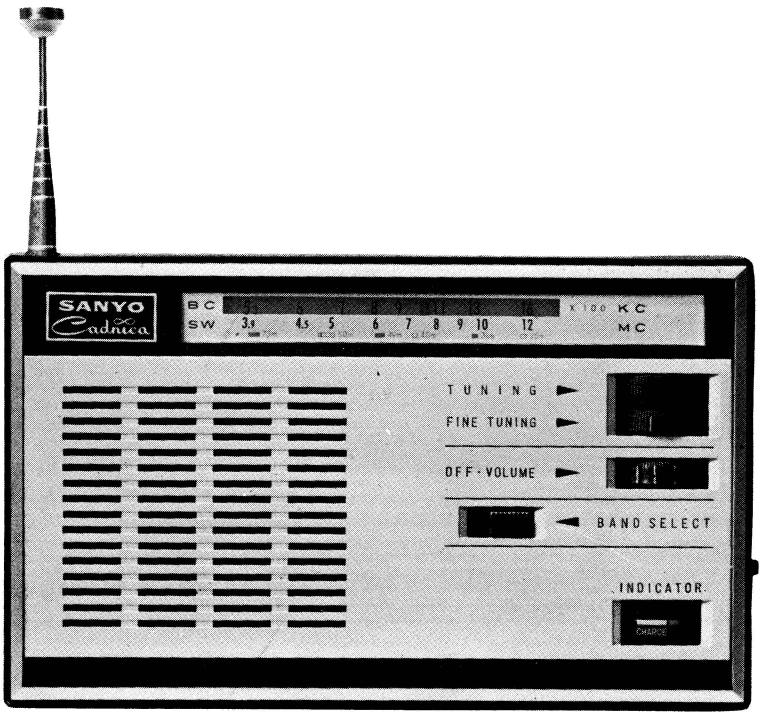
SANYO

MODEL

8S-P25A

All-transistor Radio

Service Manual



SPECIFICATIONS

FREQUENCY RANGE

Standard broadcast band	530-1,605 kc
Shortwave band	3.9-12 mc

INTERMEDIATE FREQUENCY

455 kc

TRANSISTOR COMPLEMENT

(1)	2SA221	Local Oscillator
(2)	2SA222	Frequency Converter
(3)	2SA322	1st IF Amplifier
(4)	2SA321	2nd IF Amplifier
(5)	2SB188	1st AF Amplifier
(6)	2SB186	2nd AF Amplifier
(7)	2SB22 × 2	Power Amplifier (Class B push-pull)

OTHERE LEMENTS

(1)	1S188	Diode : Detector & AGC
(2)	SDT-1000	Thermistor : Temperature Compensator
(3)	SDT-09	Thermistor : Temperature Compensator
(4)	Selenium Rectifier :	
(5)	Posistor :	Resistor with + temperature coefficient defending damage by unintentional misplugging.

OUTPUT POWER

Undistorted	280 mW
Maximum	400 mW

SENSITIVITY

BC	50 μV/m	(Average for 10 mW output)
SW	30 μV/m	(Average for 10 mW output)

SIGNAL TO NOISE RATIO

BC 38 μV (At 1,000 kc, 1 mV/m signal input)

CURRENT DRAIN

No signal	15 mA
Maximum	200 mA

POWER SUPPLY

110 V or 220 V AC mains for Battery charging.
3 sealed NICKEL-CADMIUM rechargeable batteries
3.75 Volt (N-450AA × 3)
or usual penlight batteries 1.5 V × 3 — 4.5 V

LOUDSPEAKER

$3\frac{1}{4}''$ Permanent dynamic speaker 7 ohms

DIMENSIONS

7″ wide × $4\frac{1}{4}''$ high × $1\frac{3}{4}''$ deep

WEIGHT

2 lbs. Approx.

SANYO ELECTRIC CO., LTD.

