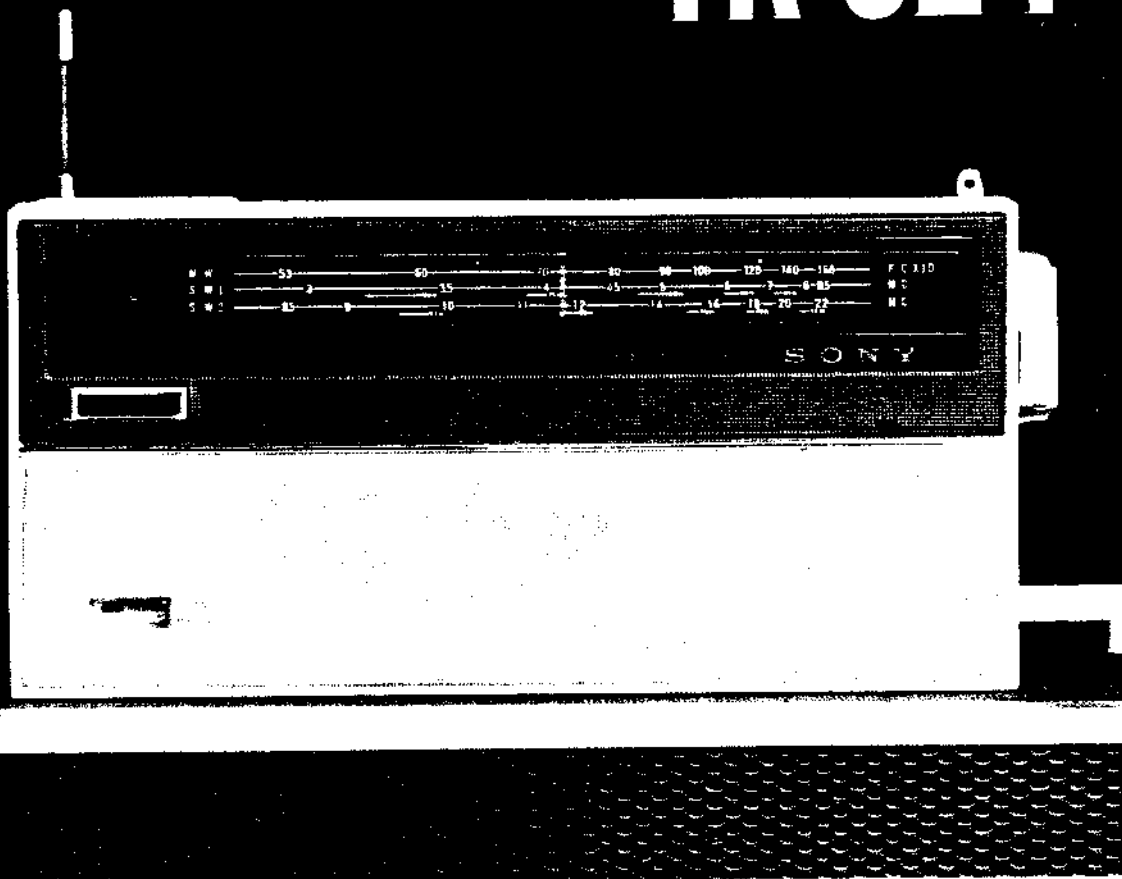


TR-824



Specifications

Circuit :	3 Transistor Superheterodyne
Frequency Coverage :	MW 530—1,605 Kc (566—187 m) SW ₁ 3—8.5 Mc (100—35.3 m) SW ₂ 8.5—22 Mc (35.3—13.6 m)
Intermediate Frequency :	455 Kc
Antenna System :	Built-in Ferrite Bar Antenna Built-in Telescopic Antenna
Maximum Sensitivity :	MW 30 dB (32 μ V/m) (at 10 mW Output) SW ₁ 30 dB (32 μ V/m) SW ₂ 36 dB (63 μ V/m)
Selectivity :	22 dB at 10 Kc off resonance, at 1,400 Kc
Output Power :	260 mW (undistorted)
Current Drain :	12 mA at zero signal, 140 mA at 260 mW output
Speaker :	4" \times 2-1/2" (10 \times 6.5 cm) PM Dynamic, 8 Ω
Battery :	Three size "C" Flashlight Batteries (4.5 Volts)
Dimensions :	9-1/16" \times 4-1/3" \times 1-15/16" (230 \times 110 \times 49 mm)
Weight :	2.2 lbs. (1.0 Kg)

