

ICF-4900 / 4910

SERVICE MANUAL

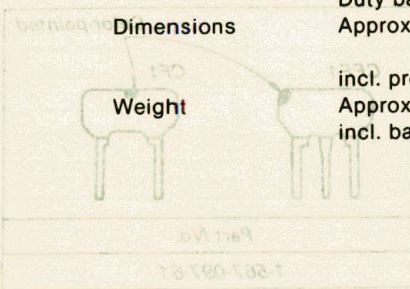


ICF-4900
AEP Model
E Model

ICF-4910
US Model
Canadian Model

SPECIFICATIONS

Frequency range	<p>FM 87.6–108 MHz</p> <p>SW₁ 5.85–6.35 MHz (49 m)</p> <p>SW₂ 6.95–7.45 MHz (41 m)</p> <p>SW₃ 9.4–9.9 MHz (31 m)</p> <p>SW₄ 11.6–12.1 MHz (25 m)</p> <p>SW₅ 15.0–15.5 MHz (19 m)</p> <p>SW₆ 17.55–18.05 MHz (16 m)</p> <p>SW₇ 21.4–21.9 MHz (13 m)</p> <p>MW 530–1,605 kHz</p>
Antennas	<p>FM/SW: Telescopic antenna</p> <p>MW: Built-in ferrite bar antenna</p>
Speaker	Approx. 5 cm (3 inches) dia.
Power output	100 mW (at 10% harmonic distortion) at dc operation
Output	Earphone jack (minijack)
Power requirements	<p>3 V dc</p> <p>two size AA batteries (IEC designation R6)</p> <p>DC IN 3 V jack accepts:</p> <p>optional Sony AC-37 ac power adaptor for use on 220 V ac, 60 Hz . . . (ICF-4900; AEP model)</p> <p>optional Sony AC-38 ac power adaptor for use on 110–120 V, 220–240 V ac, 50/60 Hz . . . (ICF-4900; E model)</p> <p>optional Sony AC-39 ac power adaptor for use on optional Sony AC-39 ac power adaptor for use on 120 V ac, 60 Hz . . . (ICF-4910)</p> <p>optional Sony DCC-70 car battery cord for use with 12 V car battery</p>
Battery life	<p>Approx. 22 hours with Sony SUM-3 (NS)</p> <p>New Super batteries or Eveready No. 1215 Heavy Duty batteries</p>
Dimensions	<p>Approx. 144 × 76 × 24.5 mm (w/h/d)</p> <p>(5³/₄ × 3 × 3¹/₂ inches)</p>
Weight	<p>incl. projecting parts and controls</p> <p>Approx. 245 g (8.6 oz)</p> <p>incl. batteries</p>



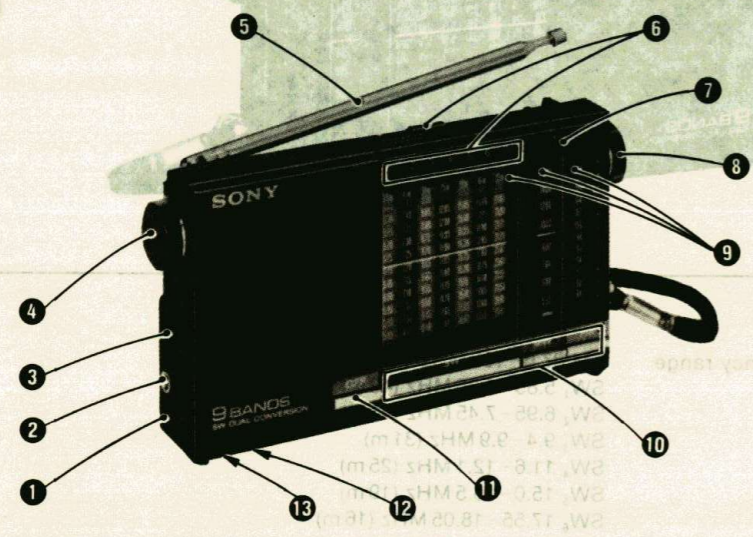
FM/MW/SW 9 BAND RECEIVER
SONY



FEATURES

- Handy FM/MW/SW1-7 9 band receiver with high sensitivity and high selectivity.
- Band spread system enables you to easily tune in SW stations.
- Dual conversion circuit effectively reduces interference from other SW stations.

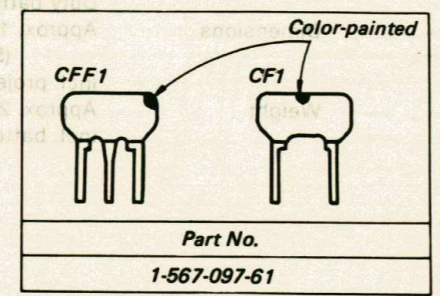
LOCATION AND FUNCTION OF CONTROLS



- ① DC IN 3V (external power input) jack
- ② Earphone jack
- ③ TONE control
- ④ VOLUME control
- ⑤ Telescopic antenna
- ⑥ SW band selector and indicators
- ⑦ TUNING indicator
- ⑧ TUNING knob
- ⑨ Dial scales
- ⑩ Band select buttons and indicators
- ⑪ OFF button
- ⑫ SAFETY switch (bottom)
- ⑬ Battery compartment (rear)

Note on Ceramic Filter Replacement

FM IF ceramic filters (CF1, CFF1) are color-painted on their bodies. The color of CF1 and CFF1 should be the same, respectively. CF1 and CFF1 are supplied in pairs. These must be replaced in pairs when used in this set.



Replacing chip components

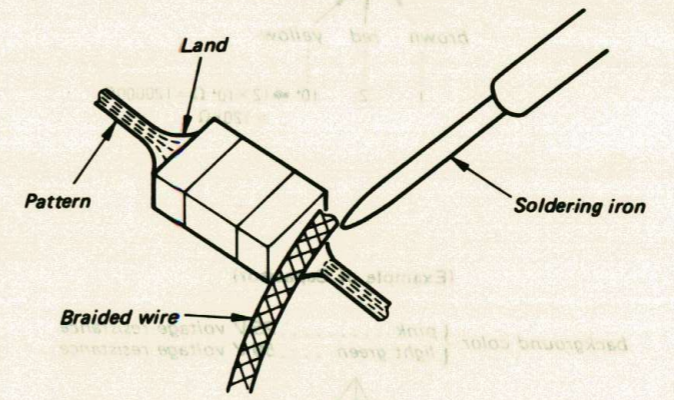
All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

Precautions for replacement

1. Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.
2. Never re-use a disconnected chip component. Dispose of all old chip components.
3. To protect the chip component, heating time for attaching the component should be within 3 seconds.

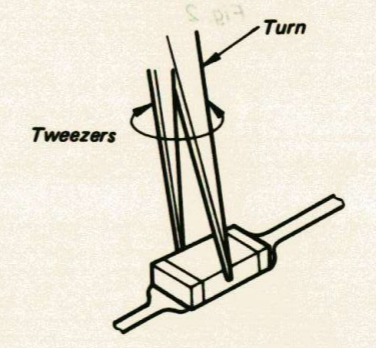
Removing chip components

- (1) Removing solder at electrode
Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off. Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

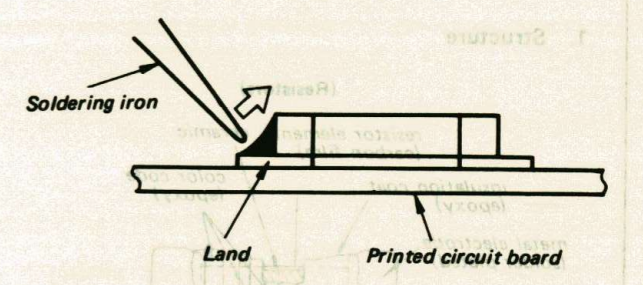
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

MELF (Metal Electrodes Face-Bonding) Components (AEP, E Model)

Warning
If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page.

MELF components are soldered directly to the surface of the printed circuit board. MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors. The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors. Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