PART NO.	STOCK NO.	DESCRIPTION

TRANSISTORS

Tr 1	2SA221	Local Oscillator
Tr 2	2SA222	Frequency Converter
Tr 3	2SA322	1st IF Amplifier
Tr 4	2SA321	2nd IF Amplifier
Tr 5	2SB188	1st AF Amplifier
Tr 6	2SB186	2nd AF Amplifier
Tr 7	2SB22	Power Amplifier
Tr 8	2SB22	Power Amplifier

OTHER ELEMENTS

D 1	1S188	Detector & AGC
T h	SDT-09	Temperature Compensator
T h	SDT-1000	Bias Stabilizer
	R-S1164a	Selenium Rectifier DC 20V 50mA

COILS

	R-S8572	Ferrite Core Antenna-with Holder
L3, L4	R-W2156	Antenna Coil
L 2	R-W8014	Oscillator Coil BC
L 1	R-W8102	Oscillator Coil SW

TRANSFORMERS

T 1	R-W5T115	1st IF Transformer	150k : 1.7k
T 2	R-W5T084	2nd IF Transformer	20k : 1.5k
T 3	R-W5T073	3rd IF Transformer	10k : 5 k
T 4	R-W6191	Input Transformer	600Ω : 1 k
T 5	R-W6192	Output Transformer	70Ω : 7Ω
T 6	R-W7063	Step-Down Transformer	

CONTROLS

Vc1, Vc2	R-C1058	Tuning Capacitor
Vc 3	R-C1096	Fine Tuning Capacitor
VR 1	R-R11620	Volume Control with Switch
VR 2	R-R11010	Semi-Fixed Resistor
	R-S4200a	Slide switch -Tone Select

LOUDSPEAKER

SP	R-S6247	3″ Permanent Dynamic Speaker 7 ohms

ELECTROLYTIC CAPACITORS

C 9	R-C9023	30 μF	6 WV
C 14	R-C9080	30 〃	3 〃
C 21	R-C9078	5 〃	6 〃
C 22	R-C9086	120 〃	6 〃
C 23	R-C9075	0.1 〃	25 〃
C 24	R-C9076	1 〃	10 〃
C 25	R-C9023	30 〃	6 〃
C 28	R-C9086	120 〃	6 〃
C 34	R-C9023	30 〃	6 〃
C 36	R-C9084	5 〃	6 〃

RESISTORS

R 1		15 kohm	±10%	¼W
R 2		4.7 〃	〃	〃
R 3		1 〃	〃	〃
R 5		10 〃	〃	〃
R 6		820 ohm	〃	〃
R 8		820 〃	〃	〃
R 10		15 kohm	〃	〃
R 11		4.7 〃	〃	〃
R 12		680 ohm	〃	〃
R 13		15 kohm	〃	〃
R 14		68 ohm	〃	〃
R 15		33 kohm	〃	〃
R 17		2.2 〃	〃	〃
R 18		27 〃	〃	〃
R 19		4.7 〃	〃	〃
R 20		150 ohm	〃	〃
R 21		68 〃	〃	〃
R 22		22 kohm	〃	〃
R 23		1 〃	〃	〃
R 24		100 ohm	〃	〃
R 25		1 〃	± 5%	〃
R 26		220 kohm	±10%	〃
R 27		12 〃	〃	〃
R 28		49 ohm	±10%	2W
R 29		270 〃	±10%	¼W
R 30		4.7 kohm	〃	〃

PART NO.	STOCK NO.	DESCRIPTION

CAPACITORS

C 1		0.01 μF	+30-20%	50WV
C 2		0.005 〃	〃	〃
C 3		0.001 〃	〃	〃
C 4		10 pF	±10%	〃
C 5		310 〃	〃	35WV
C 6		2150 〃	〃	〃
C 7		0.01 μF	+30-20%	50WV
C 8		0.04 〃	+80-20%	〃
C 10		15 pF	±10%	〃
C 11		10 〃	〃	〃
C 12		0.0015 μF	+30-20%	〃
C 13		0.005 〃	〃	〃
C 15		0.04 〃	+80-20%	〃
C 16		0.04 〃	〃	〃
C 17		1.5 pF	±0.5pF	〃
C 18		0.04 μF	+80-20%	〃
C 19		0.04 〃	〃	〃
C 20		2 pF	±0.5pF	〃
C 26		0.02 μF	+30-20%	〃
C 27		0.02 〃	〃	〃
C 32		0.02 〃	+30-20%	50WV
C 33		0.005 〃	〃	〃
C 35		0.04 〃	〃	〃
C 37		0.02 〃	〃	〃
C 38		0.02 〃	〃	〃