SONY[®]
SERVICING GUIDE

Adjustment and Alignment

a) Frequency Coverage:

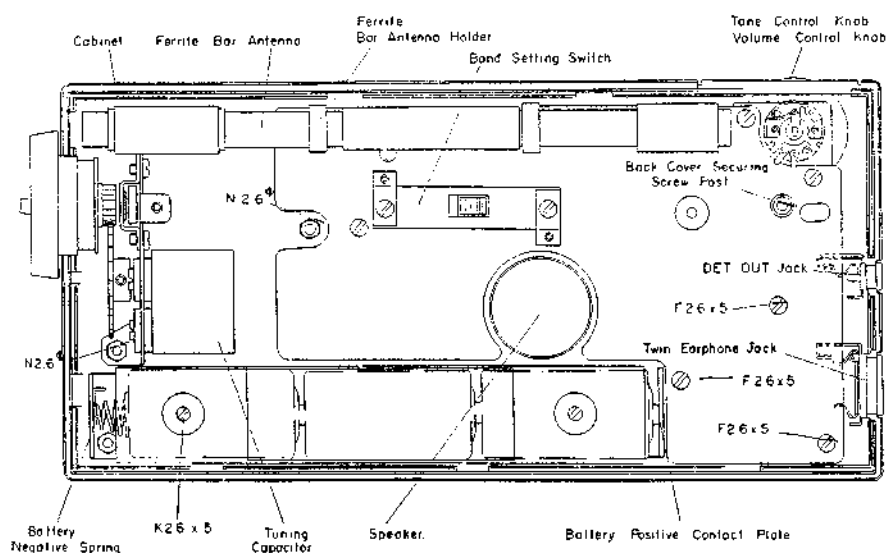
	Lower Limit	Adjust	Upper Limit	Adjust
MW	520 Kc	Core of MW OSC Coil (MW ₀)	1,680 Kc	MW OSC Trimmer (C ₄₋₃)
SW ₁	2.90 Mc	Core of SW ₁ OSC Coil (SW ₁₋₀)	8.60 Mc	SW ₁ OSC Trimmer (C ₄₋₂)
SW ₂	8.40 Mc	Core of SW ₂ OSC Coil (SW ₂₋₀)	22.4 Mc	SW ₂ OSC Trimmer (C ₄₋₁)

b) Tracking Alignment

	Checking Point	Adjust	Checking Point	Adjust
MW	620 Kc	Position of MW ANT Coil (MW _{1-A})	1,400 Kc	MW ANT Trimmer (C ₃₋₃)
SW ₁	2.90 Mc	Position of SW ₁ ANT Coil (SW _{1-A})	8.60 Mc	SW ₁ ANT Trimmer (C ₃₋₂)
SW ₂	8.40 Mc	Position of SW ₂ ANT Coil (SW _{2-A})	22.4 Mc	SW ₂ ANT Trimmer (C ₃₋₁)