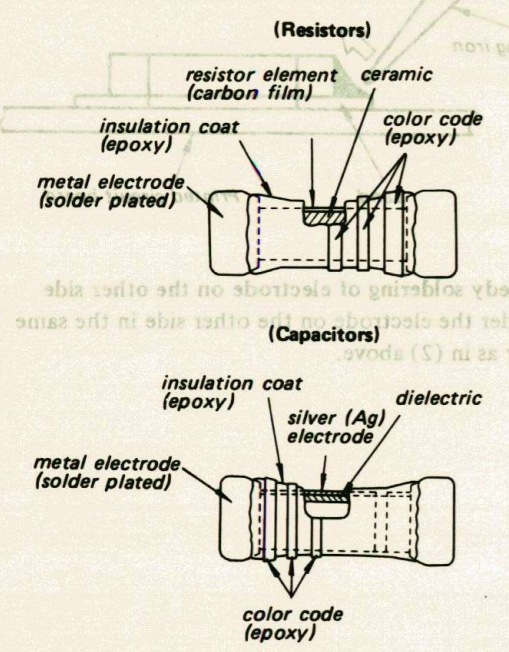


Fig. 1

2. Color Code Reading

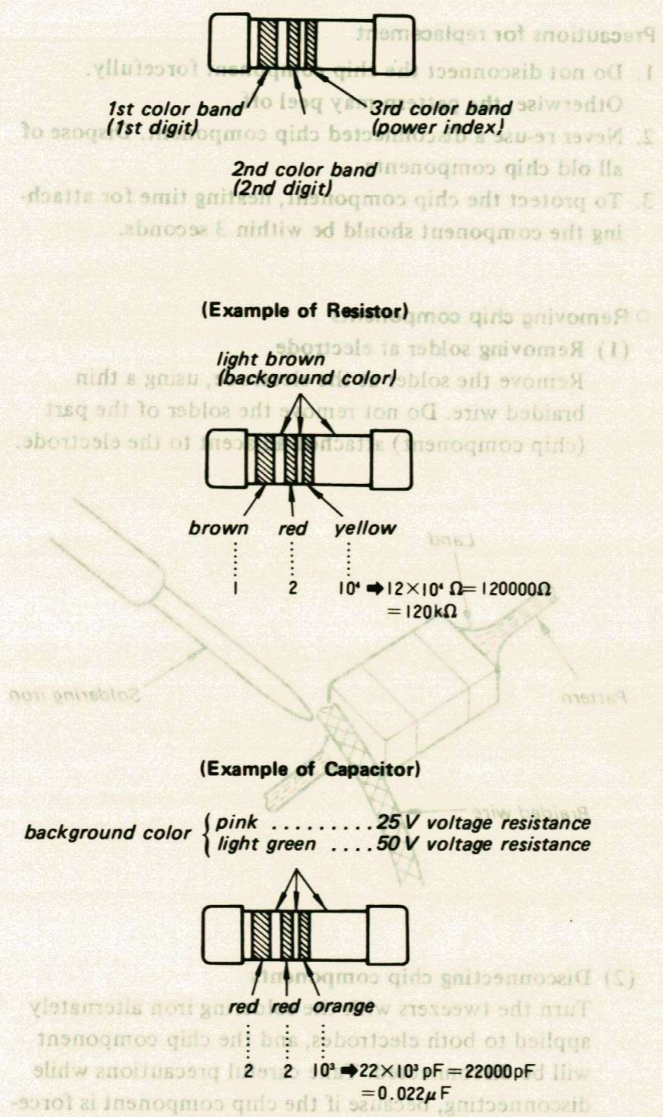


Fig. 2

3. How to Remove MELF Components

Use a soldering iron of at least 40W with an iron tip 4 mm in diameter and file the tip down to the angle shown in the diagram.

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

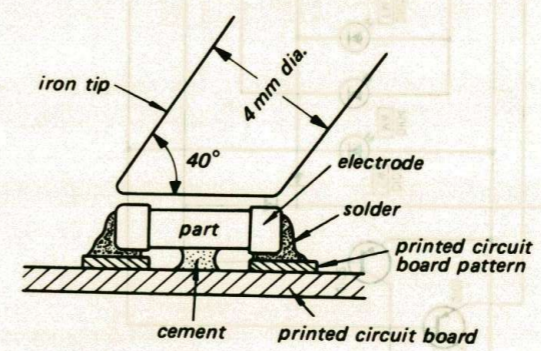


Fig. 3

4. Connecting MELF components

The value of MELF components is not displayed on the main body. Take due precautions to avoid mixing new MELF components with other ones.

1. Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the MELF component is to be connected. Too much solder may cause bridging.



Fig. 4

2. Speedy soldering

Hold the MELF component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the MELF component, heating time should be within 3 seconds.

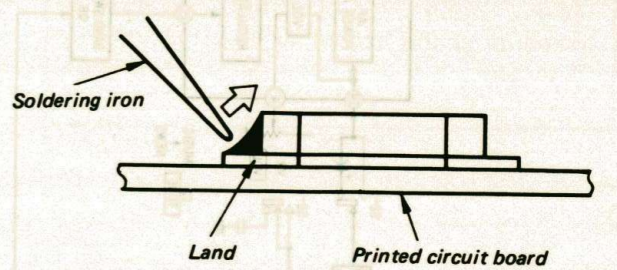


Fig. 5

3. Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in 2. above.

Note: In this model, MELF components are supplied for following parts.

1Ω	1-249-001-00
3.3pF	1-162-327-00
5.6pF	1-162-330-00
6.8pF	1-162-331-00

Use lead type resistors or 3216 type chip components in place of the mounted MELF components.

Lead type resistors may be mounted with leads cut short (see Fig. 6).

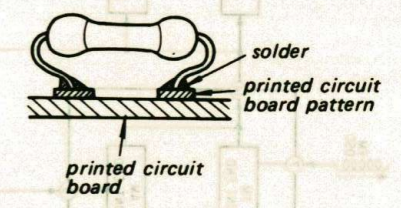
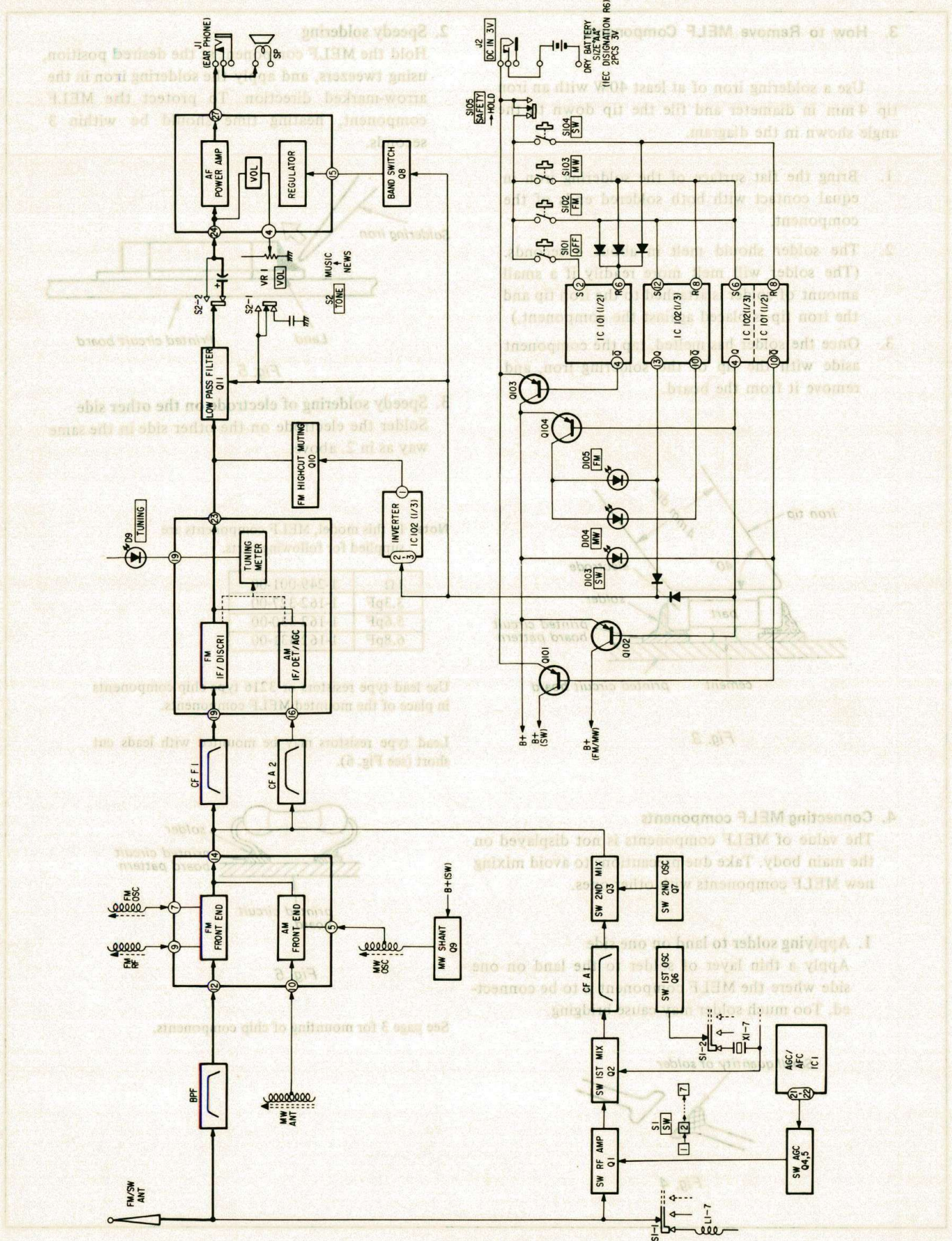


Fig. 6

See page 3 for mounting of chip components.

