.
66165	C42	47 pf	cer. \pm 20% G.P.1. 500 v.d.c.
49441	C43	.1 mf	m.tub. \pm 25% 150 v.d.c.
49441	C44	.1 mf	m.tub. \pm 25% 150 v.d.c.
53066	C45	.02 mf	i.s.tub. \pm 20% 350 v.d.c.
49455	C46	.02 mf	m.tub. \pm 25% 150 v.d.c.
49455	C47	.02 mf	m.tub. \pm 25% 150 v.d.c.
53066	C48	.02 mf	i.s.tub. \pm 20% 350 v.d.c.
66177	C49	470 pf	cer. \pm 20% G.P.1. 500 v.d.c.
66177	C50	470 pf	cer. \pm 20% G.P.1. 500 v.d.c.
56168	C51	50 mf	elect. + 50%) - 20%) 12 v.d.c.
56168	C52	50 mf	elect. + 50%) - 20%) 12 v.d.c.
56159	C53	16 mf	elect. + 50% 275 v.d.c. - 20% combined with C41
41418	C54	.005 mf	tub. \pm 25% 1000 v.d.c.
41418	C55	.005 mf	tub. \pm 25% 1000 v.d.c.
	(C56	40 mf	elect.)
74816	(C57	40 mf	elect.) \pm 50%) 350 v.d.c.
	(C58	20 mf	elect.) - 20%)
41419	C59	.01 mfd.	tub. \pm 25% 1000 v.d.c.
	(VC1		
74795	(VC2	580 pf)	Variable 3-ganged capacitor
	(VC3	Swing)	
	(VR1	IM log.)	Matched ganged potentiometer (Vol. Control)
RP2026	(VR2	IM log.)	
	(VR3	250K log.)	Ganged potentiometer w/s. (Treble Control)
RP2027	(VR4	250K log.)	
	(VR5	2M reverse log.)	Ganged potentiometer (Bass control)
RP2029	(VR6	2M reverse log.)	
	(VR7	250K linear)	Ganged potentiometer (balance control)
RP2028	(VR8	250K linear)	

Part No.	Circuit No.	Description
16882	LP.1, 2, 3 & 4	Panel Lamp
65330		Z10ZZ/2868 Loudspeaker
RP1139	V1	Valve 6F19 or EF85
RP1132	V2	Valve 6C9
RP1144	V3	Valve 6FD12 or EBF89
RP1140	V4	Valve 6L13 or ECC83
RP1136	V5	Valve EL41
RP1136	V6	Valve EL41
RP1142	V7	Valve EM81 (Alternative).
RP1148	V7	Valve EM85
RP1227	SK1	P.U. Socket 3-pin (Cinch 75/443)
RP1226	SK2	Tape Playback 2-pin (Cinch 76/092)
74792	SK3	Tape Record Socket 2-pin (Cinch 2624)
74794	SK4	L.S. Socket - 4-pin (Cinch 75/444)
74794	SK6	L.S. Socket (RH) 4-pin (Cinch 75/444)
74792	SK7	Tape Record Socket 2-pin (Cinch 2624)
RP1226	SK8	Tape Playback Socket 2-pin (Cinch 76/092)
74794	SK9	L.S. Socket (LH) 4-pin (Cinch 75/444)
RP1229	PL/SK1	Plug-PU 3-pin (Cinch 2735)
RP1228	PL/SK2	Plug - TP. 2-pin (Cinch 76/046)
74790	PL/SK3	Plug - TR. 2-pin (Cinch 2724)
74793	PL/SK4	Plug - Spkrs. 4-pin (Cinch 2745)
RP1028	PL5	Plug - 3-pin power
74793	PL/SK6	Plug - Spkr. 4-pin (Cinch 2745)
74790	PL/SK7	Plug - TR. 2-pin (Cinch 2724)
RP1228	PL/SK8	Plug - TP. 2-pin (Cinch 76/046)
74793	PL/SK9	Plug - Spkr. 4-pin (Cinch 2745)
74791		Shell (For Plugs PL/SK3, PL/SK4, PL/SK6 PL/SK7, PL/SK9.
RP1230		Shell (For PL/SK1)
RP1210	M1	Garrard Unit RC88D 4-speed
RP2652		Garrard GCS10 Stereo Cartridge in Moulding
63625	S1	Switch, Wave Change
RA2779		Assembly of RF. Unit, Wired.
RP2641	S2	Switch, R/G/TP., 4-pole, 3 pos.
60506	L1	11M Aerial
60507	L2	13M Aerial
60508	L3	16M Aerial
60509	L4	19M Aerial
60510	L5	25M Aerial
60511	L6	31M Aerial
	(L7 pri.	'S' Aerial transformer
	(L8 sec.	'S' Aerial transformer
RM1309	(L9 pri.	'M' Aerial transformer
	(L10 sec.	'M' Aerial transformer