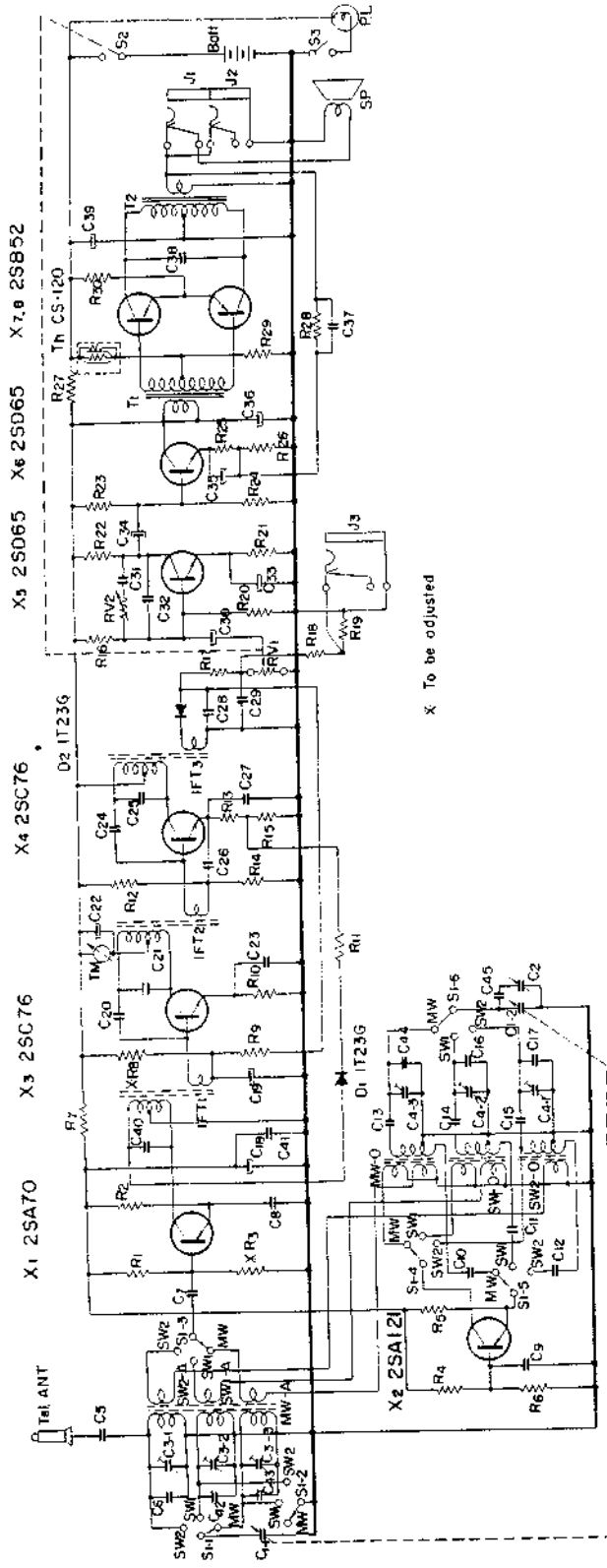
To Remove the Chassis and Printed Circuit Board from the Cabinet

- (1) Open the Battery Lid and take out the Batteries.
- (2) Remove the two Back Cover Securing Screws.
It is not necessary to remove the Telescopic Antenna Holding Screw located at the lower right-hand corner of the Back Cover.
- (3) Open the Back Cover gently and detach the white antenna lead at the Telescopic Antenna by pulling out the Pin Plug from the Pin Connector Jack.
- (4) Remove the three Screws (F 2.6 × 5), the two Nuts (2.6ϕ) and the Back Cover Securing Screw Post shown by red arrows in the figure below.
- (5) If necessary, unsolder the following wires and remove the Twin Earphone Jack and the DET OUT Jack by pulling straight up.
 - a) Two wires (a black and a yellow) at the Speaker Terminals.
 - b) One red wire at the Battery Positive Contact Plate.
 - c) One black wire at the Battery Negative Spring.
 - d) Two wires (a red and a black) at the Tuning Meter.