CABINET & MISCELLANEOUS

	R-31488b	Cabinet	1
	R-28042a	Metal frame Die-cast	1
	R-32314b	Dial panel BC -Polystyrol	1
	R-26640a	Dial panel SW -Aluminum	1
	R-26731	Badge "SANYO Cadnica	1
	R-26639	Metal panel	1
	R-111607	Indicator mtg. metal	1
	R-24098	Stud nut -Speaker mtg.	1
	R-25145	Speaker mtg. metal	2
	R-31511d	Back cover	1
	R-26823	Specification metal sheet	1
	R-26785	Window metal-Power supply socket cover	1
	R-35209	Window metal retainer	1
	R-25159La	Spring holder -neon lamp mtg.	1
	R-47575a	Notice label	1
	R-24144	Stud nut -back screen mtg.	2
	R-26641	Back screen	1
	R-24497	Pulley	1
	R-24478	Pulley Shaft	1
	R-23653L	Control knob mtg. angle	1
	R-111720	Mounting angle -fine tuning cap.	1
	R-33358	Tuning knob	1
	R-33359	Fine tuning knob	1
	R-39078	Volume control knob	1
	R-S8571	Band select knob comp.	1
	R-25144	Spring contact	6
	R-13043	Tension spring 3×16	1
	R-33360	Drum with gear	1
	R-24586	Drum shaft	1
	R-15168	Tension spring -for dial cord	1
		Dial cord -0.3	1
	R-35148	Ferrite core holder	1
	R-S1041a	Fuse 0.7A	1
	R-R7017	Resistor	1
	R-S1201	Posistor resistor with positive temperature coefficient	1
	R-S5521	Check meter 400μA	1
	R-111610a	Rail	1
	R-24585	Gear	1
	R-S8570	Gear comp.	1
	R-35189a	Battery cover	1
	R-13051	Plate spring	1
	R-39080	Base	1
	R-39079	Band select knob	1
	R-24583a	Stud nut	1
	R-23624	Plate spring	1
	R-S5521	Indicator	1
	R-S1169	Ni-Cd battery	3
	R-35208	Ant. holder	1
	R-24524a	Tuning shaft	1
	R-S6250	Magnetic earphone	1
	R-S1191	Neon lamp 100V	1
	R-23678a	Positive battery terminal	1
	R-25189	Negative terminal	
	R-S3124a	Power supply cord 150cm	1
	R-S8574b	Adaptor plug pitch 19 mm	1
	R-S8575b	Adaptor plug pitch 16.7mm	1

