

# Service Manual

Radio

10-BAND  
COMMUNICATION RECEIVER

# RF-4800



## ■ SPECIFICATIONS

Frequency Range:	FM	88~108 MHz
	MW	525~1605 kHz (571~187m)
	SW <sub>1</sub>	1.6~3 MHz (187~100m)
	SW <sub>2</sub>	3~7 MHz (100~42.9m)
	SW <sub>3</sub>	7~11 MHz (42.9~27.3m)
	SW <sub>4</sub>	11~15 MHz (27.3~20m)
	SW <sub>5</sub>	15~19 MHz (20~15.8m)
	SW <sub>6</sub>	19~23 MHz (15.8~14.7m)
	SW <sub>7</sub>	23~27.3 MHz (14.7~11m)
	SW <sub>9</sub>	27~31 MHz (11.1~9.7m)
Intermediate Frequency:	FM	10.7 MHz
	MW/SW <sub>1</sub>	455 kHz
	SW <sub>2</sub> ~ <sub>8</sub>	1st IF 2 MHz 2nd IF 455 kHz
Sensitivity:	FM	3 $\mu$ V (S/N 26 dB)
	MW	60 $\mu$ V/m (S/N 10 dB)
	SW <sub>1</sub>	1 $\mu$ V (S/N 10 dB)
	SW <sub>2</sub>	1.3 $\mu$ V (S/N 10 dB)
	SW <sub>3</sub>	0.8 $\mu$ V (S/N 10 dB)
	SW <sub>4</sub>	1.2 $\mu$ V (S/N 10 dB)
	SW <sub>5</sub>	1.2 $\mu$ V (S/N 10 dB)
	SW <sub>6</sub>	1.2 $\mu$ V (S/N 10 dB)
	SW <sub>7</sub>	1.3 $\mu$ V (S/N 10 dB)
SW <sub>8</sub>	1.3 $\mu$ V (S/N 10 dB)	

Power Source:	AC 120V 60 Hz or 12V (Eight "D" Size Flash-light Batteries) (Panasonic UM-1 or equivalent)
Power Consumption:	10W (AC Only)
Speaker:	10 cm (4") PM Dynamic Speaker
Dimensions:	18 $\frac{3}{8}$ " (Wide) x 7 $\frac{1}{8}$ " (High) x 13 $\frac{1}{8}$ " (Deep) (482 x 200 x 354 mm)
Weight:	9 kg (19 lb 13.5 oz) with batteries
Impedance:	Speaker .....4 $\Omega$ AUX Jack .....300k $\Omega$ (20mV) REC OUT Jack .....4k $\Omega$ (400mV) Earphone Jack .....4~8 $\Omega$ FM EXT ANT .....300 $\Omega$ SW <sub>1</sub> /MW .....75 $\Omega$ SW <sub>2</sub> ~ <sub>8</sub> .....75 $\Omega$

Specifications are subject to change without notice for further improvement.

# Panasonic®

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## ■ TO REMOVE CABINET COVER

1. Remove the four (4) covers for the handle in the direction of arrow, as shown in fig. 1.
2. Remove the six (5) screws (nos. 1~5) for the handle and cabinet cover, as shown in fig. 2.
3. Remove the six (5) screws (nos. 1~5) for the handle and cabinet cover, as shown in fig. 3.
4. Remove the eight (8) screws (nos. 1~8) for the cabinet cover, as shown in fig. 4.
5. Remove the nine (9) screws (nos. 1~9) for the cabinet cover, as shown in fig. 5.
6. Remove the cabinet cover.
7. To reassemble, reverse the above procedure.