MEASURE DIAGRAM

SCHEMATIC DIAGRAM



X To be adjusted

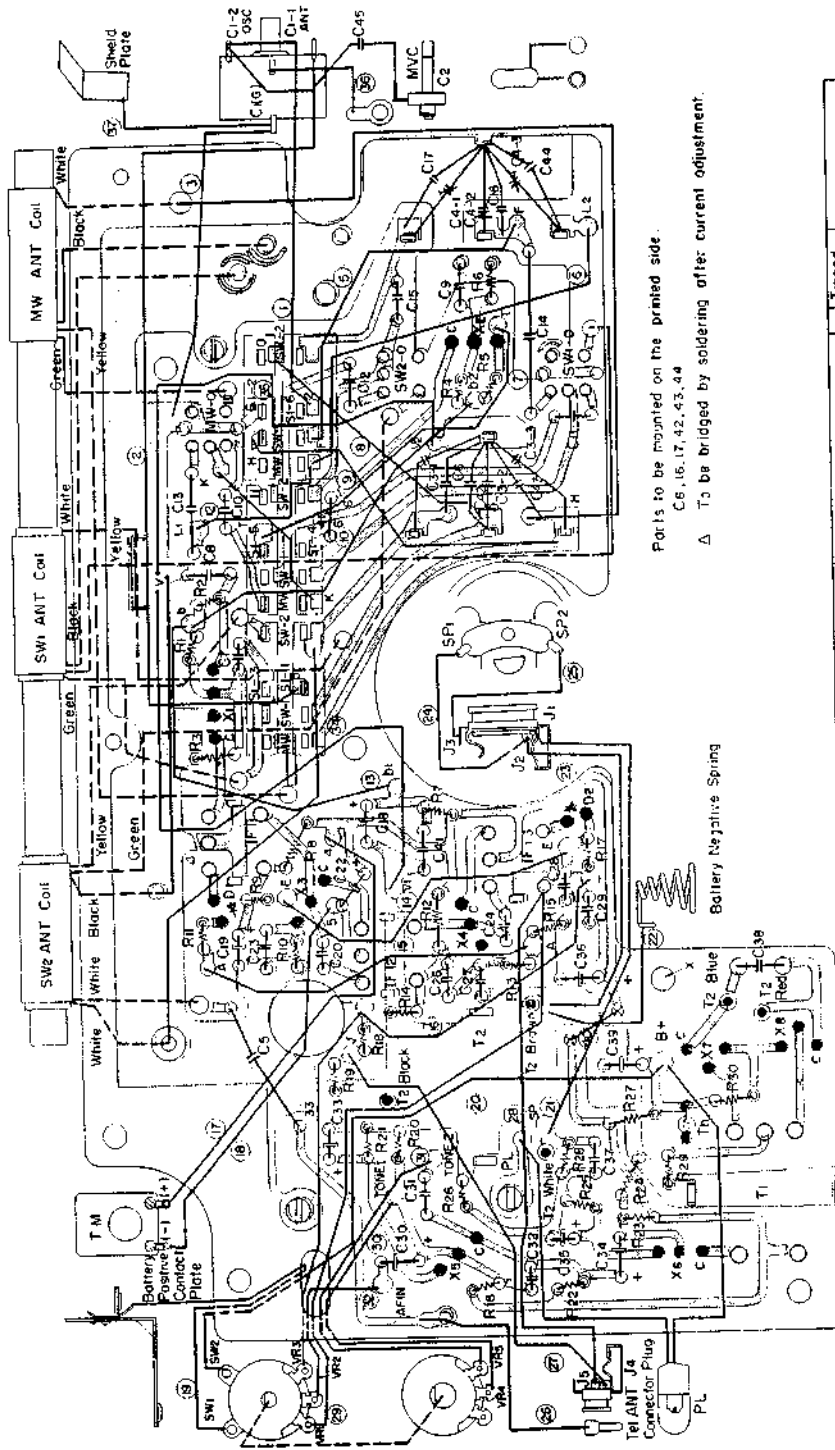
ELECTRONIC PARTS LIST

Part No.	Symbol	Description	Part No.	Symbol	Description	Part No.	Symbol	Description
1-501-039-11	Tel. ANT	Telescopic Antenna	1-203-405-00	R ₂	1.5KΩ 1/8W Carbon	1-101-140-11	C ₄	0.005μF Ceramic
	MW_A	MW Ferrite Bar Antenna	1-203-388-00	*R ₃	27KΩ "	1-101-073-11	C ₅	0.02μF "
1-401-172-11	SW _{1-A}	"	1-203-373-00	R ₄	3.3KΩ "	1-105-041-11	C ₁₀	0.01μF Mylar
	SW _{2-A}	"	1-203-367-00	R ₅	1KΩ "	1-105-069-11	C ₁₁	0.01μF "
1-405-098-11	MW_O	MW Oscillator Coil	1-203-385-00	R ₆	15KΩ "	1-101-017-11	C ₁₂	200PF Ceramic
1-405-097-11	SW _{1-B}	"	1-203-360-00	R ₇	330Ω "	1-103-041-12	C ₁₃	330PF Styrol
1-405-096-11	SW _{2-B}	"	1-203-394-00	*R ₈	56KΩ "	1-103-463-12	C ₁₄	2200PF "
1-403-034-00	IFT ₁	IF Transformer	1-203-378-00	R ₉	5.6KΩ "	1-103-464-12	C ₁₅	6800PF "
1-403-035-00	IFT ₂	"	1-203-361-00	R ₁₀	470Ω "	1-101-013-11	C ₁₆	10PF Ceramic
1-403-036-00	IFT ₃	"	1-203-367-00	R ₁₁	1KΩ "	1-101-090-11	C ₁₇	25PF "
1-423-049-00	T ₁	Driver Transformer	1-203-387-00	R ₁₂	22KΩ "	1-121-115-00	C ₁₈	100μF 6V Electrolytic
1-427-094-11	T ₂	Output Transformer	1-203-360-00	R ₁₃	330Ω "	1-121-104-00	C ₁₉	10μF 6V "
1-221-094-01	RV ₁	SKΩ Volume Control	1-203-373-00	R ₁₄	3.3KΩ "	1-101-009-11	C ₂₀	1PF Ceramic
	RV ₂	20KΩ Tone Control	1-203-415-00	R ₁₅	150Ω "	1-121-174-00	C ₂₁	180PF (built in IFT ₁)
1-513-192-11	S ₁	Band Setting Switch	1-203-394-00	R ₁₆	12KΩ "	1-105-045-11	C ₂₂	1μF 15V Electrolytic
	S ₂	Power Switch (RV ₁)	1-203-351-00	R ₁₇	470Ω "	1-105-045-11	C ₂₃	0.02μF Mylar
	S ₃	Dial Light Switch	1-203-393-00	R ₁₈	91KΩ "	1-101-010-11	C ₂₄	2PF Ceramic