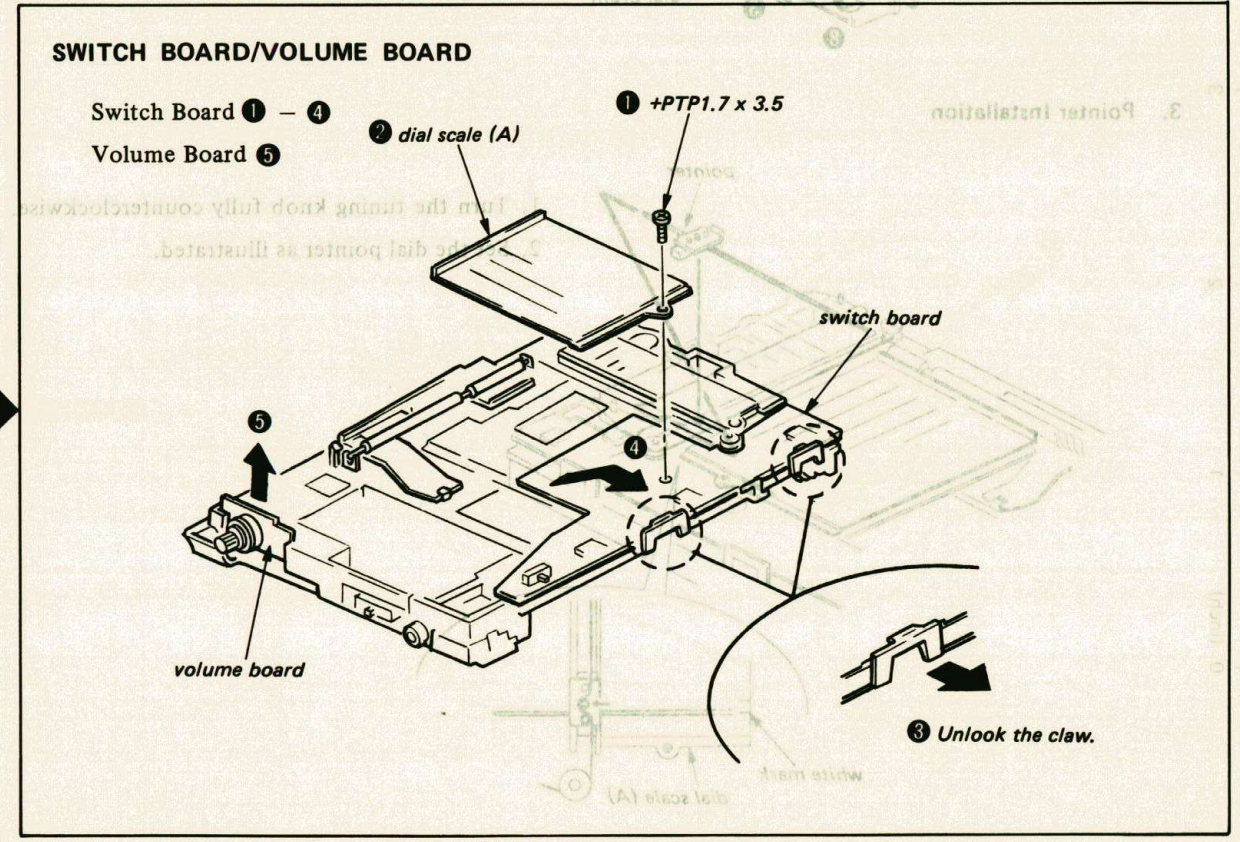
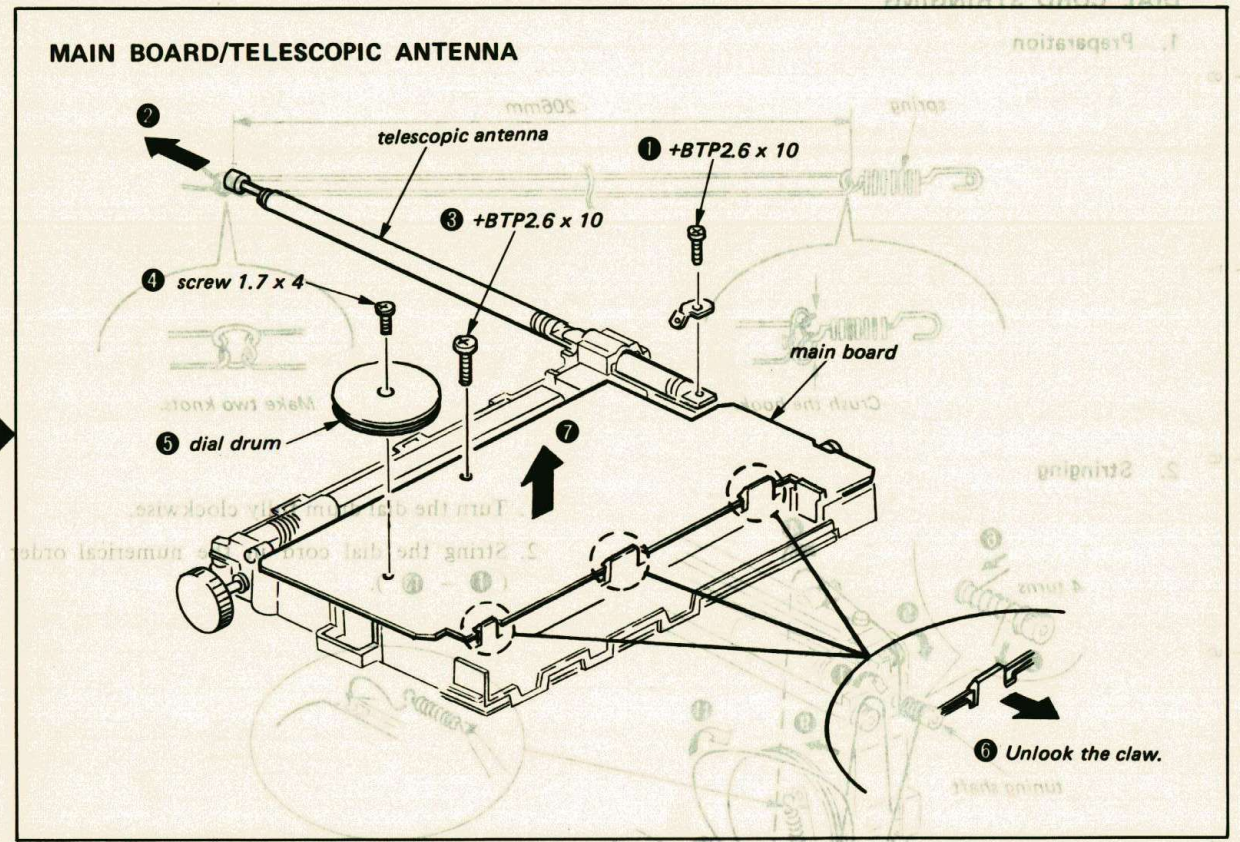
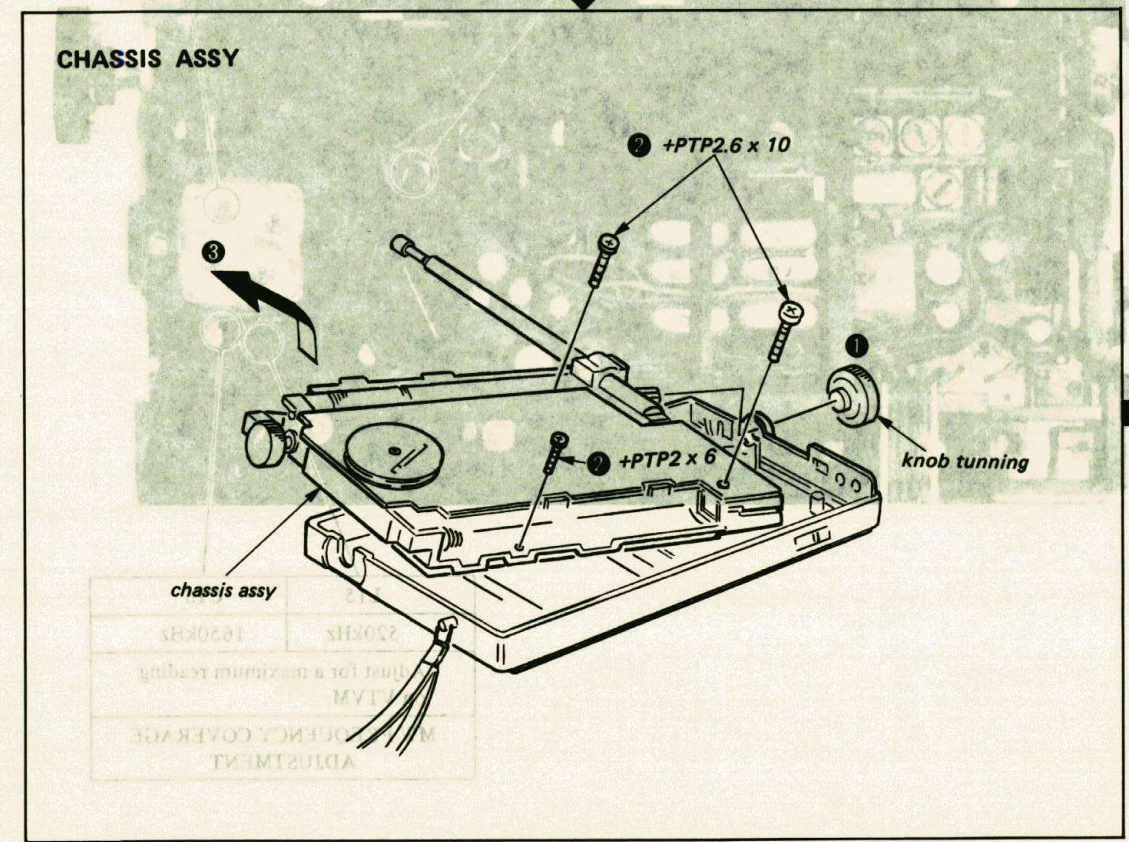
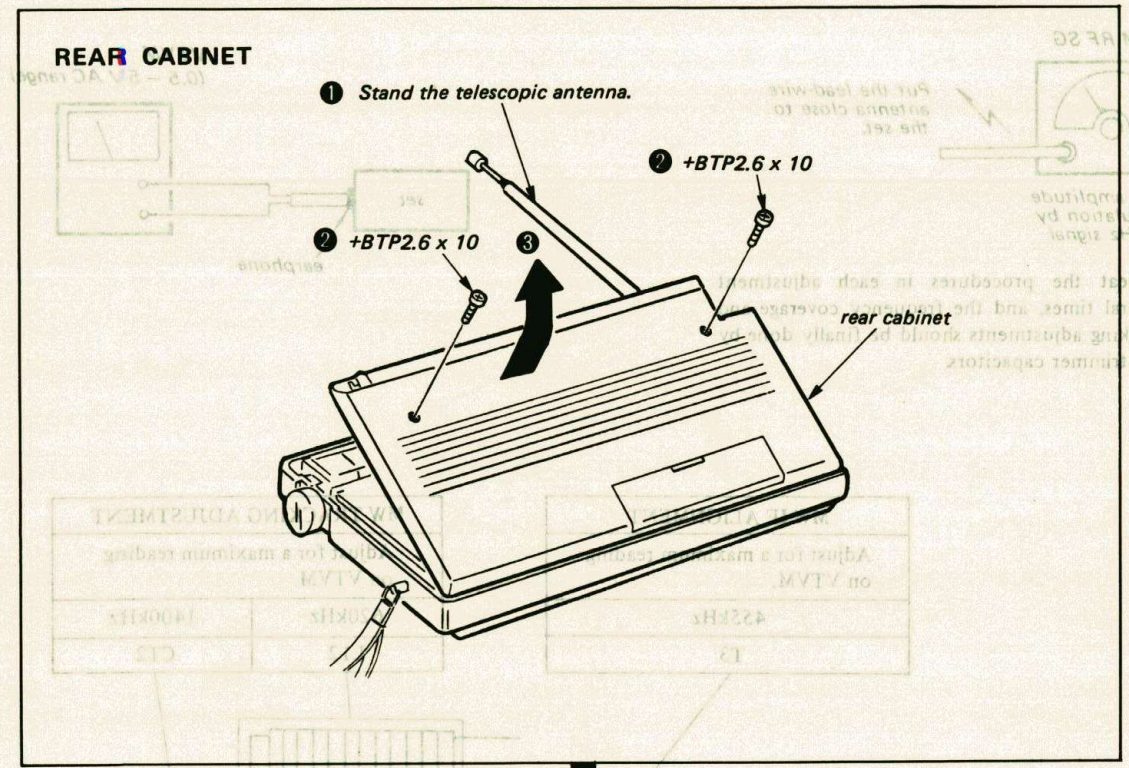
SECTION 1 OUTLINE