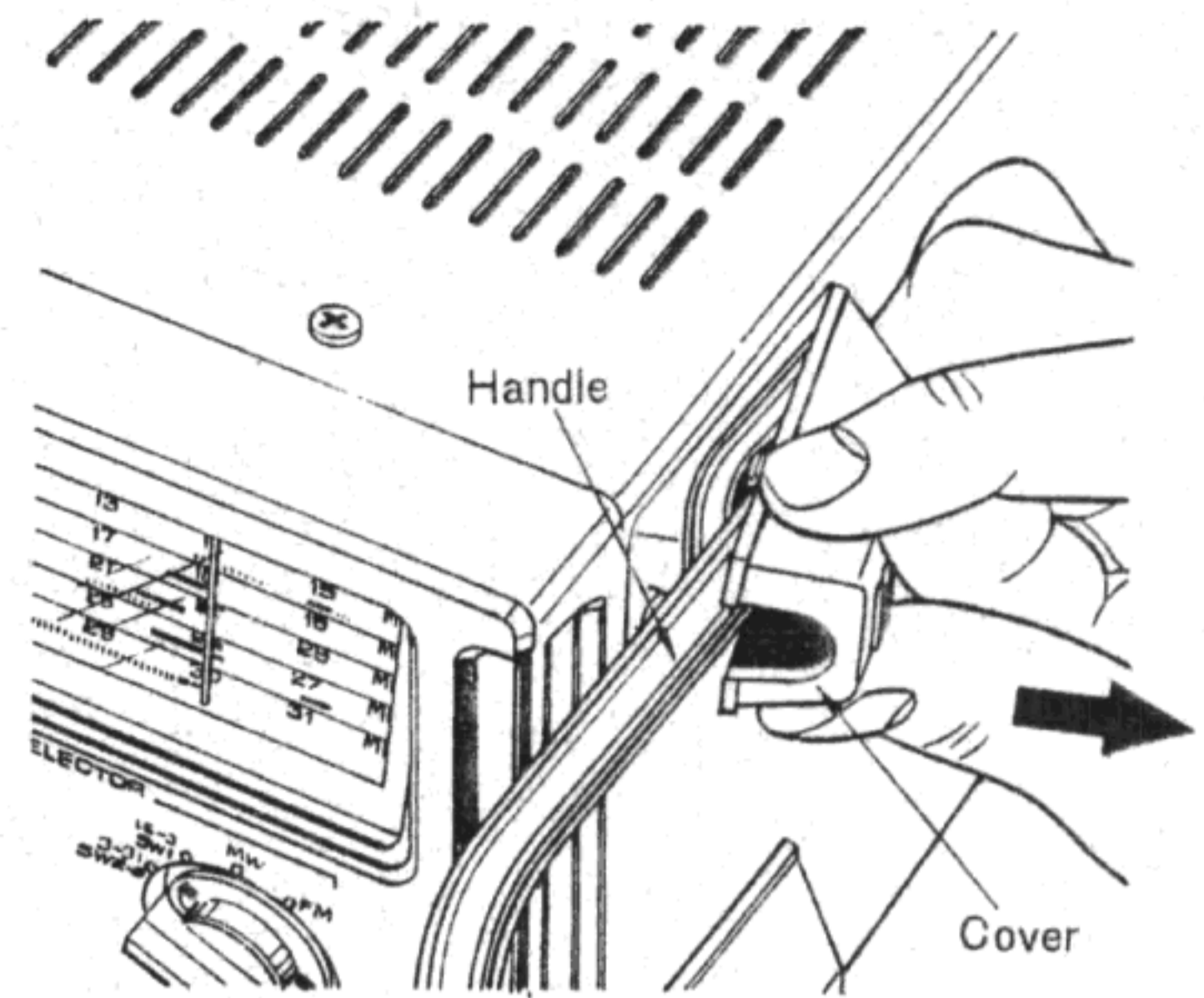


Fig. 1

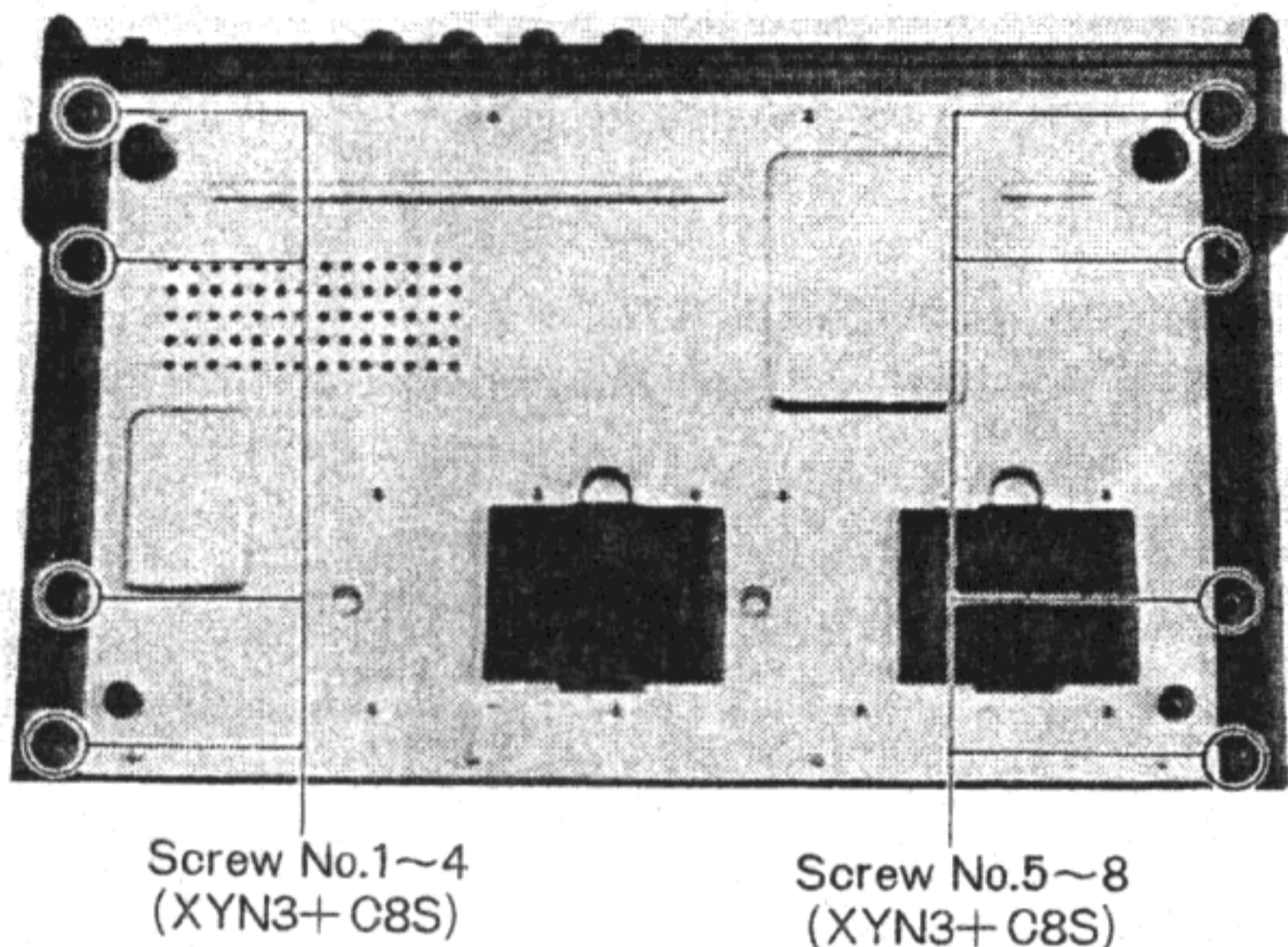


Fig. 4

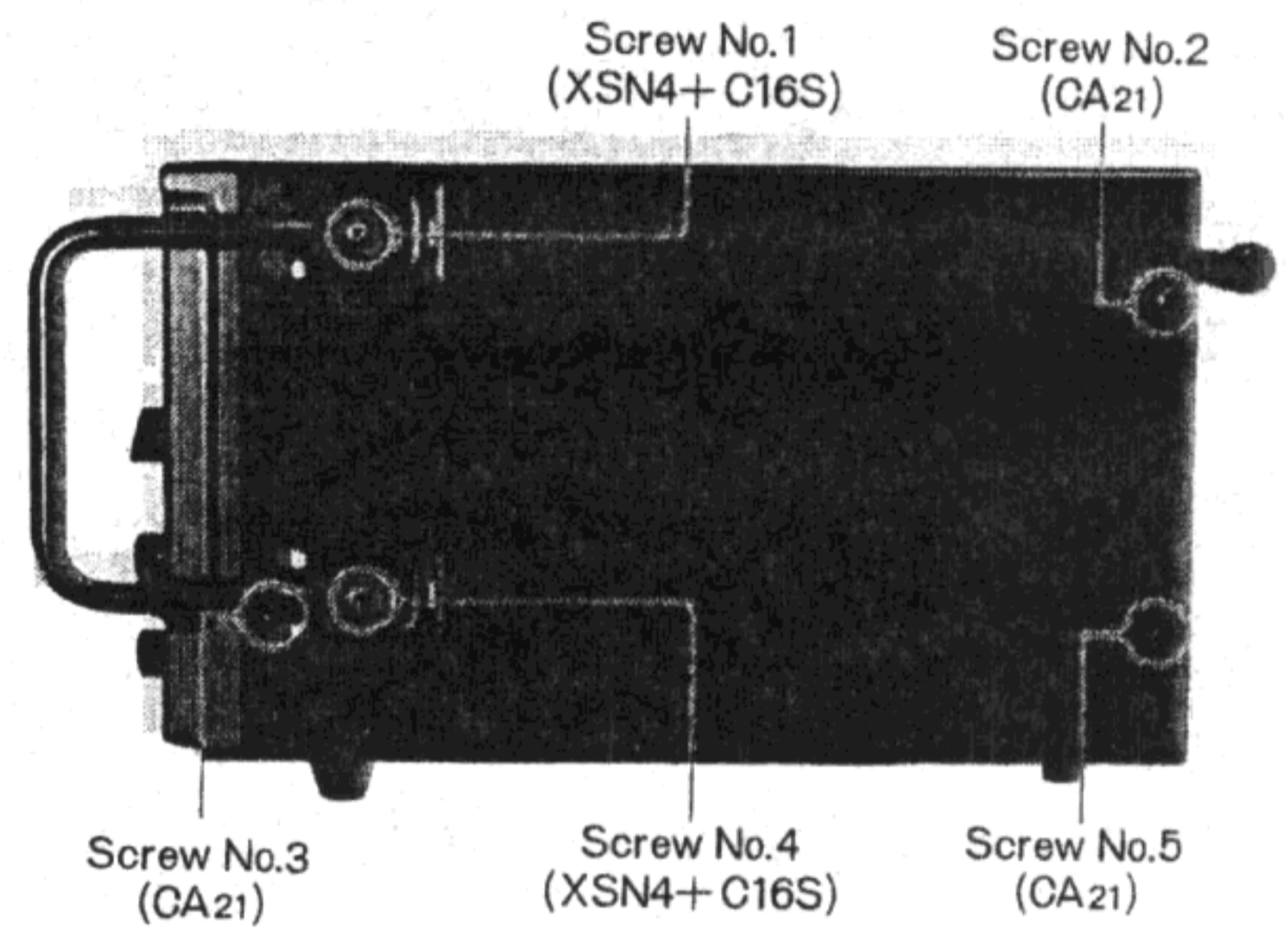


Fig. 2

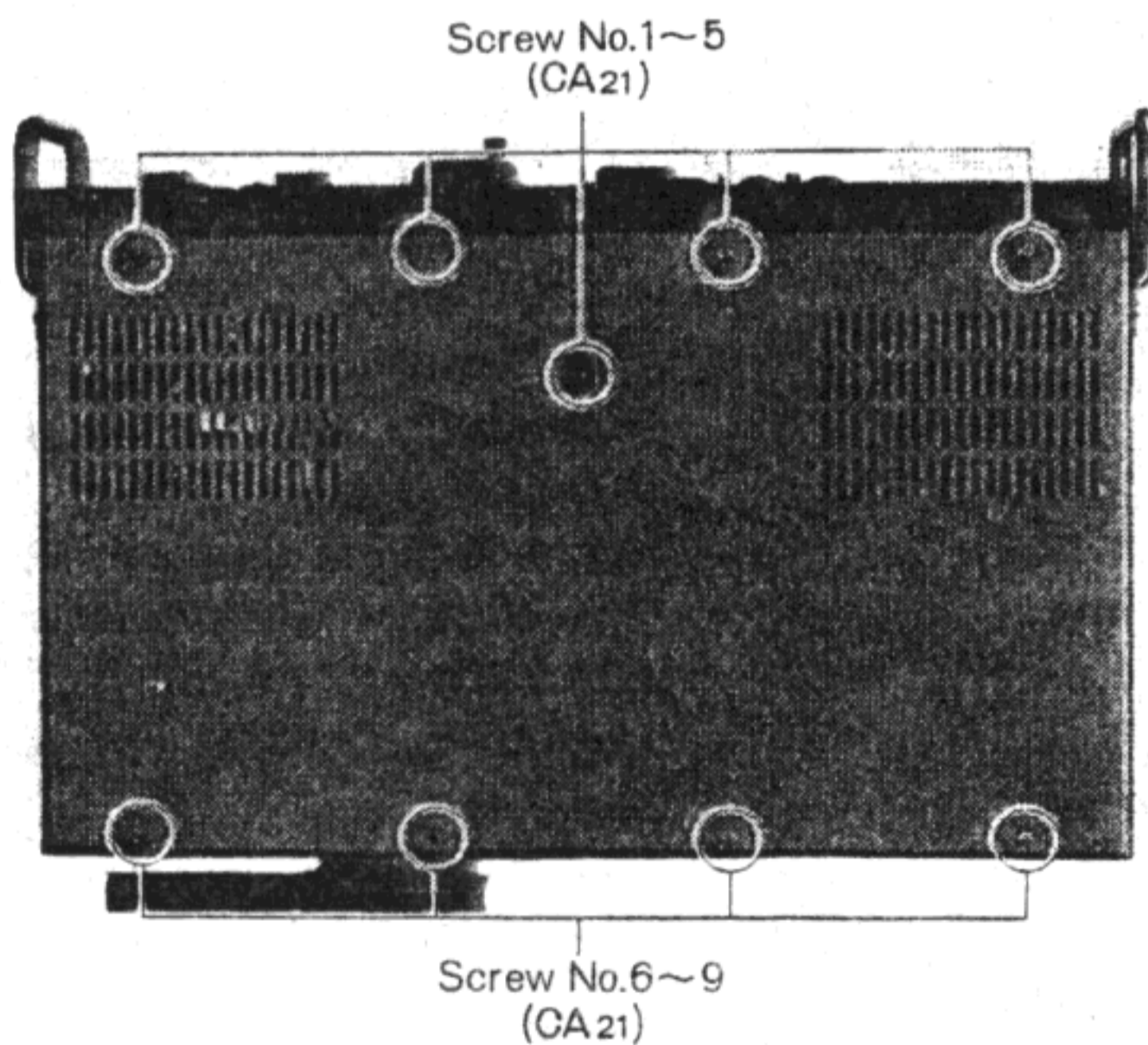


Fig. 5

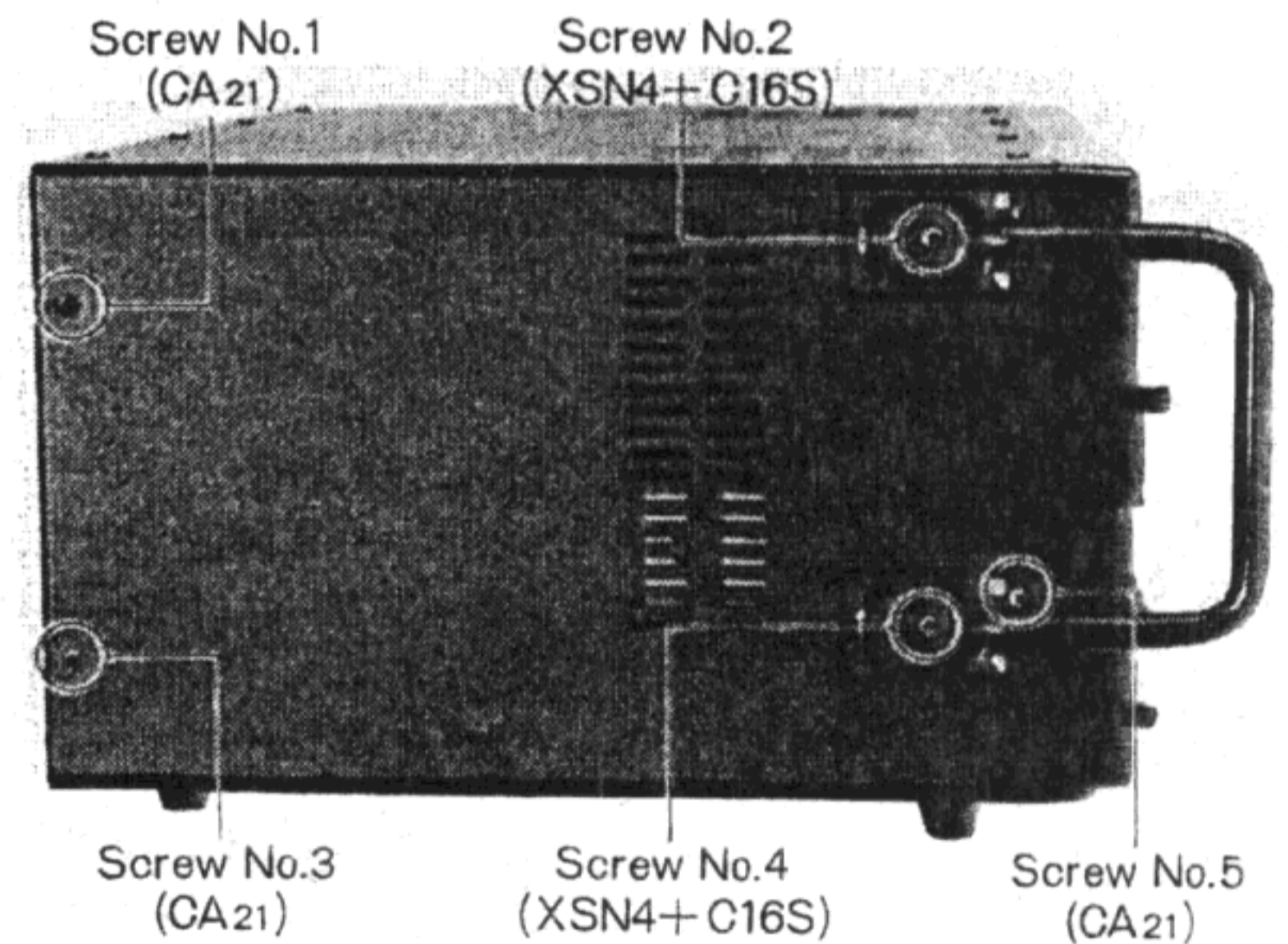


Fig. 3

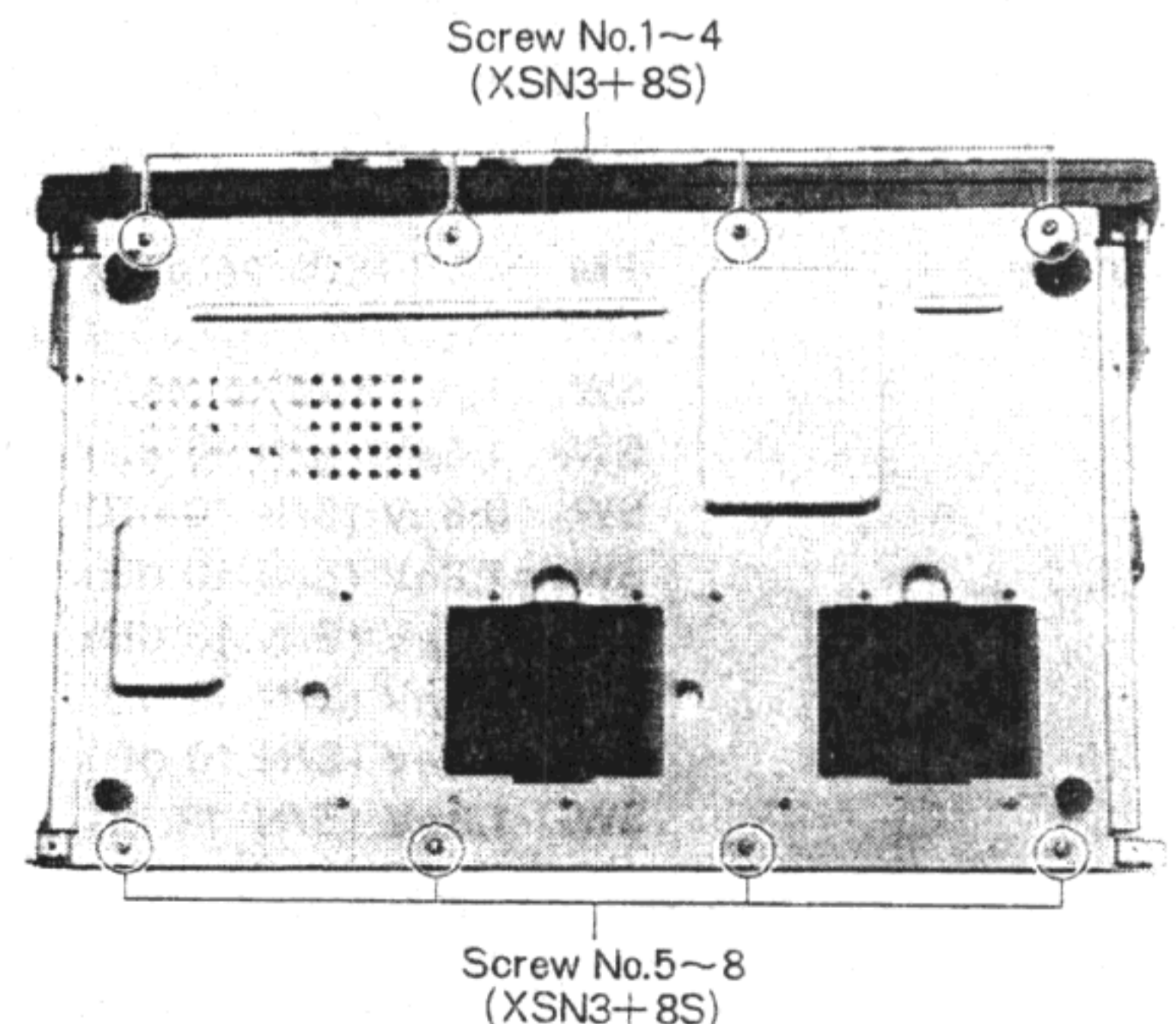


Fig. 6

## ■ TO REMOVE BOTTOM COVER

1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