1-502-067-00	SP	Speaker	1-203-370-00	R ₁₉	2.2KΩ "	1-105-045-11	C ₂₅	130PF (built in IFT ₁)
1-520-027-11	T.M.	Tuning Meter	1-203-373-00	R ₂₀	3.3KΩ "	1-105-045-11	C ₂₆	0.02μF Mylar
1-518-007-04	P.L.	Dial Light	1-203-412-00	R ₂₁	390Ω "	1-105-041-11	C ₂₇	0.02μF "
1-507-030-20	J _{1,2}	Twin Earphone Jack	1-203-369-00	R ₂₂	1.2KΩ "	1-105-041-11	C ₂₈	0.01μF "
1-507-050-03	J ₃	DET OUF Jack	1-203-377-00	R ₂₃	5.1KΩ "	1-105-041-11	C ₂₉	0.01μF "
1-528-002-00	Batt.	Battery (4.5V)	1-203-370-00	R ₂₄	2.2KΩ "	1-121-101-00	C ₃₀	30μF 3V Electrolytic
	X ₁	Transistor 2SA70	1-203-398-00	R ₂₅	220Ω "	1-105-044-11	C ₃₁	0.05μF Mylar
	X ₂	" 2SA121	1-203-351-00	R ₂₆	5.1Ω "	1-105-104-11	C ₃₂	0.002μF "
	X ₃	" 2SC76	1-203-832-00	R ₂₇	56Ω "	1-121-124-00	C ₃₃	50μF 3V Electrolytic
	X ₄	" 2SC74	1-203-359-00	R ₂₈	220Ω "	1-121-102-00	C ₃₄	30μF 6V "
	X ₅	" 2SD65	1-203-374-00	R ₂₉	3.9KΩ "	1-121-124-00	C ₃₅	50μF 3V "
	X ₆	" 2SD65	1-203-351-00	R ₃₀	5.1Ω "	1-121-115-00	C ₃₆	100μF 6V "
	X ₇	" 2SB52				1-105-045-11	C ₃₇	0.02μF Mylar
	X ₈	" 2SB52				1-105-277-11	C ₃₈	0.1μF "
	D ₁	Diode 1T23G	1-151-078-11	C ₁₋₁₋₂	Capacitor	1-121-115-00	C ₃₉	100μF 6V Electrolytic
	D ₂	" 1T23G	1-151-069-11	C ₂	Tuning Capacitor, 2 gang	1-101-144-11	C ₄₀	180PF (built in IFT ₁)
	Th	Thermistor CS-120	1-141-015-00	C ₃₋₁₋₃	Fine Tuning Capacitor	1-101-026-11	C ₄₁	0.05μF Ceramic
			1-141-015-00	C ₄₋₁₋₄	Trimmer Capacitor, 3 unit	1-101-012-11	C ₄₂	15PF "
			1-101-027-11	C ₅	20PF Ceramic	1-101-012-11	C ₄₃	5PF "
			1-101-087-11	C ₆	30PF "	1-101-012-11	C ₄₄	5PF "
1-203-376-00	R ₁	4.7KΩ 1/8W Carbon	1-101-072-11	C ₇	0.01μF "	1-101-012-11	C ₄₅	5PF "