1-1. BLOCK DIAGRAM



SECTION 2 DISASSEMBLY

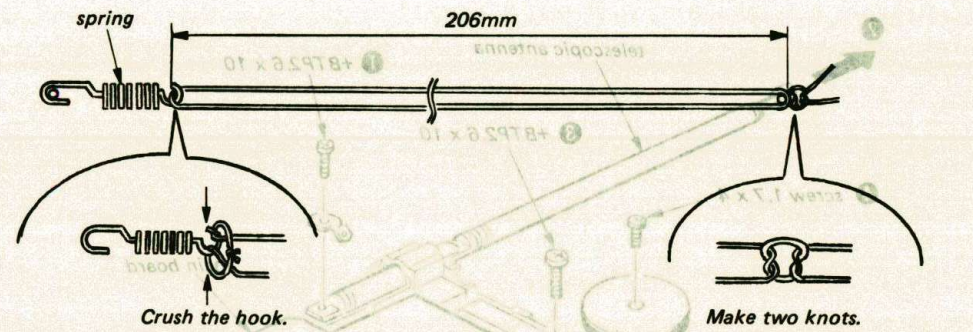
Follow the disassembly procedure in the numerical order given.



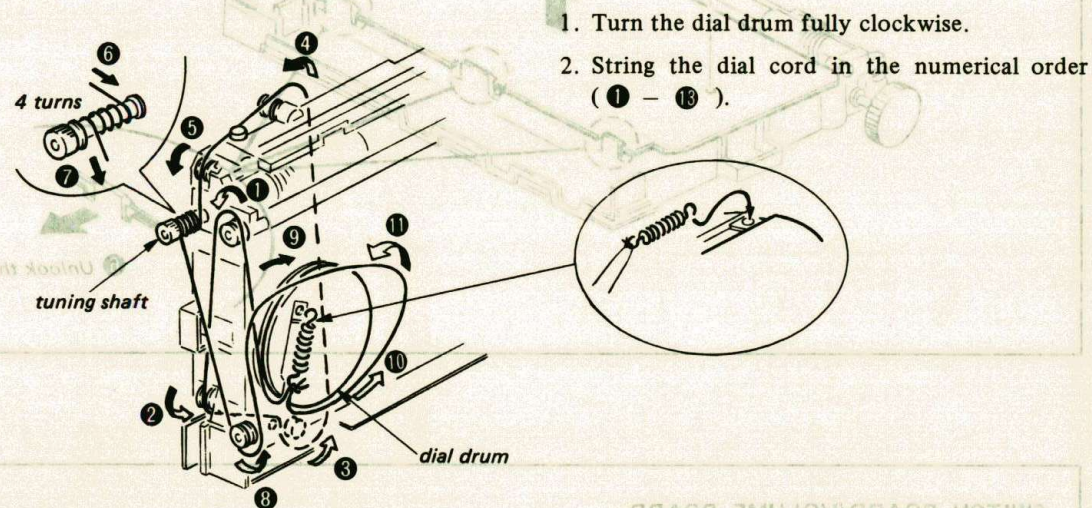
SECTION 3
ADJUSTMENTS

DIAL CORD STRINGING

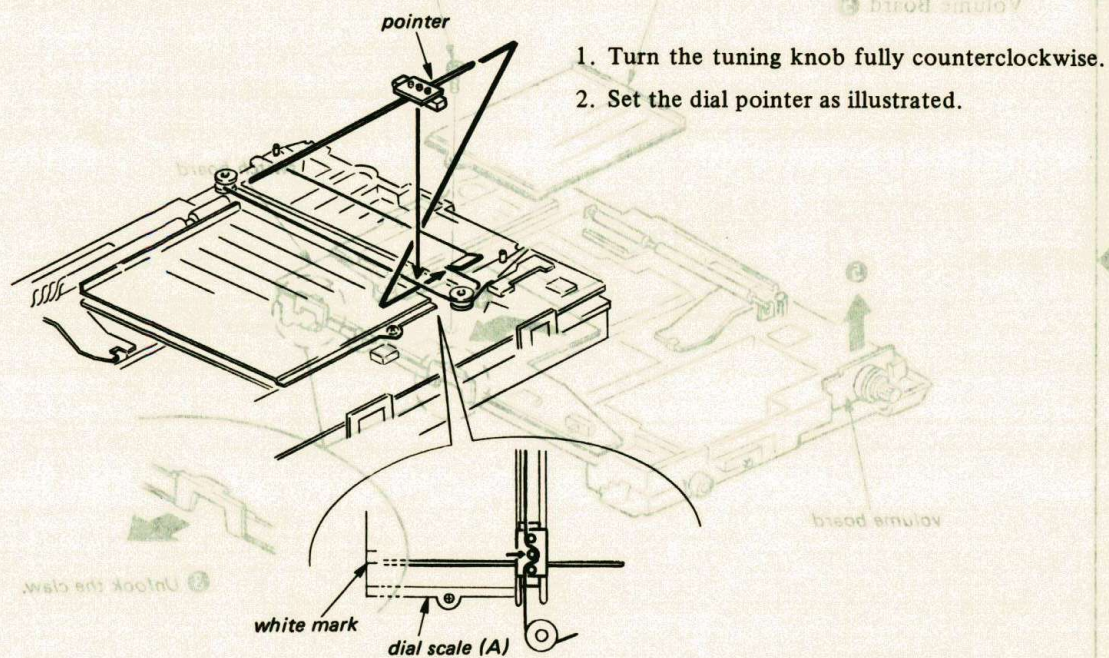
1. Preparation



2. Stringing

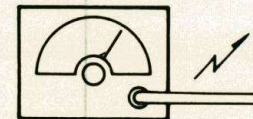


3. Pointer Installation



3-1. MW SECTION

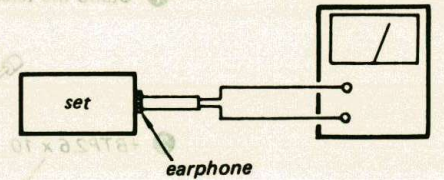
AM RF SG



30% amplitude modulation by 400 Hz signal

Put the lead-wire antenna close to the set.