Part No.	Description
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DIAL GROUP Contd.:

RM1236	Flywheel spindle
RM1237	Flywheel spindle bearing
42848	Flywheel spindle bearing grommet
103370	Flywheel screw
59696	Lampholder assy.
RP1024	Pulley (plastic)
RM1242	Bracket for rt. hand Pulley
RM1243	Bracket for lt. hand Pulley
RM1233	Pulley bracket
RP1025	Pulley rivet
RM1246	Reflector assembly
72024	Tuning indicator escutcheon
19462	Tuning indicator retaining spring
62710	Tuning indicator socket - B9A
RM1238	Tuning drum assembly

CONTROL GROUP:

RP2887	Fingerguard (balance control)
RP2886	Fingerguard
74828	Knob - small (Tone 2, Tuning 1, less grub screw)
RA3002	Knob - small (Wave change)
RA3003	Knob - R/G
10413	Knob grub screw
34588	Knob felt washer - small

MISCELLANEOUS:

RC2757	Cabinet (Mahogany)
RC2756	Cabinet (Walnut)
RM2773	Cabinet back
RP2801	2 pces 13" x 31" Fabric - speaker panels
RP1645	Label, Tape & Ae. & Speaker
RP1647	Label, Extension Speaker
RA3009	Bin Support
60556	Rivnut (R.F. unit)
RP1098	Tag - Aerial
RP1099	Tag - Earth
51451	Valveholder - B8A
59142	Valveholder - B9A (R.F. Unit)
RP2771	Valve location chart
RA3004	Spring, Bin Support
RA3005	Spring, Bin Support

MURPHY "CONSTELLATION" MODEL SGS76 CIRCUIT ALIGNMENT TABLE:

CIRCUIT	NOTES	SIG. GEN. FREQUENCY	SIG. GEN. TERMINATION	CONNECT SIG. GEN. TO	SCALE SETTING	ADJUSTMENTS
2nd I.F.	Connect damping unit to sec. (V3 pin 8 and chassis)	470 Kc/s	Via .01 mfd. capacitor	V3 control grid (pin 2)	13.85 cm M Band	T2 pri. (below chassis)
	Connect damping unit to pri. (V3 pin 6 and chassis)	470 Kc/s	As above	As above	13.85 cm M Band	T2 sec. (top of can)
1st I.F.	Connect damping unit to sec. (V3 pin 2 and chassis)	470 Kc/s	As above	V2 signal grid (pin 6)	13.85 cm M Band	T1 pri. (below chassis)
	Connect damping unit to pri. (V2 pin 2 and chassis)	470 Kc/s	As above	As above	13.85 cm M Band	T1 sec. (top of can)
M	Repeat these adjustments until there is no further improvement.	600 Kc/s	Via dummy aerial	Aerial lead	11.2 cm	L25 osc. (above chassis) L12 RF (" ") L10 Ae (" ")
		1364 Kc/s	As above	As above	1.8 cm	C24 osc. (below chassis) C11 RF (Top gang. con) C6 Ae (Below Chassis)
S	As above	3.75 Mc/s	As above	As above	10.4 cm	L23 osc. (below chassis) L8 Ae (" ")
		7.25 Mc/s	As above	As above	2.6 cm	C23 osc. (" ") C5 Ae (" ")
31M	Screw in osc. core to increase freq. check that the osc. freq. is above the signal freq.	9.6 Mc/s	As above	As above	5.15 cm	L21 osc. (below chassis) L6 Ae (" ")
25M	As above	11.81 Mc/s	As above	As above	6.6 cm	L20 osc. (below chassis) L5 Ae. (" ")
19M		15.23 Mc/s	As above	As above	4.65 cm	L19 osc. (below chassis) L4 Ae. (" ")
16M	Check that osc. freq. is above the signal freq. Rock tuning control for maximum sensitivity while adjusting aerial core.	17.79 Mc/s	As above	As above	6.6 cm	L18 osc. (below chassis) L3 Ae (" ")
		above	21.58 Mc/s	As above	As above	6.95 cm
		26.09 Mc/s	As above	As above	5.05 cm	L16 osc. (below chassis) T1 Ae. (" ")