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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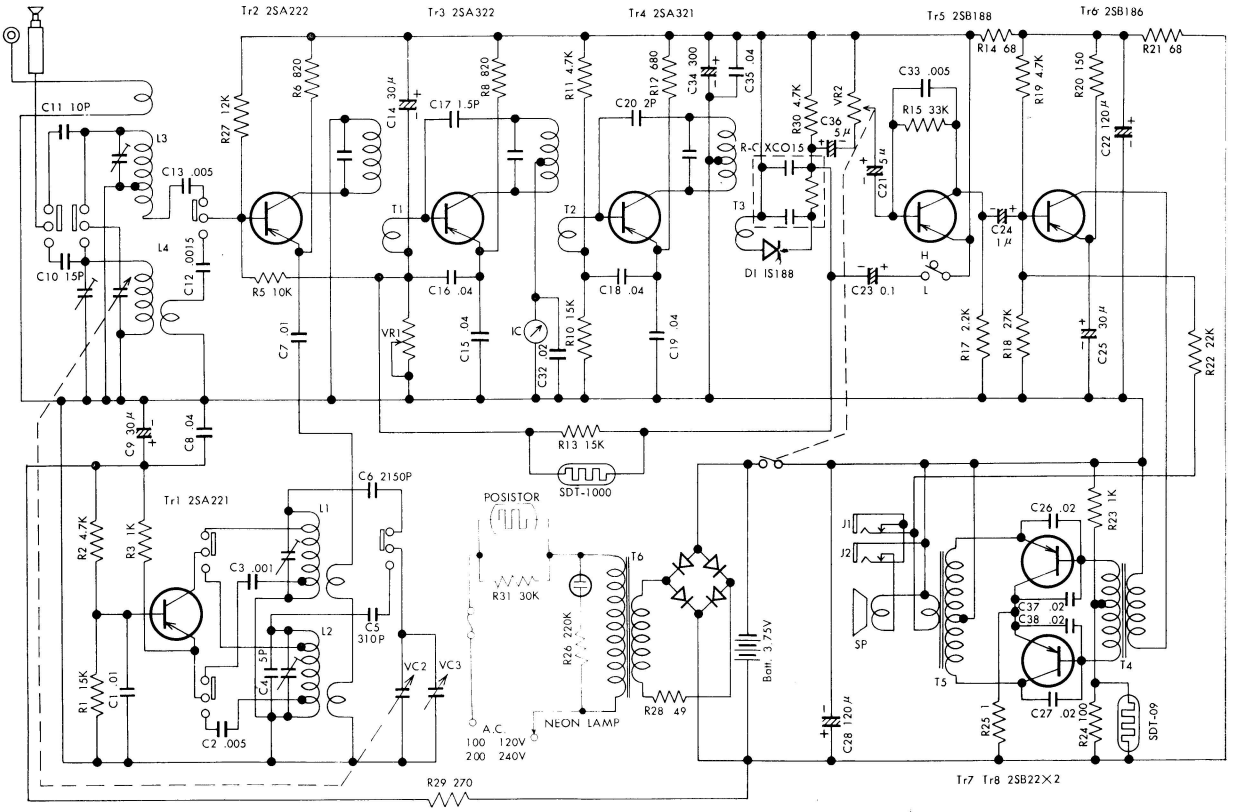
CIRCUIT DIAGRAM