* To be adjusted

Mounting Diagram

---Printed Side---

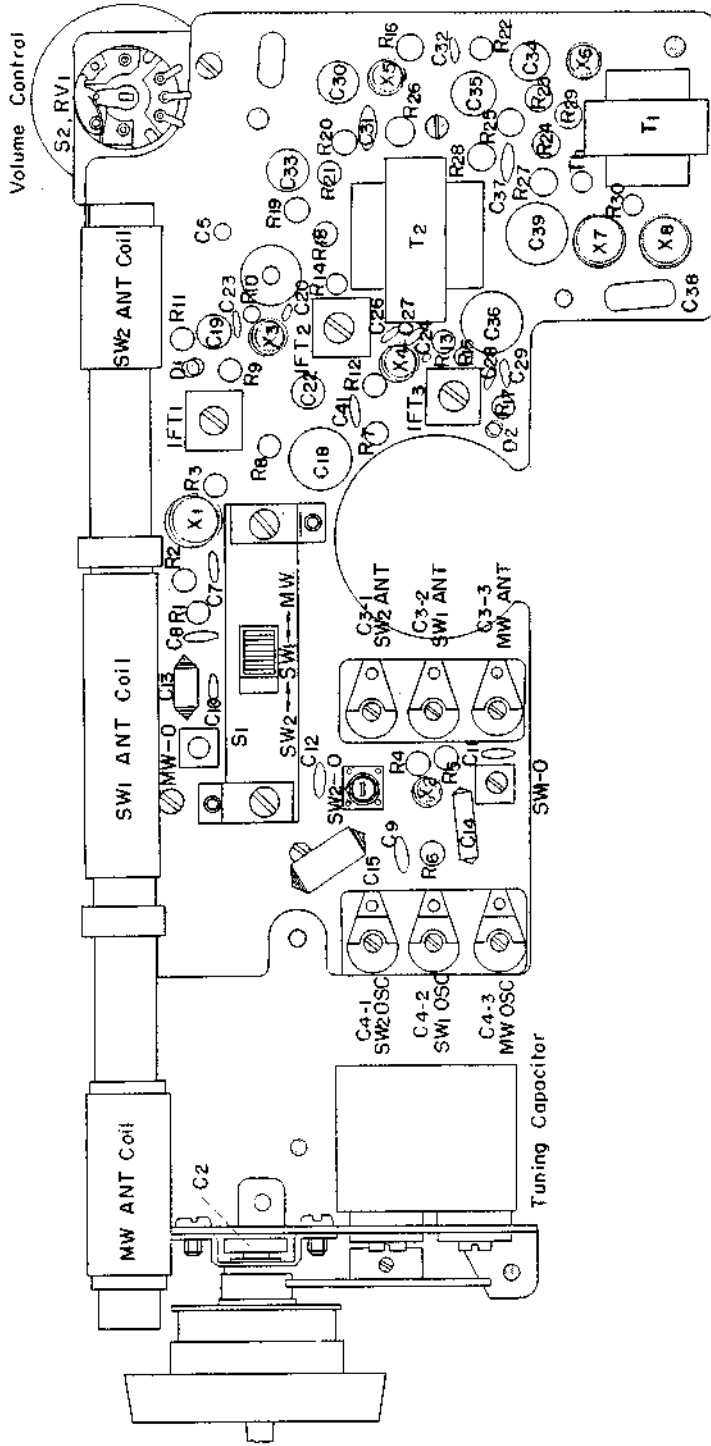


Parts to be mounted on the printed side.
 C6, 16, 17, 42, 43, 44
 Δ To be bridged by soldering after current adjustment.