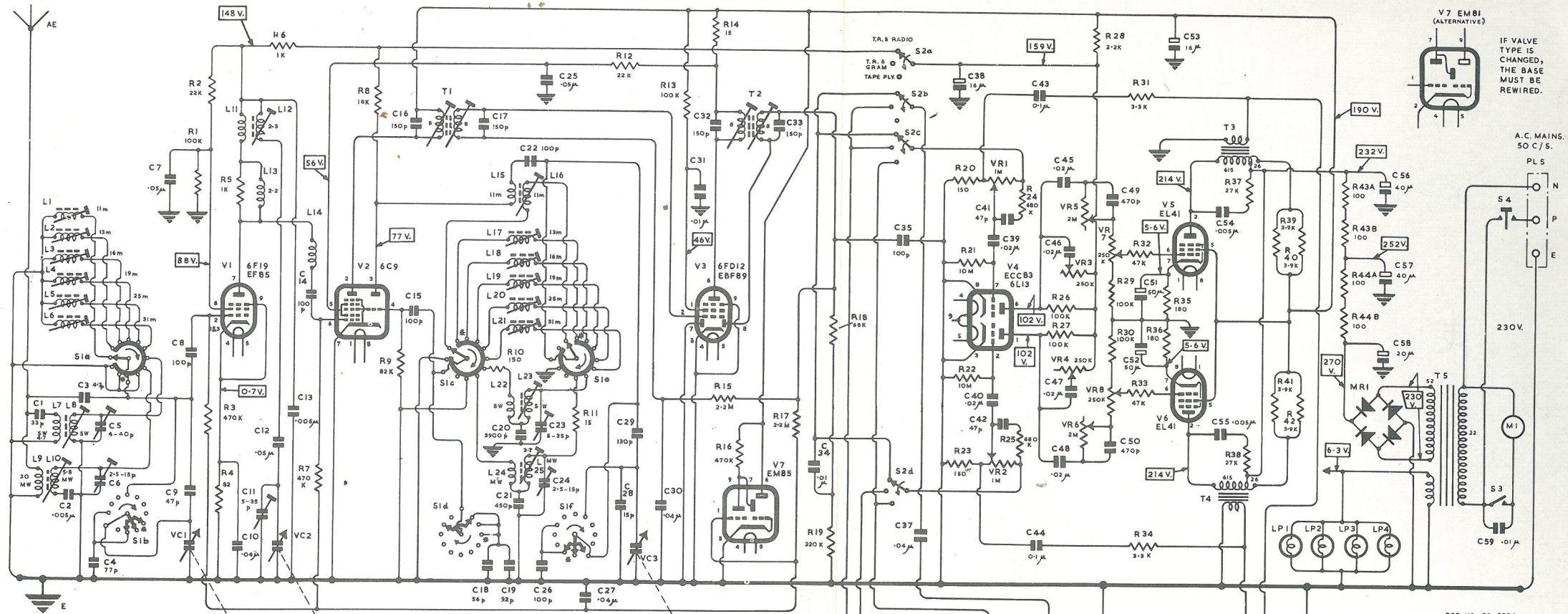
MURPHY 'CONSTELLATION' MODEL SGS76 SERVICE INFORMATION

GENERAL REMARKS:

- (1) RECEIVER OUTPUT: Make all adjustments for maximum output with the volume control at maximum. Adjust the signal generator so that this output does not exceed .5W, or 1.2V across the loudspeaker voice coil.
- (2) TRIMMING TOOL: A non-metallic tool must be used for adjusting the coil cores. (Use B301 Trimming Charts).
- (3) DAMPING UNIT: While adjusting one winding of an i.f. transformer, the other winding must be damped with a 4.7K ohm resistor connected in series with a 0.01 mfd. capacitor.
- (4) COIL CORES: These must be adjusted to a position between the middle of the winding and the outer end of the coil former. All the coils have iron dust cores excepting the 31, 25 and 19 metre oscillator coils, which have aluminium alloy cores. Of the alternative peaks possible with the 11 to 31 M Ae. coil cores, the correct peak is the one obtained with the core nearest to the middle of the winding.
- (5) RECEIVER OSCILLATOR FREQUENCY: On all wave bands this is above the signal frequency.
- (6) TUNING POINTERS: When the ganged capacitor is at maximum capacitance - not necessarily against the stop - the centre hole on the pointer carrier link must register with 13.85 cm. and when the chassis is on the cabinet, the main pointers must register with the right-hand edges of the glass scale 'apertures'. (Use Model B301 Cord Drive arrangement for dial cord replacement).
- (7) BANDSPREAD CIRCUITS: (11 to 31M Bands). The calibration of these circuits should preferably be checked against transmitting stations of known frequency as most normal signal generators are not sufficiently accurate for the purpose.
- (8) TAPE RECORDER OPERATION: Sockets are provided at the back of the cabinet for the recording of radio or gram programmes on to a tape, or the playing back of a tape recording through the receiver without the radio or gram programme. The respective positions of these sockets are shown on the valve layout chart on the rear of the cabinet base, and also on the label on the back of the cabinet.
 - (a) Recording Radiogram: Connect a shielded lead from the tape 'radio input' to plug provided, and insert into the 'tape record' socket. The selected programme can now be recorded. The receiver volume control does not alter or affect the strength of the recorded signal. This should be controlled on the tape recorded.