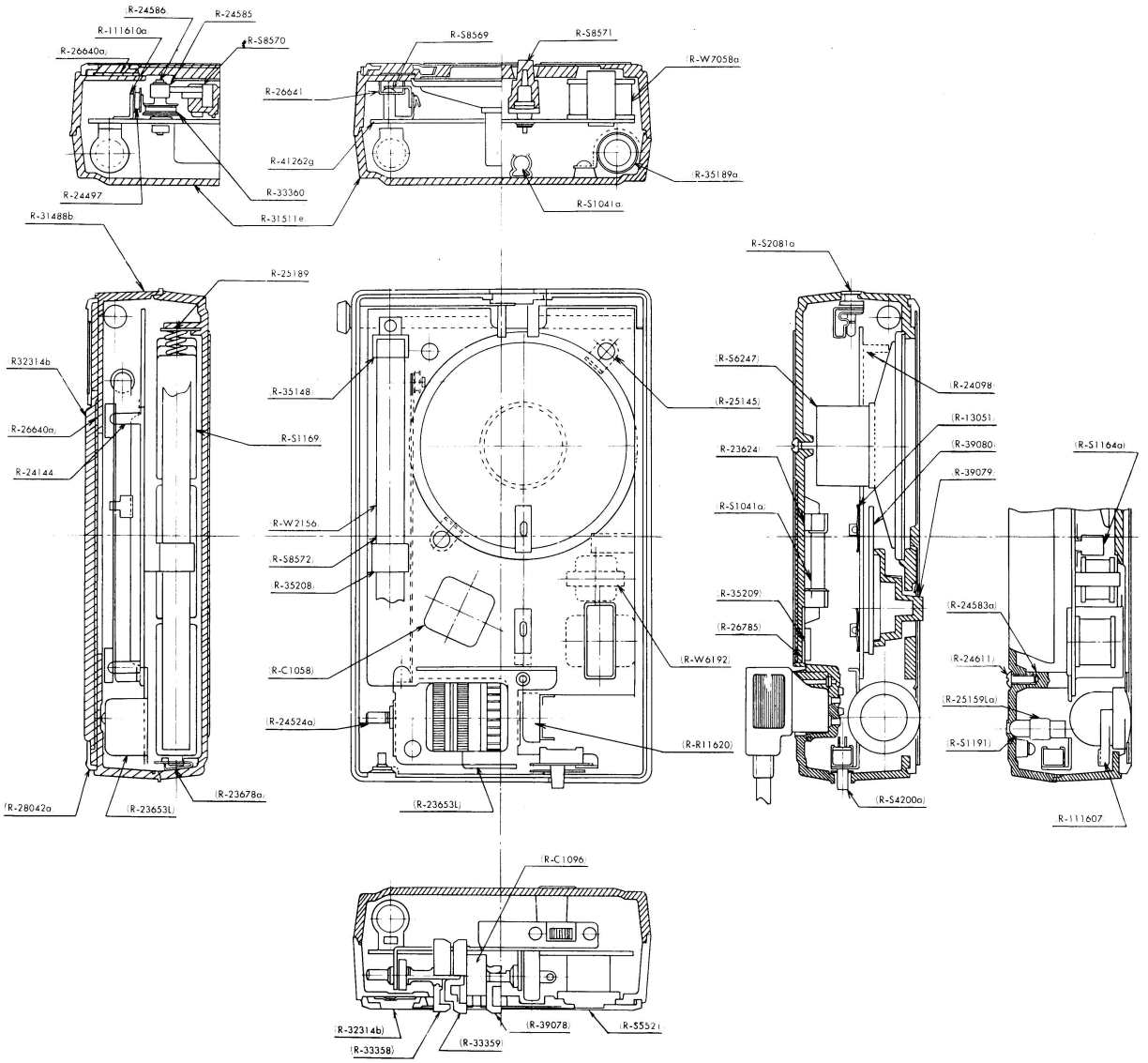


ALIGNMENT PROCEDURES

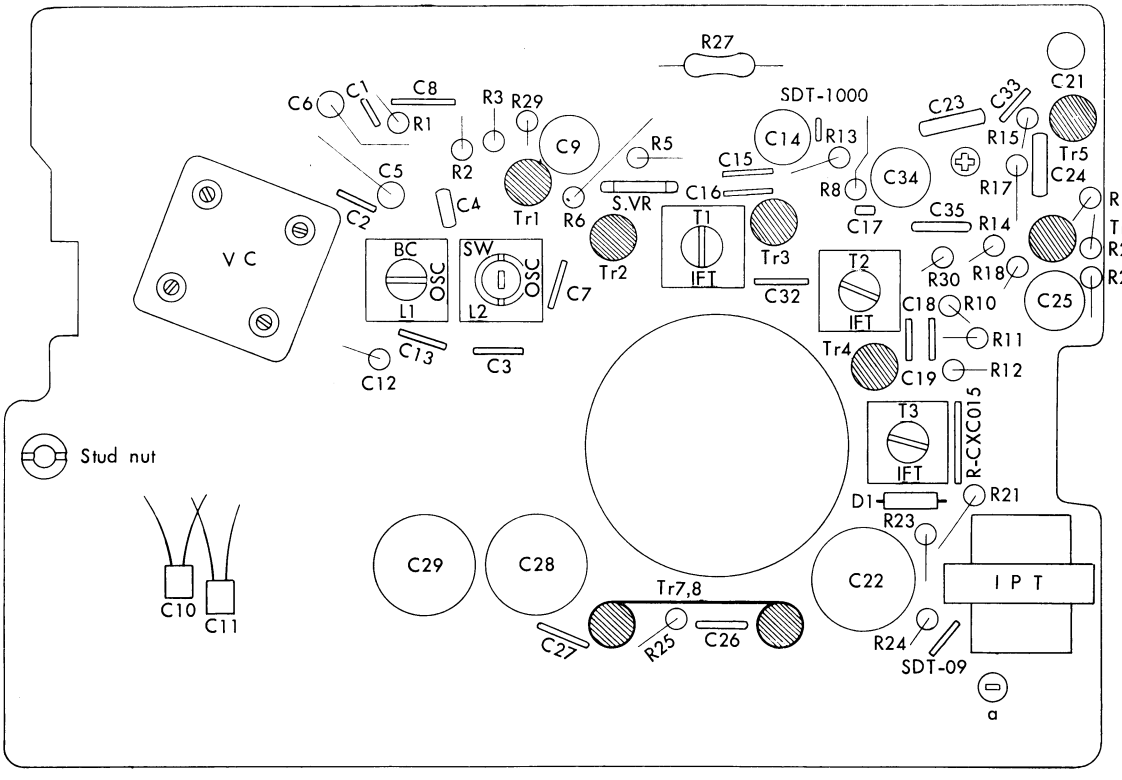
Apply volt-meter across the voice coil. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain output reading.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST FOR MAXIMUM OUTPUT
IF ALIGNMENT				
1	Radiate signal through the loop antenna, which connected with signal generator output cable.	455 kc	540 kc	T 3 T 2 T 1
BROADCAST RF ALIGNMENT				
2	Radiate signal through the loop antenna, which connected with signal generator output cable.	515 kc	Lower end	BC OSC Coil L2
3		1650 kc	Upper end	BC OSC Trim. Ct2
4		Repeat steps 2 and 3.		
5		600 kc	600 kc	BC ANT. Coil L4
6		1400 kc	1400 kc	BC ANT. Trim. Ct4
7		Repeat steps 5 and 6.		
SHORTWAVE RF ALIGNMENT				
8	Radiate signal through the loop antenna, which connected with signal generator output cable.	3.8 mc	Lower end	SW OSC Coil L1
9		12.5 mc	Upper end	SW OSC Trim. Ct1
10		Repeat steps 8 and 9.		
11		4 mc	4 mc	SW ANT. Coil L3
12		11 mc	11 mc	SW ANT. Trim. Ct3
13		Repeat steps 11 and 12.		