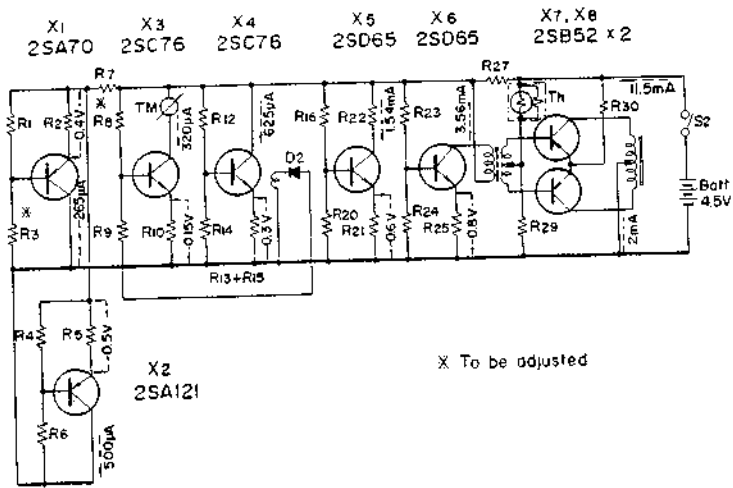
PVC Wire Colour	No.	Connection	PVC Wire Colour	No.	Connection	PVC Wire Colour	No.	Connection	Tinned Brass Wire No.	Connection
1 Yellow	11	SW2 ~ C1-2	Orange	21	(K1 ~ (K1)	Orange	31	VR3 ~ (TOR2)	41	(6) ~ (6)
2 Red	12	SW1 ~ C1-1	White	22	(L1) ~ (L1)	Yellow	32	VR2 ~ (AF M)	42	(6) ~ (6)
3 Black	13	G ~ C1(6)	Red	23	(M1) ~ (M1)	White	33	VR3 ~ (I)		
4 Orange	14	detuned	Yellow	24	(E) ~ (E)	Black	34	(V) ~ (V)		
5 White	15	(F) ~ (F)	Orange	25	(A1) ~ (A1)	Black	35	(V) ~ (V)		
6 Yellow	16	(L2) ~ (L1)	White	26	(I) ~ (I)	Black	36	(V) ~ (V)		
7 Black	17	(T1) ~ (T1)	Red	27	T.M. (SW-1)	Black	37	(V) ~ (V)		
8 Black	18	(O) ~ (O)	Black	28	(B) ~ (SW)	Black	38	Shield Plate ~ C1(6)		
9 Black	19	(M) ~ (M)	Red	29	(B) ~ (B)	Black	39			
10 Red	20	(M) ~ (b)	Red	30	SW2 ~ (B+)	White	40			