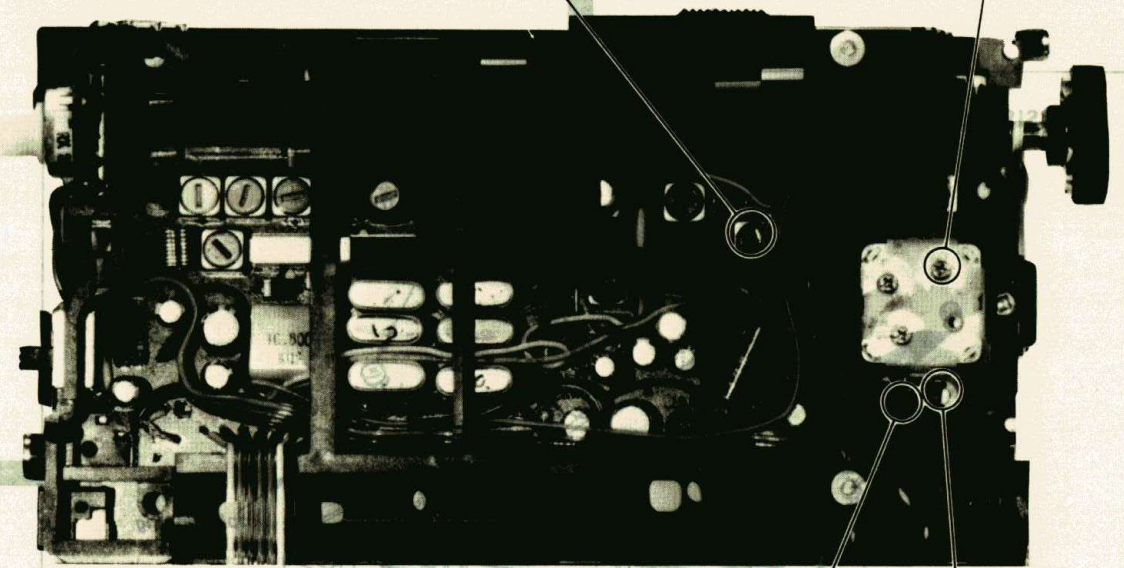
REAR VTVM (0.5 - 5V AC range)



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

MW IF ALIGNMENT
Adjust for a maximum reading on VTVM.
455kHz
T3

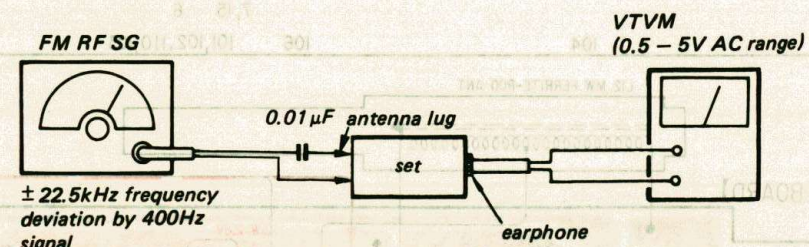
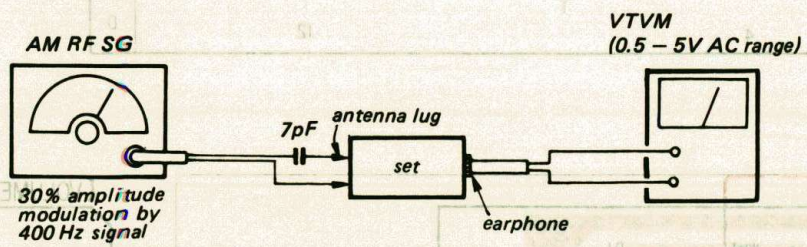
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
620kHz	1400kHz
L12	CT2



L15	CT5
520kHz	1650kHz
Adjust for a maximum reading on VTVM.	
MW FREQUENCY COVERAGE ADJUSTMENT	

3-2. SW SECTION

3-3. FM SECTION

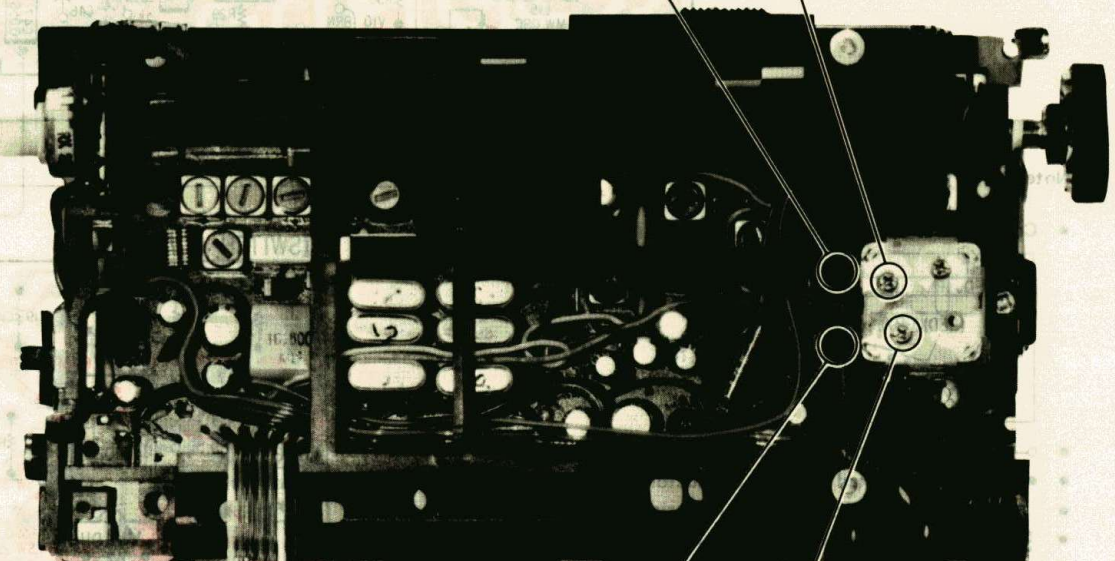
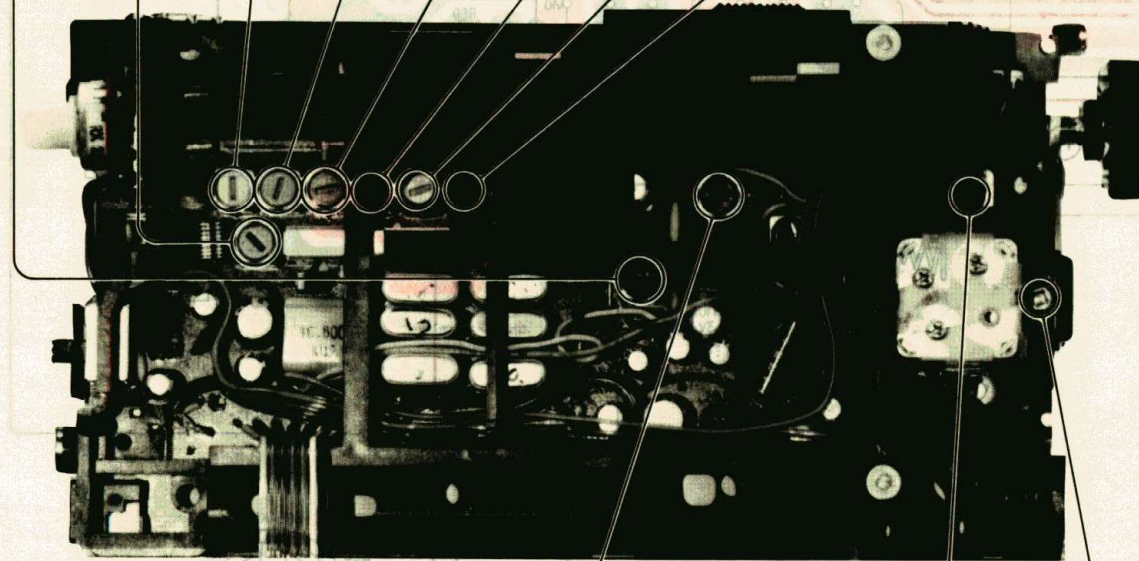


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

SW1-7 TRACKING ADJUSTMENT							
Adjust for a maximum reading on VTVM.							
6.1MHz	7.2MHz	9.65MHz	11.85MHz	15.25MHz	17.8MHz	21.65MHz	
T1	L1	L2	L3	L4	L5	L6	L7

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
86.5MHz	109.5MHz
L13	CT3



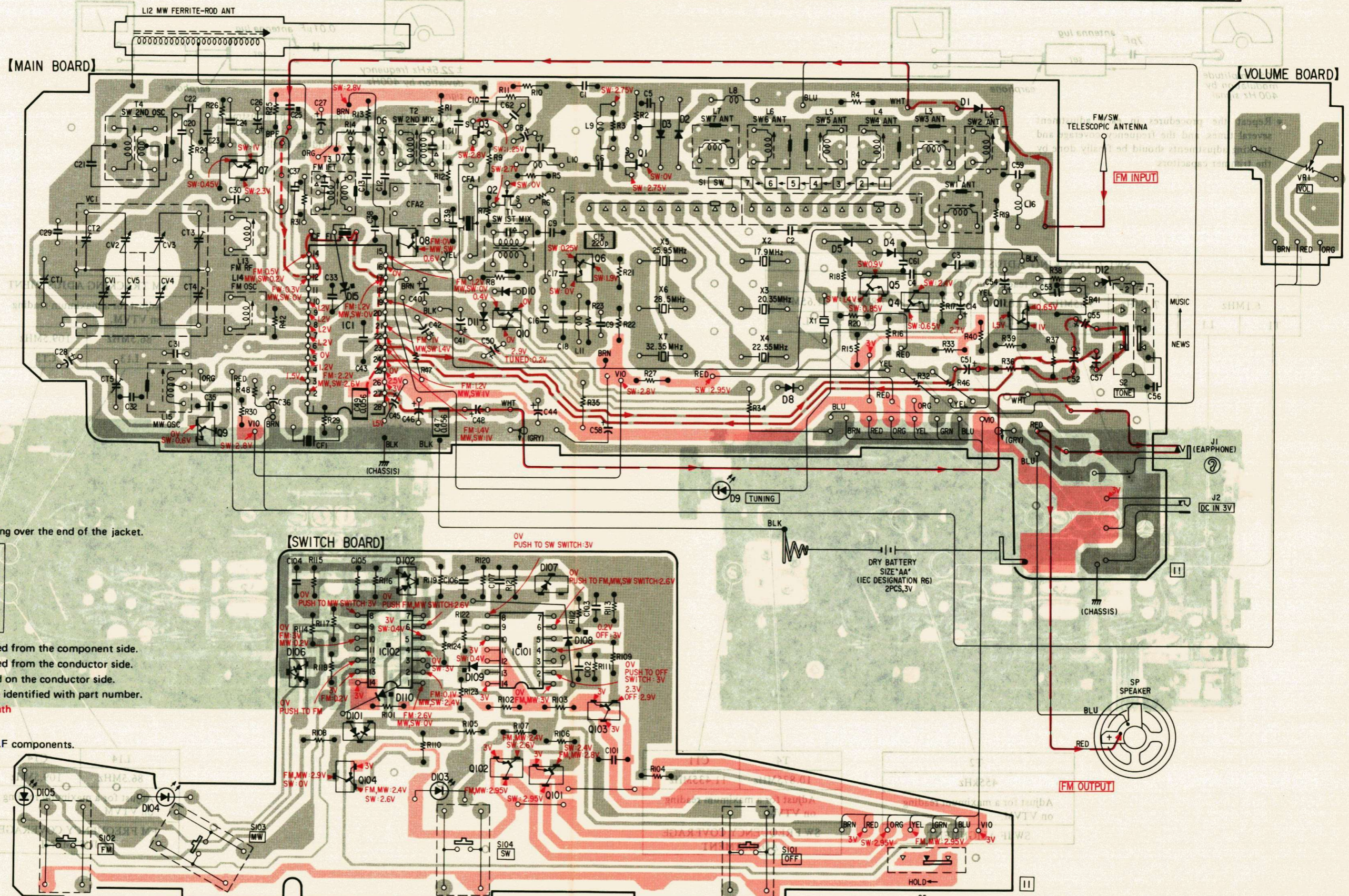
T2
455kHz
Adjust for a maximum reading on VTVM.
SW IF ALIGNMENT