2. Remove the eight (8) screws (nos. 1~8) for the bottom cover as shown in fig. 6.
3. Remove the bottom cover.
4. Remove the socket from power source PC board.
5. To reassemble, reverse the above procedure.

## ■ TO REMOVE FREQUENCY COUNTER

1. Remove the cabinet cover. (Refer to cabinet cover removal instruction.)
2. Remove the socket from PC board.
3. Remove the three (3) screws (nos. 1~3) for the frequency counter, as shown in fig. 7.
4. Remove the frequency counter.
5. To reassemble, reverse the above procedure.

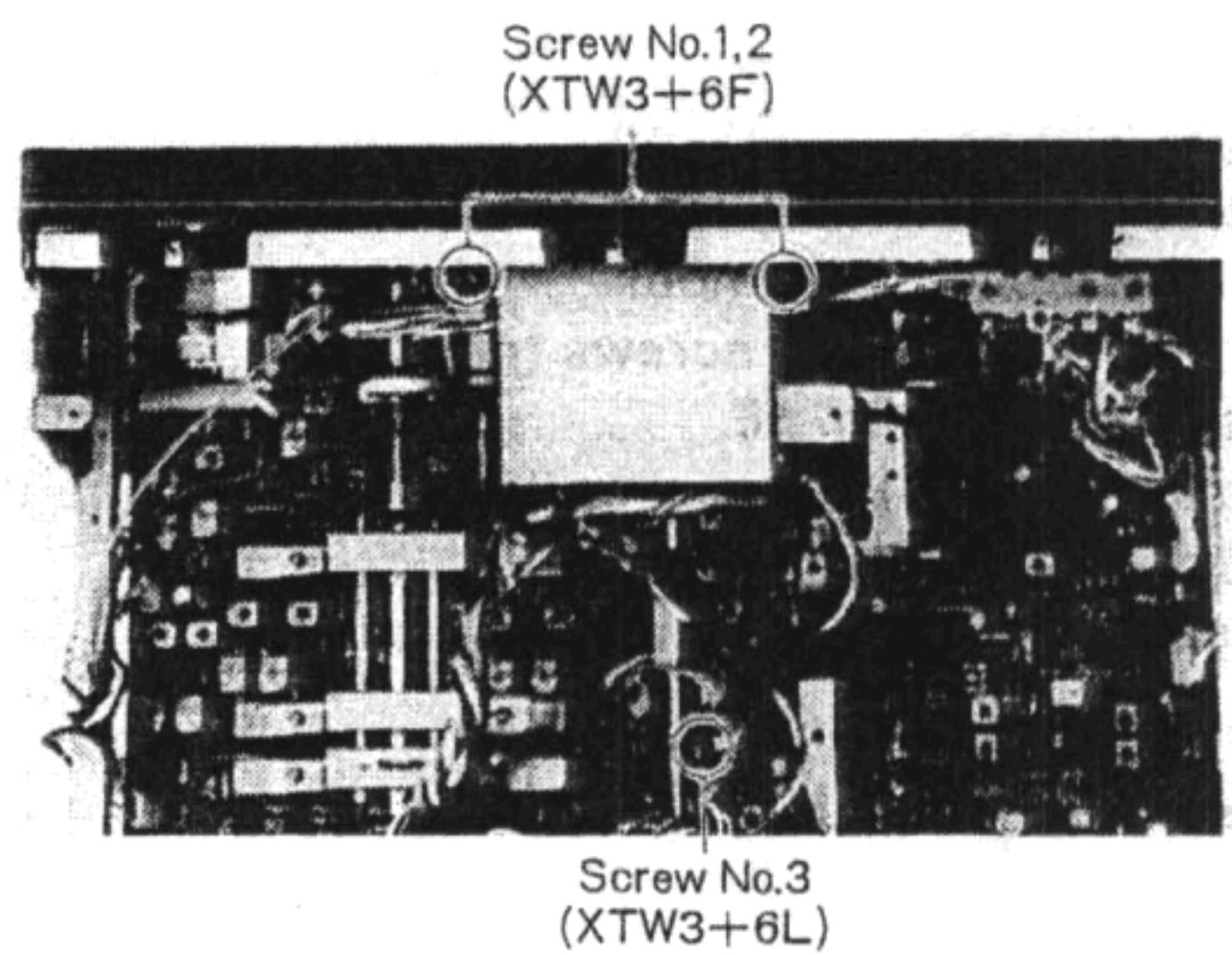


Fig. 7

## ■ TO REMOVE PC BOARD (Frequency Counter)

1. Remove the frequency counter.
2. Remove the two (2) screws (nos. 1 & 2) for the shield cover, as shown in fig. 8.
3. Remove the two (2) screws (nos. 1 & 2) for the PC board, as shown in fig. 9.
4. Remove the PC board.
5. To reassemble, reverse the above procedure.