Mounting Diagram

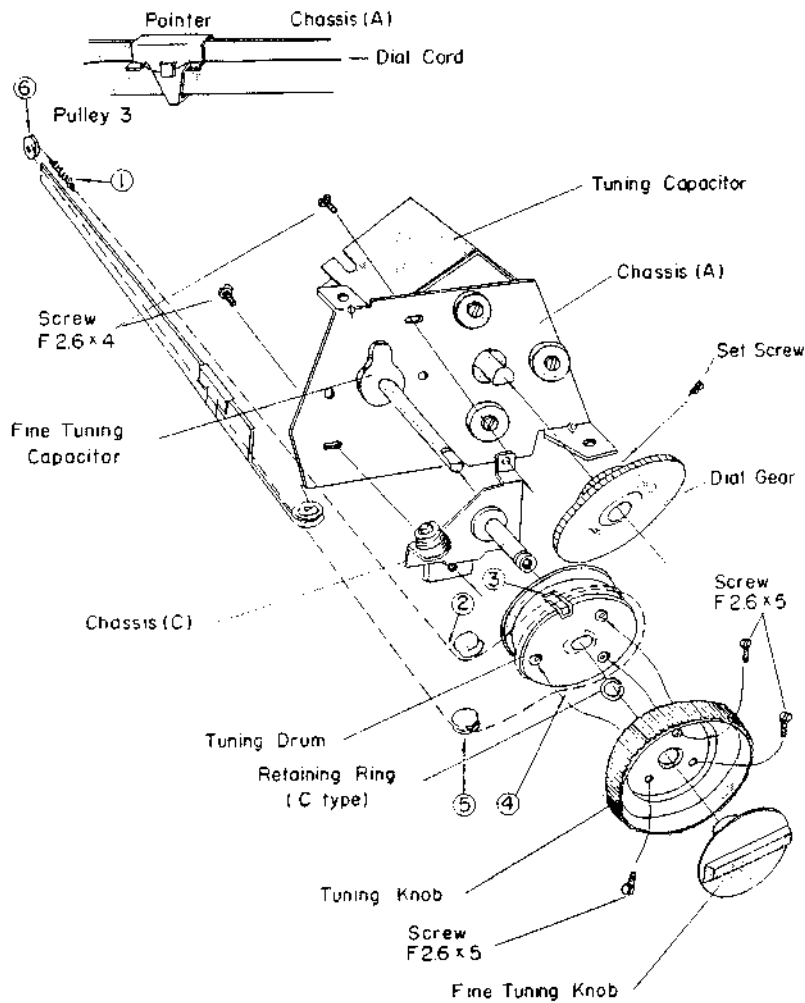
...Parts Side—



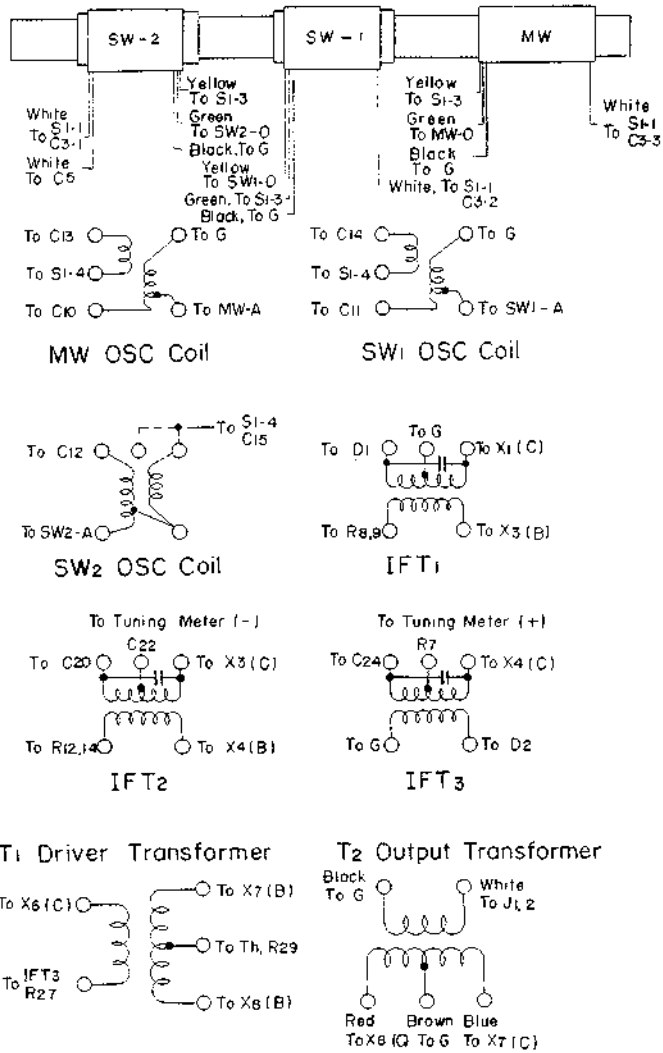
Current and Voltage Distribution Chart at Zero Signal



Tuning Mechanism



SW₂, SW₁, MW Ferrite Bar Antenna



T ₁	Impedance	DC Resistance	T ₂	Impedance	DC Resistance
Primary	680 Ω	65 Ω	Primary	68 Ω	5.7 Ω
Secondary	1.6 K Ω	176 Ω	Secondary	8 Ω	0.9 Ω

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