T4	CT1
10.875MHz	11.435MHz
Adjust for a maximum reading on VTVM.	
SW FREQUENCY COVERAGE ADJUSTMENT	

L14	CT4
86.5MHz	109.5MHz
Adjust for a maximum reading on VTVM.	
FM FREQUENCY COVERAGE ADJUSTMENT	

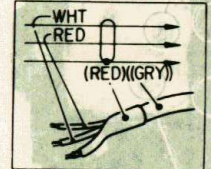
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Q IC		9	7	IC1	IC102	8	3	2	IC101	6	1	5	4	11	Q IC					
D	105	104		7, 15	6		11	10	102	101	103	3	2	9	8	5	4		12	D



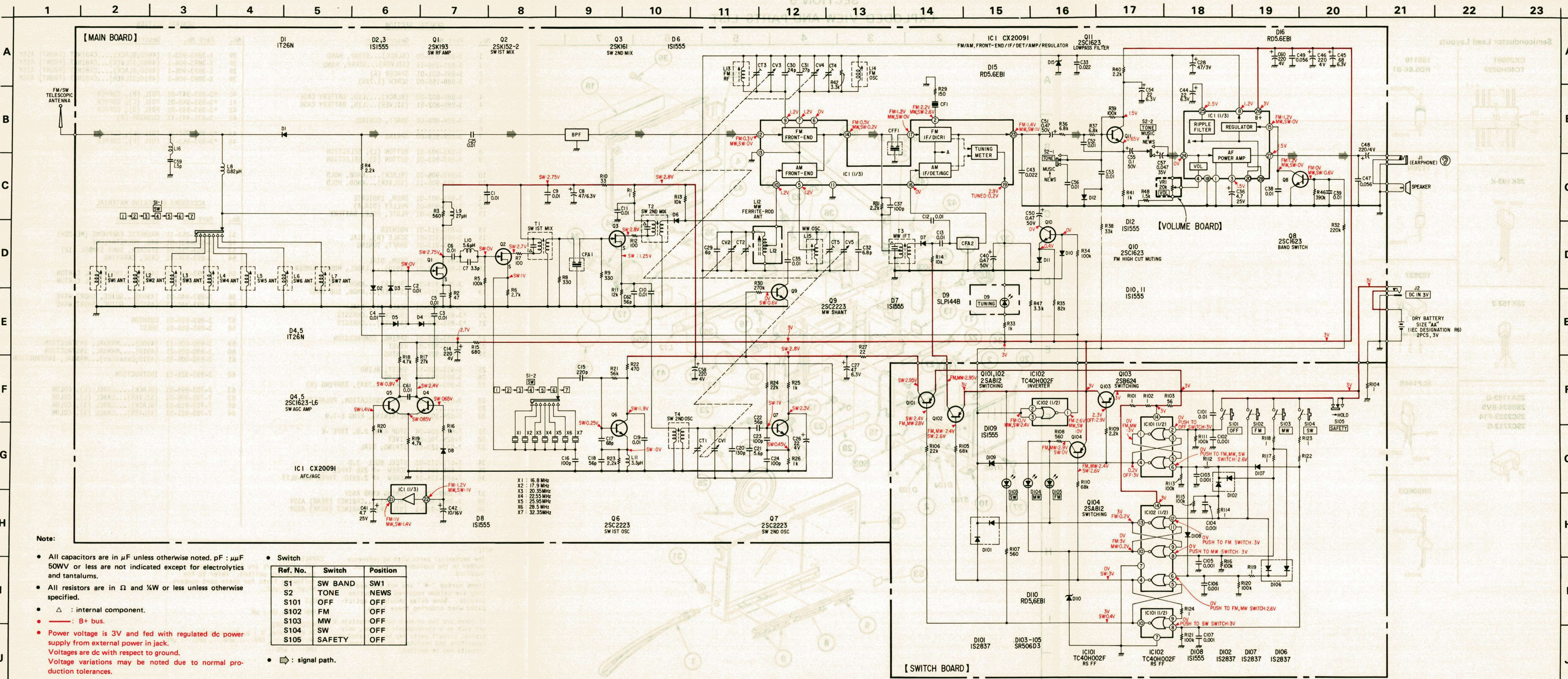
Note:

- Color code of sleeving over the end of the jacket.



- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- : indicates side identified with part number.
- : signal path
- ⋯ : B + pattern
- w-●-ll-● : MELF components.

4-2. SCHEMATIC DIAGRAM



- Note:**
- All capacitors are in μF unless otherwise noted. $pF : \mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
 - Δ : internal component.
 - $\color{red}{-}$: B+ bus.
 - Power voltage is 3V and fed with regulated dc power supply from external power in jack. Voltages are dc with respect to ground. Voltage variations may be noted due to normal production tolerances.