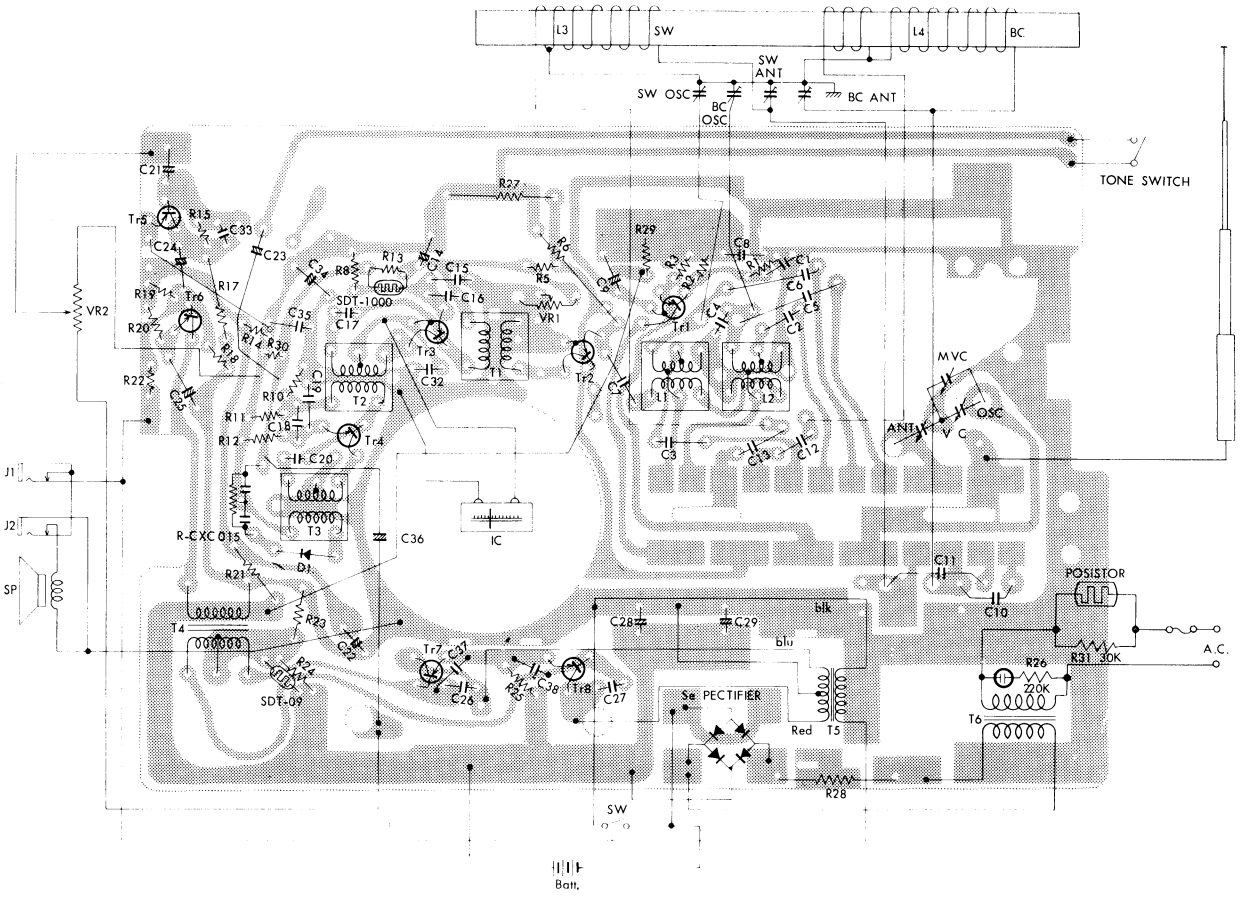
CONSTRUCTIONS



PARTS LAYOUT

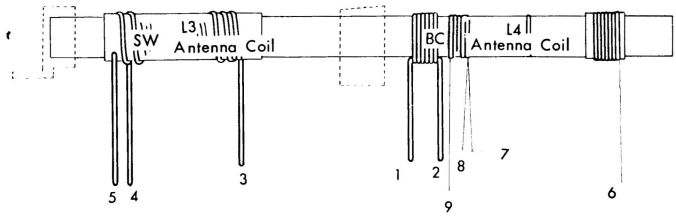


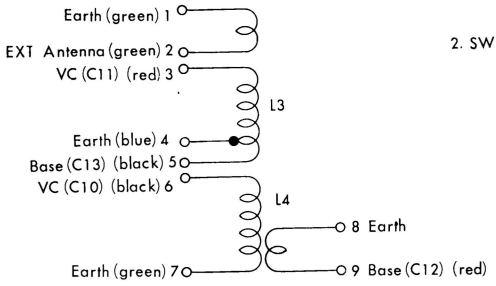
INTER-PARTS WIRING ILLUSTRATIONS



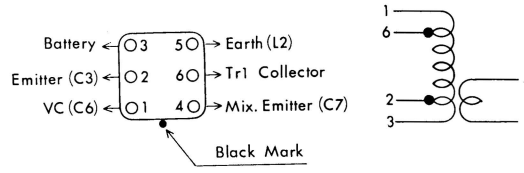
MAIN PARTS CONNECTION

1. Antenna Coil

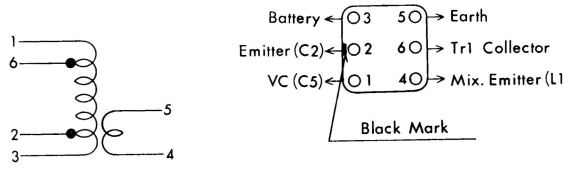




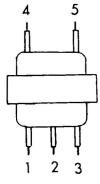
2. SW OSC Coil (L1) (orange)

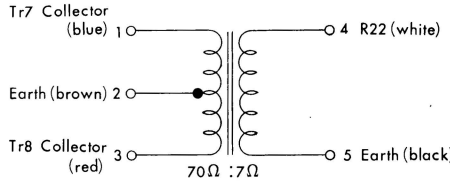


3. BC OSC Coil (L2) (red)

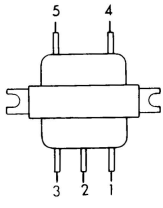


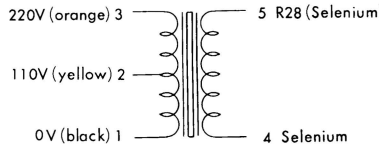
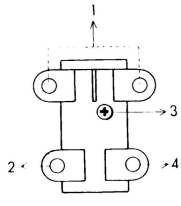
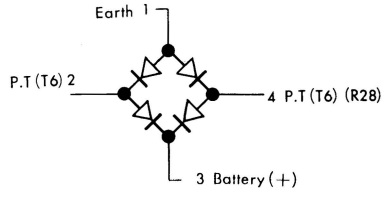
4. Output Transformer (T5)





5. Power Transformer (T6)





6. Selenium Rectifier