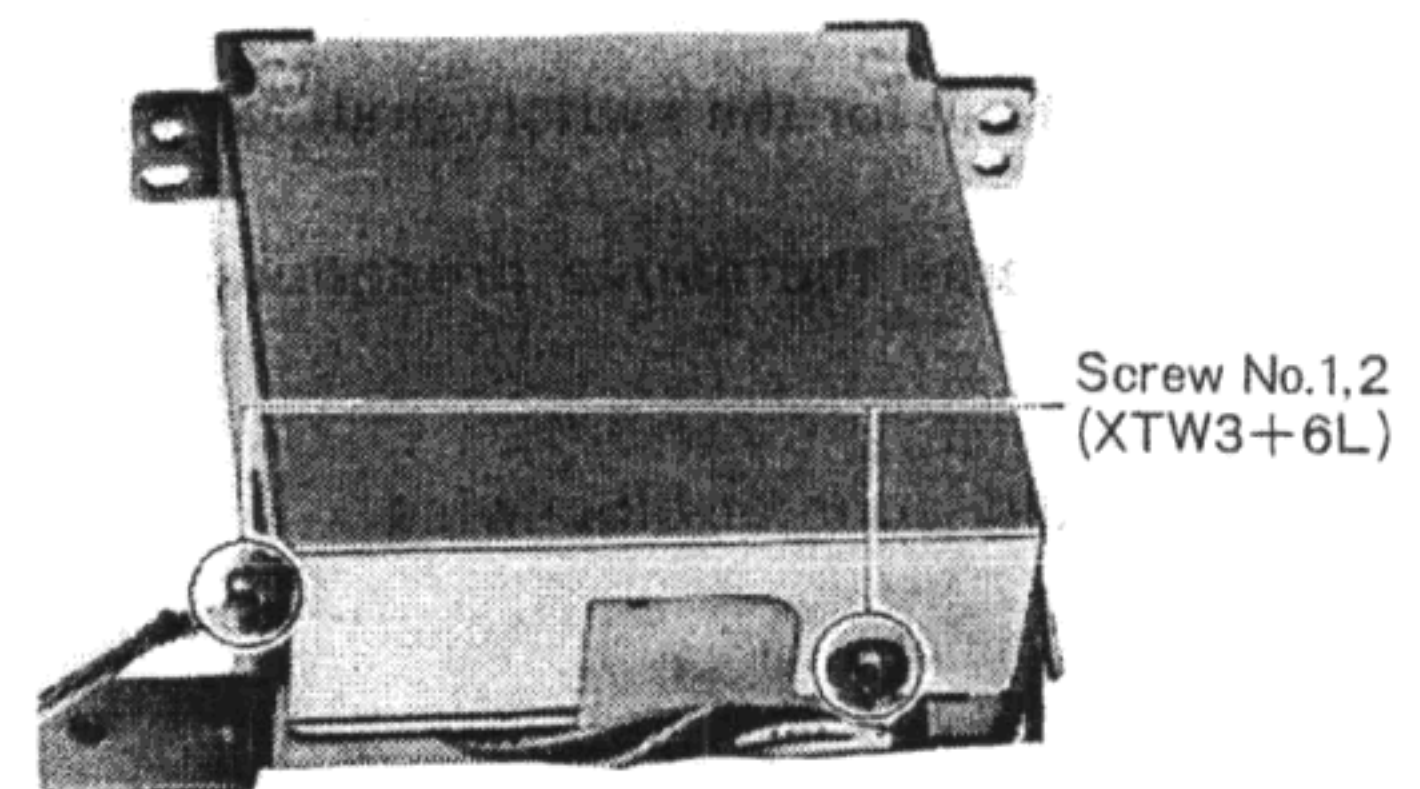


Fig. 8

## ■ TO REMOVE PC BOARD (VFO Circuit)

1. Remove the bottom cover. (Refer to bottom cover removal instruction.)
2. Loosen the two (2) screws (nos. 1 & 2) for the tuning capacitor shaft, as shown in fig. 10.
3. Remove the one (1) screw for the PC board, as shown in fig. 11.
4. Remove the three (3) screws (nos. 1~3) for the PC board, as shown in fig. 12.
5. To remove PC board completely unsolder lead wires from the other PC board.
6. To reassemble, reverse the above procedure and read the following notes.