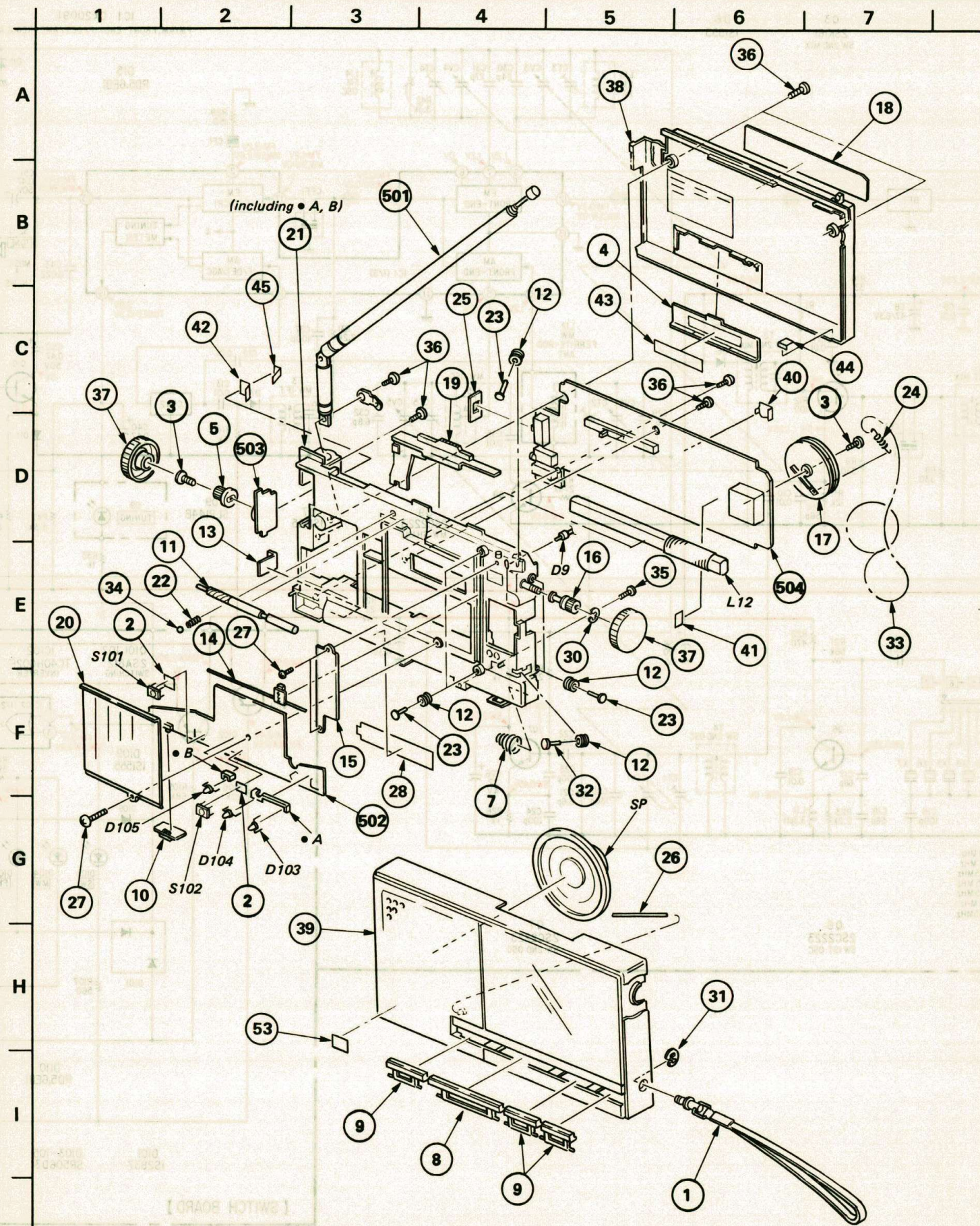
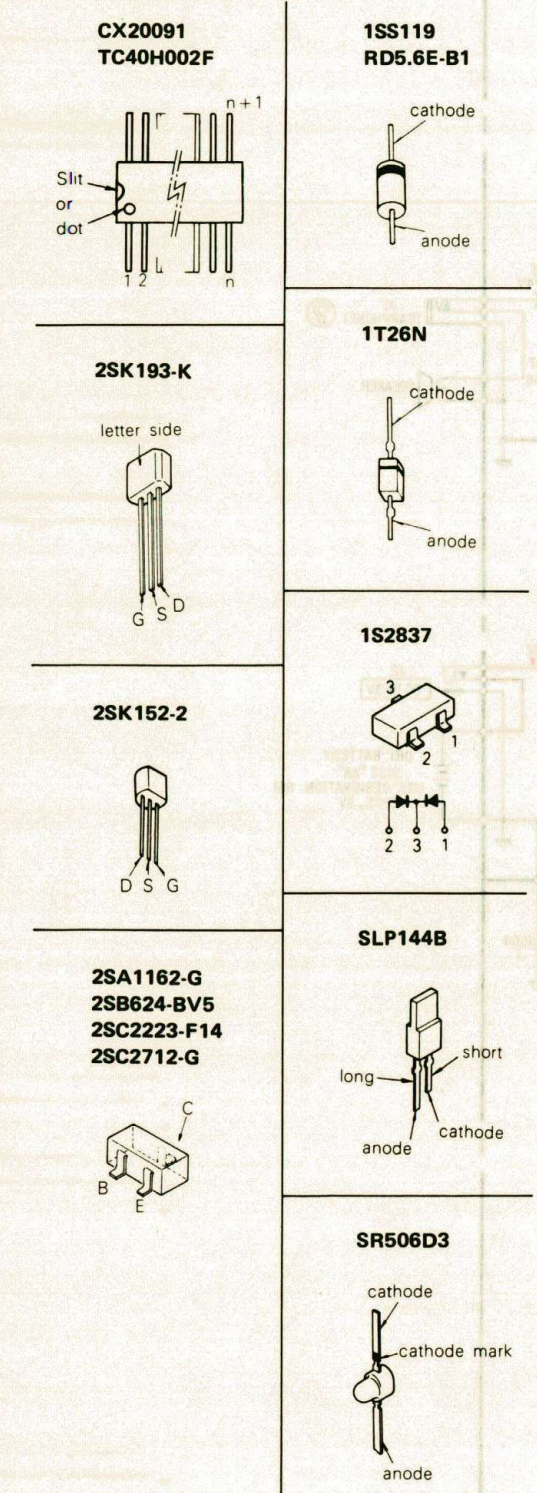
Switch

Ref. No.	Switch	Position
S1	SW BAND	SW1
S2	tone	NEWS
S101	OFF	OFF
S102	FM	OFF
S103	MW	OFF
S104	SW	OFF
S105	SAFETY	OFF

$\color{red}{\rightarrow}$: signal path.

SECTION 5
EXPLODED VIEW AND PARTS LIST

Semiconductor Lead Layouts



GENERAL SECTION			GENERAL SECTION		
No.	Part No.	Description	No.	Part No.	Description
1	3-881-938-00	(BLACK)...STRAP, HAND	39	X-3893-903-1	(4900;BLACK)...CABINET (FRONT) ASSY
1	3-881-938-11	(SILVER)...STRAP, HAND	39	X-3893-904-1	(4900;SILVER)...CABINET (FRONT) ASSY
2	3-885-031-01	SPACER (A)	39	X-3893-905-1	(4910;BLACK)...CABINET (FRONT) ASSY
3	3-888-156-00	SCREW (1.7X4)	39	X-3893-906-1	(4910;SILVER)...CABINET (FRONT) ASSY
4	3-889-802-00	(BLACK)...LID, BATTERY CASE	40	*3-893-947-01	FOIL (B), COPPER
4	3-889-802-51	(SILVER)...LID, BATTERY CASE	41	*3-893-948-01	FOIL (C), COPPER
5	3-889-808-00	SHAFT, CONTROL	42	*3-893-949-01	FOIL (D), COPPER
6		43	3-831-441-XX	CUSHION (B)
7	3-889-819-00	SPRING	44	*3-893-952-01	FOIL (E), COPPER
8	3-893-902-01	BUTTON (L), SELECTION	45	*3-893-953-01	FOIL (F), COPPER
9	3-893-903-01	BUTTON (S), SELECTION			
10	3-893-905-01	(BLACK)...KNOB, HOLD			
10	3-893-905-11	(SILVER)...KNOB, HOLD			
11	3-893-907-01	DRUM, INDICATE			
12	3-893-908-01	PULLEY (DIA.4)			
13	3-893-910-01	PLATE, POLE, BATTERY			
14	3-893-911-01	POINTER			
15	3-893-912-01	SCALE (B), DIAL			
16	3-893-913-01	SHAFT, TUNING			
17	3-893-914-01	DRUM, DIAL			
18	3-893-917-01	(4910)...LABEL, MODEL NUMBER			
19	3-893-919-01	(BLACK)...KNOB, SUB BAND			
19	3-893-919-11	(SILVER)...KNOB, SUB BAND			
20	3-893-920-01	SCALE (A), DIAL			
21	*3-893-923-01	(BLACK)...CHASSIS			
21	*3-893-923-11	(SILVER)...CHASSIS			
22	3-893-926-01	SPRING, COMPRESSION			
23	3-893-927-01	RIVET			
24	3-893-928-01	SPRING			
25	9-911-838-XX	SHEET, BLIND			
26	3-893-933-01	SPRING			
27	3-893-942-01	SCREW (1.7X4), TAPPING (B)			
28	3-893-944-01	SHEET INDICATION, POLARITY			
29				
30	7-624-103-01	RETAINING, RING E-1.9			
31	7-624-104-04	STOP RING 2.0, TYPE -E			
32	7-625-702-80	RIVET			
33	7-633-120-52	STRING, DIAL			
34	7-671-113-02	STEEL BOLL 3.0			
35	7-685-104-14	SCREW +P 2X6 TYPE2 SLIT			
36	7-685-135-14	SCREW +P 2.6X10 TYPE2 NON-SLIT			
37	X-3889-802-1	TUNING KNOB ASSY			
38	X-3893-901-1	(BLACK)...CABINET (REAR) ASSY			
38	X-3893-902-1	(SILVER)...CABINET (REAR) ASSY			

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
51	1-504-059-11	MAGNETIC EARPHONE (ME-20H)
52	3-570-631-01	BAG, POLYETHYLENE
53	3-703-710-01	STICKER, SONY SYMBOL (12)
54	3-893-934-01	CASE, CARRYING
55	3-893-936-01	(4900)...INDIVIDUAL CARTON
55	3-893-939-01	(4910)...INDIVIDUAL CARTON
56	3-893-940-01	(4900)...GUIDE, SHORT WAVE
56	3-893-940-11	(4910)...GUIDE, SHORT WAVE
57	3-893-938-01	CUSHION
58	3-893-950-01	SHEET
59	3-990-005-11	(4900)...MANUAL, INSTRUCTION
60	3-990-005-21	(4910)...MANUAL, INSTRUCTION
61	3-990-005-31	(4910;Canadian)...MANUAL, INSTRUCTION
62	3-993-321-11	INSTRUCTION
63	7-703-895-01	(BLACK)...LABEL (L), COLOR
63	7-703-906-01	(SILVER)...LABEL (L), COLOR
64	7-703-910-01	(BLACK)...LABEL (S), COLOR
64	7-703-921-01	(SILVER)...LABEL (S), COLOR

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF , PF: μPF .