- (b) Replaying a Tape Recording: Connect a shielded lead from the tape 'output' to its respective plug, and insert into the 'tape playback' socket on the receiver panel. The tape may now be played through the radio receiver, using 'Tape Playback' position on the R/G switch, using the receiver volume control.
- (9) STEREO:
- (a) Stereo operation is provided for with a GARRARD STEREO plug-in head. Weight of stereo pickup should be about 7 grams, and weight of normal cartridge about 10 grams. Using the proper pick-up heads, will give better sapphire life.
- (b) Balance control is provided to enable balance between speakers to be achieved on stereo operation.
- (c) Extra speaker units are available which enable a more spacious stereo reproduction to be obtained in large rooms. These are connected by removing the speaker plug at the rear of the cabinet, and plugging in the extension speaker lead. (On the side which you intend to place the extension speaker).

C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15,16	17,18,19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	C		
R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20,21	22+23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	R
MISC.	L 1,2,3,4,5,6	S1a	L11-12						VC1	VI	LI3	VC2	LI4	V2	T1	S1c	L 15-16	L 17,18,19,20,21	L 22-23, 24-25	VC3	V3	T2	V7	S2 a, b	SK1	SK7	SK2	V4	SK3	VR3	VR5	SK9	VR7	V5	T3	T4	SK4	LP 1,2,3,4	MR1	T5	S4	PL5	S3	M1														



THE WAVEBAND SWITCH (S1a-S1f) IS SHOWN IN THE 11m POSITION. ROTATE KNOB CLOCKWISE FOR 13, 16, 19, 25, 83m, S.W. & M.W. WITH THE CHASSIS INVERTED, S1a, S1b, S1f, S1e, S1c & S1d IS THE ORDER OF THE SWITCH WAFERS AS VIEWED, WITH S1a NEAREST THE REAR OF CHASSIS.

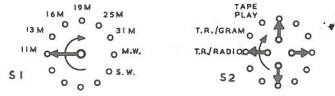
THE LUGS MARKED * ARE THE NEARER TO THE CHASSIS.

CIRCUIT VOLTAGES ARE SHOWN WITHIN RECTANGLES, AND WERE MEASURED UNDER NO-SIGNAL CONDITIONS WITH THE RECEIVER SWITCHED TO THE M.W. BAND AND USING A 20kΩ/V METER.

RESISTANCES ARE QUOTED IN OHMS CAPACITANCES IN PARTS OF A FARAD. WHERE THE RESISTANCE OF A COIL IS LESS THAN ONE OHM THE VALUE IS OMITTED FROM THE CIRCUIT DIAGRAM.

VALVE PIN NUMBERS ARE SHOWN ADJACENT TO ELECTRODES.

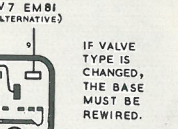
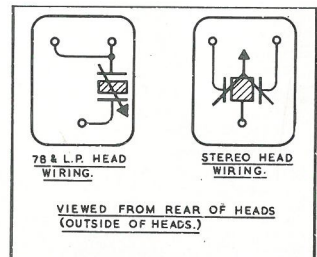
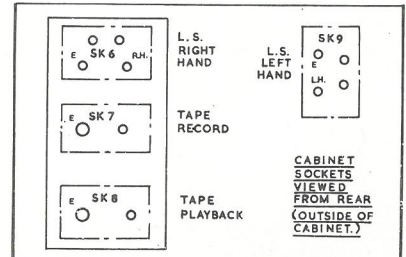
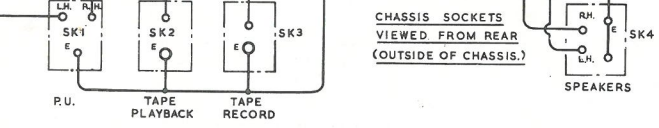
POTENTIOMETERS ARE GANGED TOGETHER IN PAIRS AS FOLLOWS:- VOLUME VR1/2; TREBLE VR3/4; BASS VR5/6; BALANCE CONTROL VR7/8.



REFER TO PARTS LIST FOR PART NUMBERS AND COMPLETE DESCRIPTIONS OF ELECTRICAL COMPONENTS. ORDER ALL REPLACEMENTS BY PART NUMBER AND LIST DESCRIPTION.

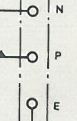
RP-2774

CIRCUIT DIAGRAM FOR MURPHY STEREOGRAM MODEL SGS 76



IF VALVE TYPE IS CHANGED, THE BASE MUST BE REWIRED.

A.C. MAINS. 50 C/S.



DRG. NO. RP-2774 ISSUE 1, MAY 1959