### Notes:

1. Set tuning capacitor to maximum capacity.
2. Turn tuning shaft fully counter-clockwise.

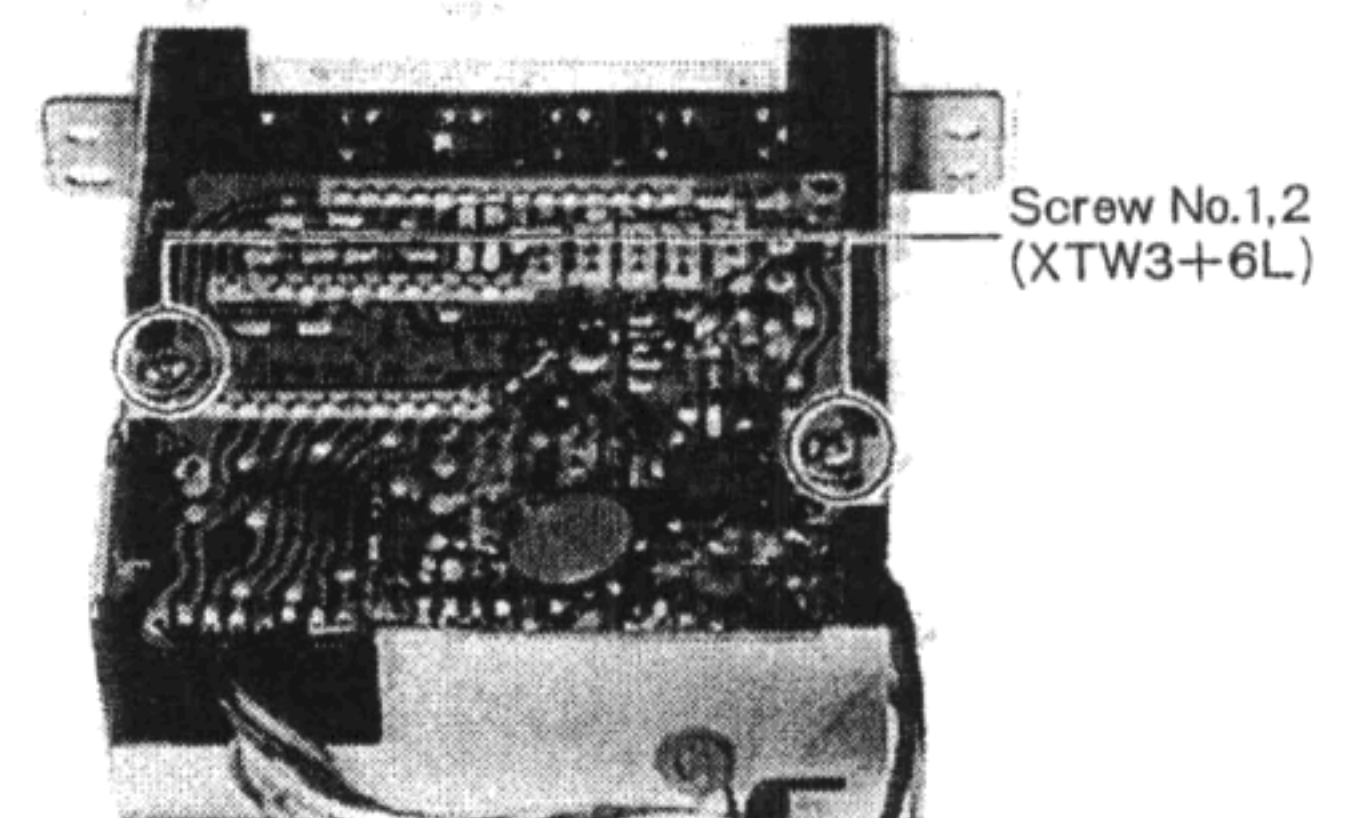


Fig. 9

## ■ TO REMOVE FERRITE ANTENNA

1. Remove the bottom cover. (Refer to the bottom cover removal instruction.)
2. Unsolder lead wires from PC board.
3. Push the catches in the direction of arrows, as shown in fig. 13 and remove the holder.
4. Push the holder in the direction of arrows ① and ② and open the holder in the direction of arrow ③ and ④, as shown in fig. 14.
5. Remove the ferrite antenna.
6. To reassemble, reverse the above procedure and read the following note.

### Note:

1. Insert the lead wires in the slit of holder, as shown in fig. 15.

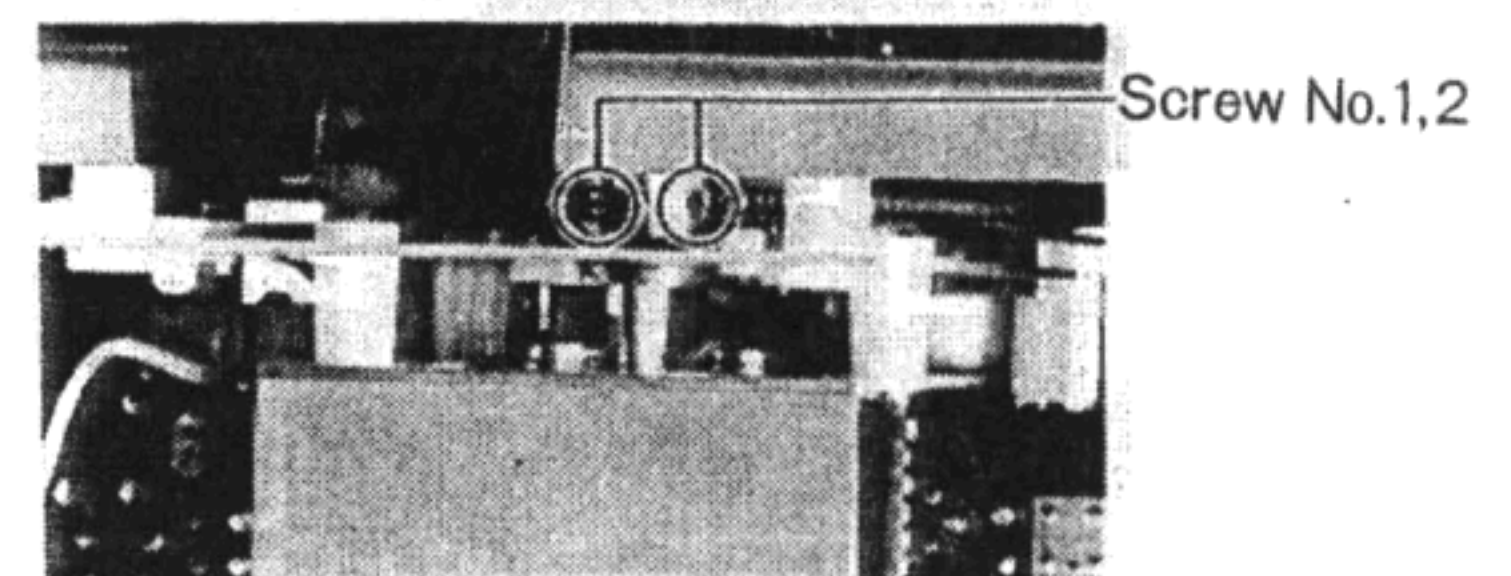


Fig. 10

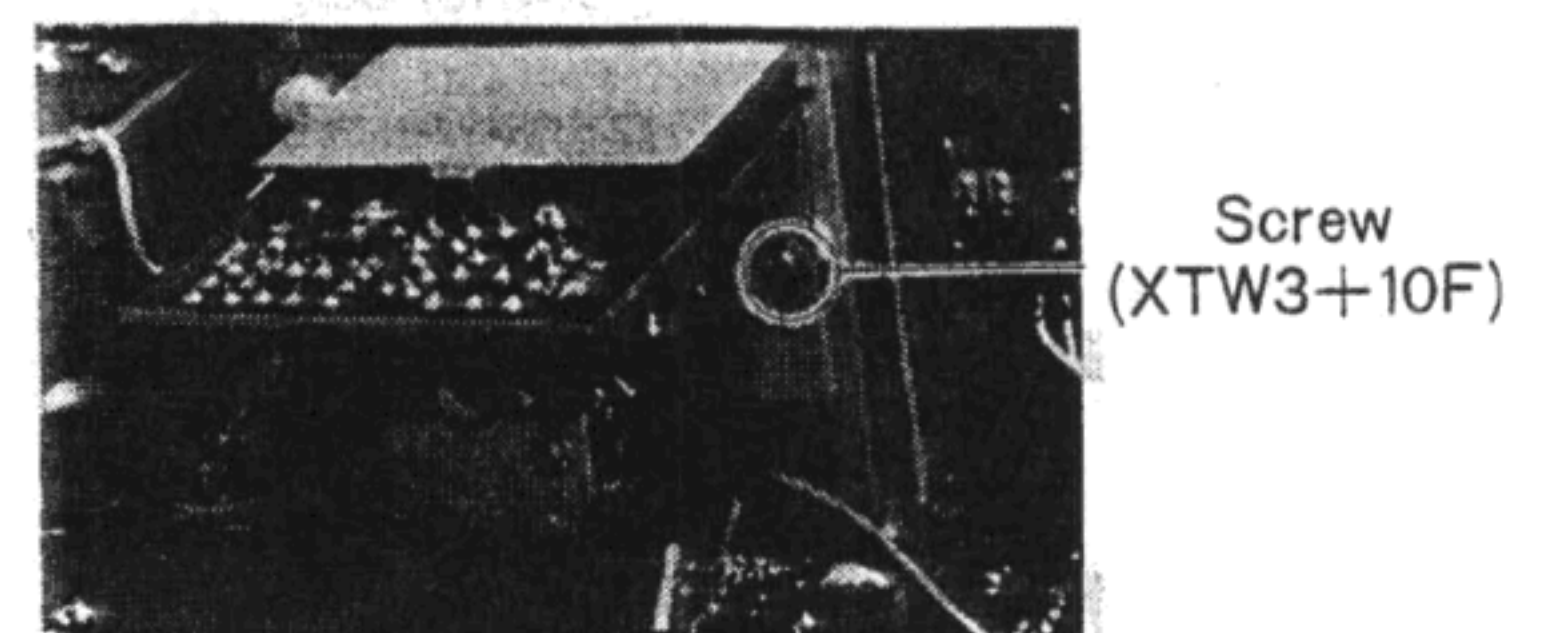


Fig. 11

## ■ TO REMOVE FRONT PANEL

1. Remove the bottom cover. (Refer to the bottom cover removal instruction.)
2. Pull out sockets from speaker.
3. Pull out socket from PC board.
4. Remove the eleven (11) knobs.
5. Remove the three (3) red screws (nos. 1~3) for the front panel, as shown in fig. 16.
6. Remove the three (3) red screws (nos. 1~3) for the front panel, as shown in fig. 17.
7. To reassemble, reverse the above procedure.