COILS

- MMH: mH, UH: μH

SEMICONDUCTORS

In each case, U: μ , for example:

- UA: μA , UPA: μPA , UPC: μPC , UPD: μPD

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	1-501-323-11	ANTENNA, TELESCOPIC			
502	*1-613-378-11	PC BOARD, SWITCH			
503	*1-613-379-11	PC BOARD, VOLUME			
504	*A-3660-525-A	MOUNTED PCB, MAIN			
BPF	1-235-171-00	FILTER, BAND PASS			
C1	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C2	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C3	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C4	1-162-306-31	CERAMIC 0.01MF	10%		50V
C5	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C6	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C7	1-162-327-00	CERAMIC MELF 3.3PF	10%		50V
C8	1-123-647-00	ELECT 47MF	20%		6.3V
C9	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C10	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C11	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C12	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C13	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C14	1-124-434-00	ELECT 220MF	20%		4V
C15	1-163-189-00	CERAMIC CHIP 220PF	5%		50V
C16	1-102-973-00	CERAMIC 100PF	5%		50V
C17	1-101-888-00	CERAMIC 68PF	5%		50V
C18	1-101-884-00	CERAMIC 56PF	5%		50V
C19	1-161-013-00	CERAMIC 0.01MF	10%		25V
C20	1-102-914-00	CERAMIC 130PF	5%		50V
C21	1-162-330-00	CERAMIC MELF 5.6PF	10%		50V
C22	1-101-884-00	CERAMIC 56PF	5%		50V
C23	1-102-529-00	CERAMIC 100PF	10%		50V
C24	1-102-529-00	CERAMIC 100PF	10%		50V
C25	1-162-306-31	CERAMIC 0.01MF	10%		50V
C26	1-124-430-00	ELECT 22MF	20%		
C27	1-131-387-00	TANTAL 47MF	20%		6.3V
C28	1-131-393-00	TANTAL 47MF	20%		3.15V
C29	1-102-942-00	CERAMIC 5PF	0.5PF		50V
C30	1-102-960-00	CERAMIC 24PF	5%		50V
C31	1-102-883-00	CERAMIC 27PF	5%		50V
C32	1-162-331-00	CERAMIC MELF 6.8PF	10%		50V
C33	1-163-073-00	CERAMIC CHIP 0.022MF			50V
C35	1-163-059-00	CERAMIC 0.01MF	10%		50V
C36	1-123-616-00	ELECT 4.7MF	20%		25V
C37	1-163-181-00	CERAMIC CHIP 100PF	10%		50V
C38	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C39	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C40	1-123-610-00	ELECT 0.47MF	20%		50V
C41	1-123-616-00	ELECT 4.7MF	20%		25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C42	1-123-617-00	ELECT 10MF	20%		16V
C43	1-163-073-00	CERAMIC CHIP 0.022MF			50V
C44	1-123-618-00	ELECT 22MF	20%		6.3V
C45	1-131-388-00	TANTAL 68MF	20%		6.3V
C46	1-124-413-00	ELECT 220MF	20%		4V
C47	1-163-828-00	CERAMIC CHIP 0.056MF	10%		50V
C48	1-124-434-00	ELECT 220MF	20%		4V
C49	1-163-828-00	CERAMIC CHIP 0.056MF	10%		50V
C50	1-123-610-00	ELECT 0.47MF	20%		50V
C51	1-123-610-00	ELECT 0.47MF	20%		50V
C52	1-161-013-00	CERAMIC 0.01MF	10%		25V
C53	1-161-013-00	CERAMIC 0.01MF	10%		25V
C54	1-123-618-00	ELECT 22MF	20%		6.3V
C55	1-123-607-00	ELECT 0.1MF	20%		50V
C56	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C57	1-131-479-00	TANTAL 0.047MF	20%		16
C58	1-124-413-00	ELECT 220MF	20%		4V
C59	1-163-148-00	CERAMIC CHIP 1.5PF	20%		50V
C60	1-124-413-00	ELECT 220MF	20%		4V
C61	1-163-059-00	CERAMIC CHIP 0.01MF	10%		50V
C62	1-101-884-00	CERAMIC 56PF	5%		50V
C101	1-163-059-00	CERAMIC CHIP 0.01MF	5%		50V
C102	1-163-205-00	CERAMIC CHIP 0.001MF	5%		50V
C103	1-163-205-00	CERAMIC CHIP 0.001MF	5%		50V
C104	1-163-205-00	CERAMIC CHIP 0.001MF	5%		50V
C105	1-163-205-00	CERAMIC CHIP 0.001MF	5%		50V
C106	1-163-205-00	CERAMIC CHIP 0.001MF	5%		50V
C107	1-163-205-00	CERAMIC CHIP 0.001MF	5%		50V
CF1	1-567-097-61	FILTER, CERAMIC			
CFA1	1-567-312-11	FILTER, CERAMIC			
CFA2	1-527-982-00	FILTER, CERAMIC			
CFF1	1-567-097-61	FILTER, CERAMIC			
CT1	1-141-311-11	CAP, VAR, TRIMMER			
CT5	1-141-290-00	CAP, FILM TRIMMER			
CV1-5	1-151-480-11	CAP, TUNING, POLYETHYLEN			
CT2-4	1-151-480-11	CAP, TUNING, POLYETHYLEN			
D1	8-719-104-15	DIODE 1T26N			
D2	8-719-911-19	DIODE 1S5119			
D3	8-719-911-19	DIODE 1S5119			
D4	8-719-104-15	DIODE 1T26N			
D5	8-719-104-15	DIODE 1T26N			
D6	8-719-911-19	DIODE 1S5119			
D7	8-719-911-19	DIODE 1S5119			
D8	8-719-911-19	DIODE 1S5119			
D9	8-719-901-44	DIODE SLP144B			

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF . Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: μF , PF: μF .

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

- In each case, U : μ , for example:
- UA...: μA ..., UPA...: μPA ..., UPC...: μPC ,
- UPD...: μPD ...

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description. Includes parts like DIODE 1SS119, DIODE RD5.6EB1, IC CX20091, JACK, COIL (ANT), MICRO INDUCTOR, TRANSISTOR 2SK193-K, etc.

Table with columns: Ref.No., Part No., Description. Includes parts like TRANSISTOR 2SC1623, TRANSISTOR 2SA1162-G, CARBON MELF, CARBON, etc.

Table with columns: Ref.No., Part No., Description. Includes parts like CARBON, CARBON MELF, SWITCH, SLIDE (SW BAND), SWITCH, SLIDE (TONE), SWITCH, KEY BOARD (OFF), etc.

Table with columns: Ref.No., Part No., Description. Includes parts like TRANSFORMER, IFT, TRANSFORMER, IF, COIL, OSC, RES, VAR, CARBON 20K, VIBRATOR, CRYSTAL, etc.

NOTE: The mechanical parts with no reference number in the exploded views are not supplied. Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items. If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF. COILS: MMH : mH, UH : μH. SEMICONDUCTORS: In each case, U : μ, for example: UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

NOTE: The mechanical parts with no reference number in the exploded views are not supplied. Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items. If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS: All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF. COILS: MMH : mH, UH : μH. SEMICONDUCTORS: In each case, U : μ, for example: UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS				ELECTRICAL PARTS			
Ref. No.	Part No.	Description	QTY	Ref. No.	Part No.	Description	QTY
R41	1-547-831-00	CARBON	1X	R108	1-547-825-00	CARBON	500
R42	1-547-843-00	CARBON	3.3K	R109	1-547-839-00	CARBON	5.2K
R43	1-547-843-00	CARBON	300K	R110	1-547-825-00	CARBON	68K
R44	1-547-843-00	CARBON	3.3K	R111	1-547-829-00	CARBON	100K
R45	1-547-843-00	CARBON	1.5K	R112	1-549-001-00	CARBON MELF	1
R46	1-547-843-00	CARBON	1	R113	1-547-829-00	CARBON	100K
R47	1-547-843-00	CARBON	3.3K	R114	1-549-001-00	CARBON MELF	1
R48	1-547-825-00	CARBON	1.5K	R115	1-547-829-00	CARBON	100K
R49	1-549-001-00	CARBON MELF	1	R116	1-547-829-00	CARBON	100K
R100	1-549-001-00	CARBON MELF	1	R117	1-549-001-00	CARBON MELF	1
R101	1-547-801-00	CARBON	50	R118	1-549-001-00	CARBON MELF	1
R102	1-547-801-00	CARBON	50	R119	1-549-001-00	CARBON MELF	1
R103	1-549-001-00	CARBON MELF	1	R120	1-547-829-00	CARBON	100K
R104	1-549-001-00	CARBON MELF	1	R121	1-547-829-00	CARBON	100K
R105	1-547-825-00	CARBON	68K	R122	1-549-001-00	CARBON MELF	1
R106	1-547-825-00	CARBON	52K	R123	1-549-001-00	CARBON MELF	1
R107	1-547-825-00	CARBON	280	R124	1-549-001-00	CARBON MELF	1
R108	1-547-825-00	CARBON	500	21	1-844-929-11	SWITCH, SLIDE (SW BAND)	
R109	1-547-839-00	CARBON	5.2K	22	1-844-123-00	SWITCH, SLIDE (TONE)	
R110	1-547-825-00	CARBON	68K	R201	1-844-928-11	SWITCH, KEY BOARD (DEF)	
R111	1-547-829-00	CARBON	100K	2105	1-844-928-11	SWITCH, KEY BOARD (FM)	
R112	1-549-001-00	CARBON MELF	1	2106	1-844-928-11	SWITCH, KEY BOARD (HW)	
R113	1-547-829-00	CARBON	100K	2107	1-844-928-11	SWITCH, KEY BOARD (SW)	
R114	1-549-001-00	CARBON MELF	1	2108	1-833-810-00	SWITCH, SLIDE (SAFETY)	
R115	1-547-829-00	CARBON	100K	28	1-803-397-11	SPEAKER	
R116	1-547-829-00	CARBON	100K				
R117	1-549-001-00	CARBON MELF	1				
R118	1-549-001-00	CARBON MELF	1				
R119	1-549-001-00	CARBON MELF	1				
R120	1-547-829-00	CARBON	100K				
R121	1-547-829-00	CARBON	100K				
R122	1-549-001-00	CARBON MELF	1				
R123	1-549-001-00	CARBON MELF	1				
R124	1-549-001-00	CARBON MELF	1				

NOTE:
 The electrical parts with no reference number in the exploded view are not supplied.
 Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 If there are two or more same circuit components such as a stereo-type machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.
 CAPACITORS
 (1) Capacitors are in μ F. Common capacitor values are omitted. Refer to the following lists for exact part numbers.
 COILS
 SEMICONDUCTORS
 In each case, U.C. for example, UA-400, UBA-400, UBC-400, etc.