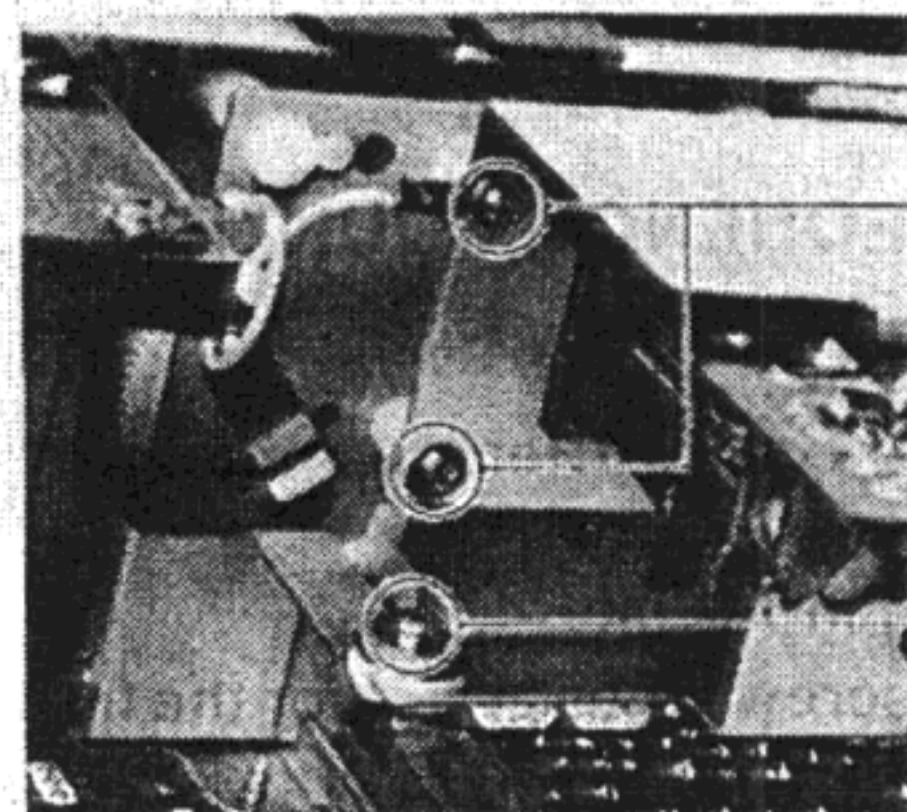


Fig. 12

## ■ TO REMOVE BAND SWITCH SHAFT (SW<sub>2</sub> ~ 8, SW<sub>1</sub>, MW, FM)

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Set band switch to "SW<sub>2</sub>~8" position.
3. Remove the switch wire in the direction of arrow, as shown in fig. 18.
4. Remove the one (1) nut for the switch shaft, as shown in fig. 19.
5. To reassemble, reverse the above procedure and read the following note.

Note:

1. Turn switch shaft fully counter-clockwise.

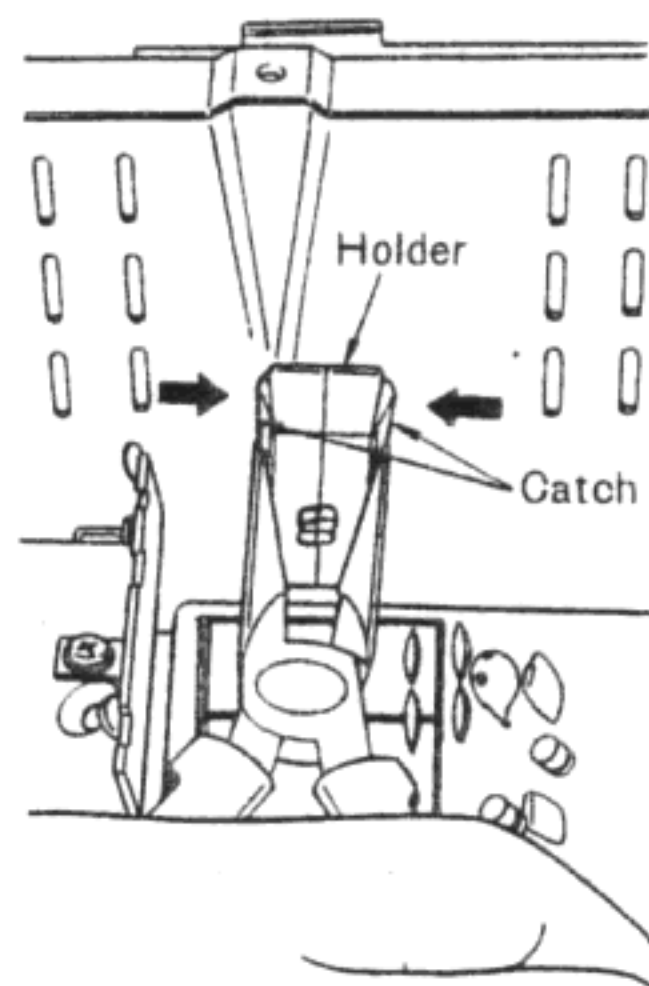


Fig. 13

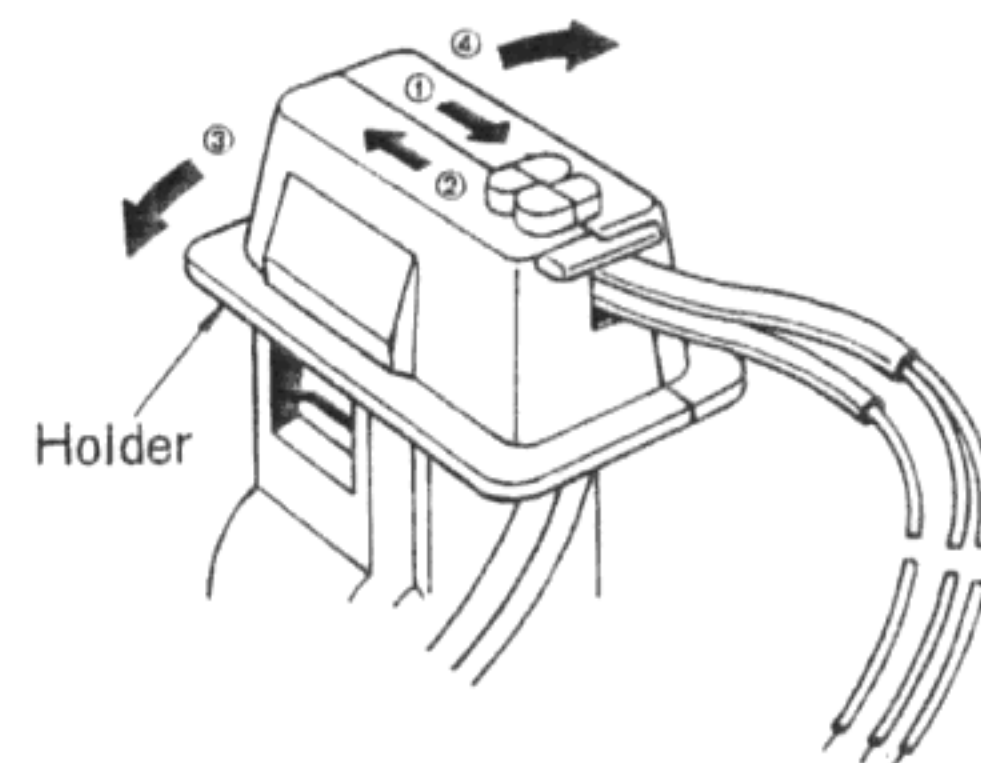


Fig. 14

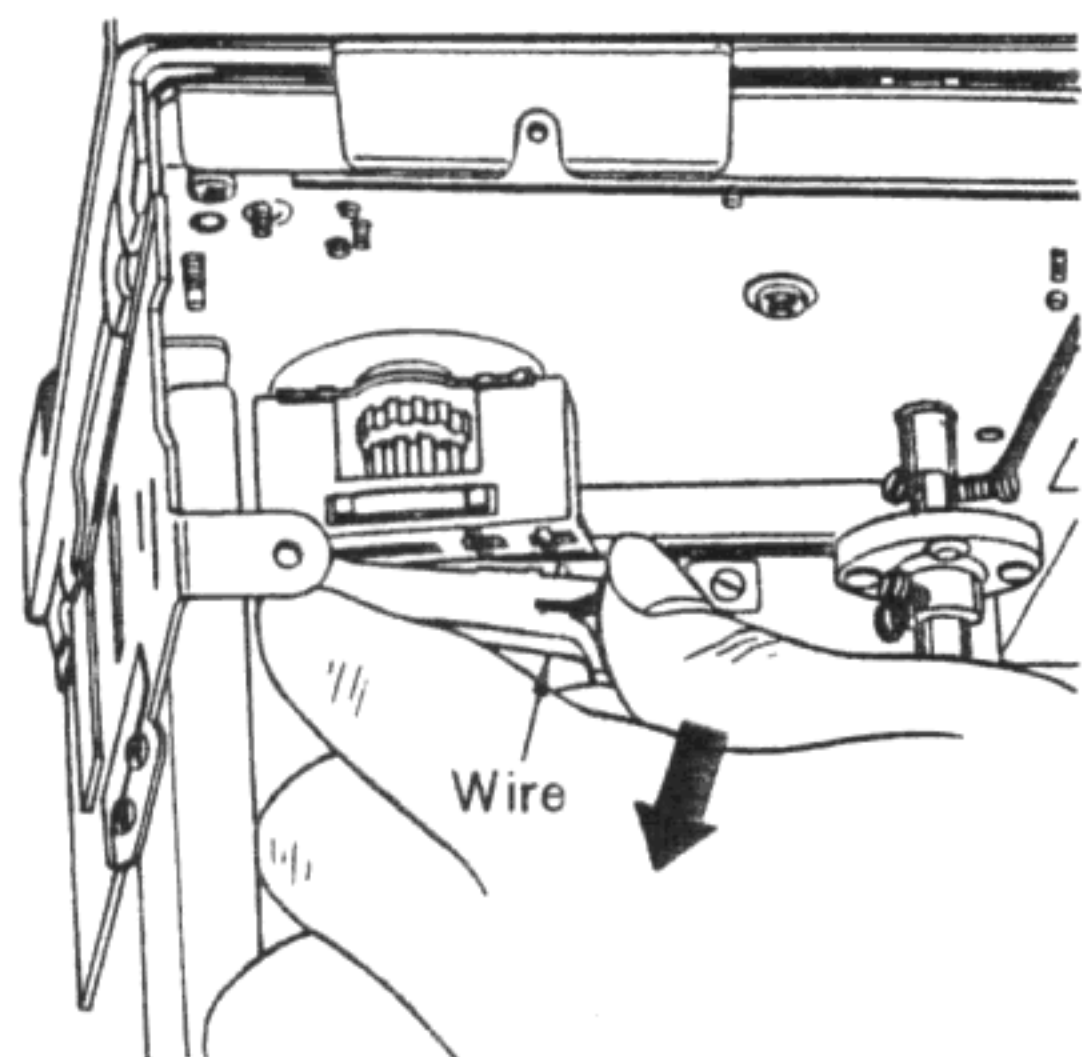


Fig. 18

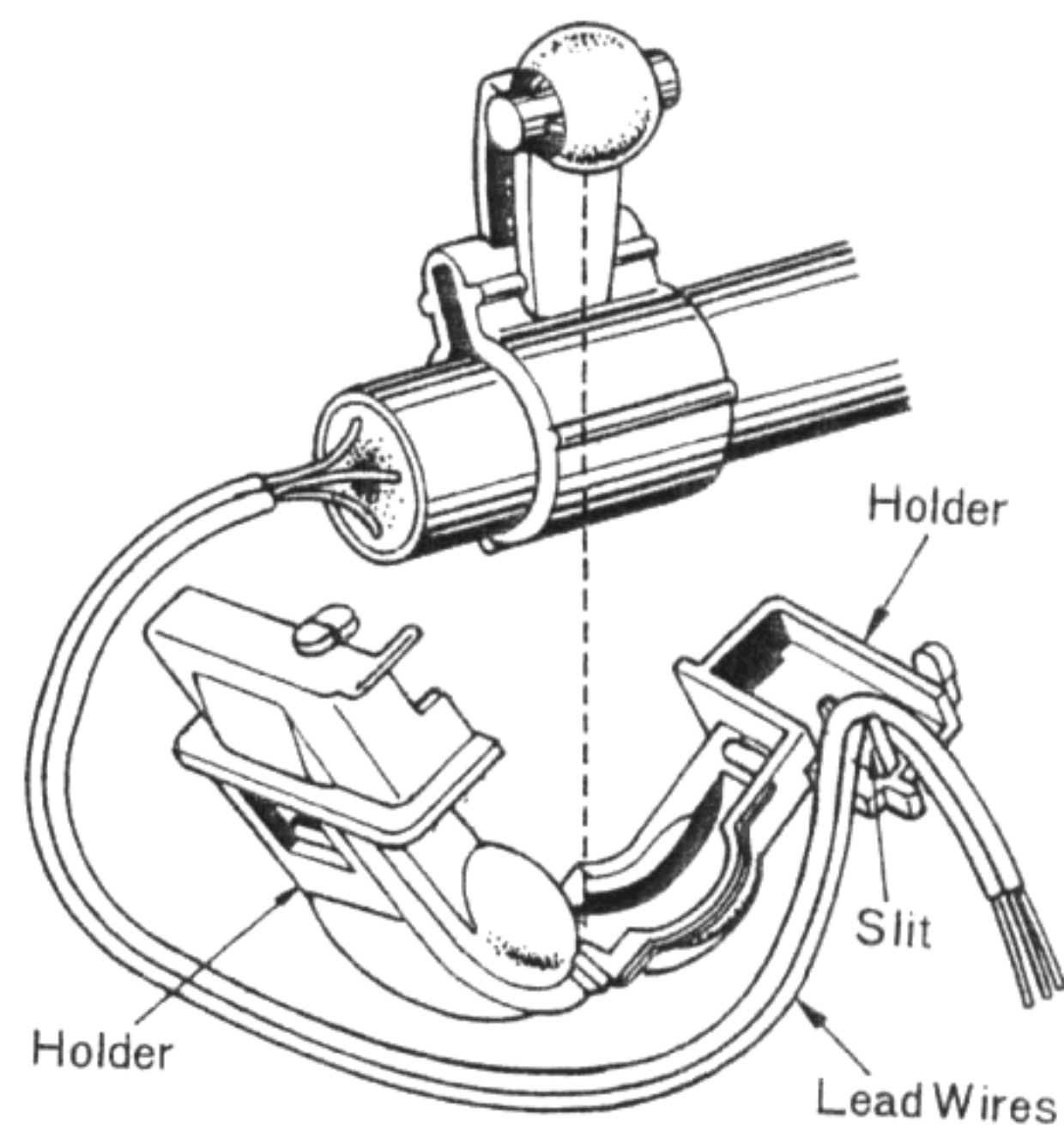


Fig. 15

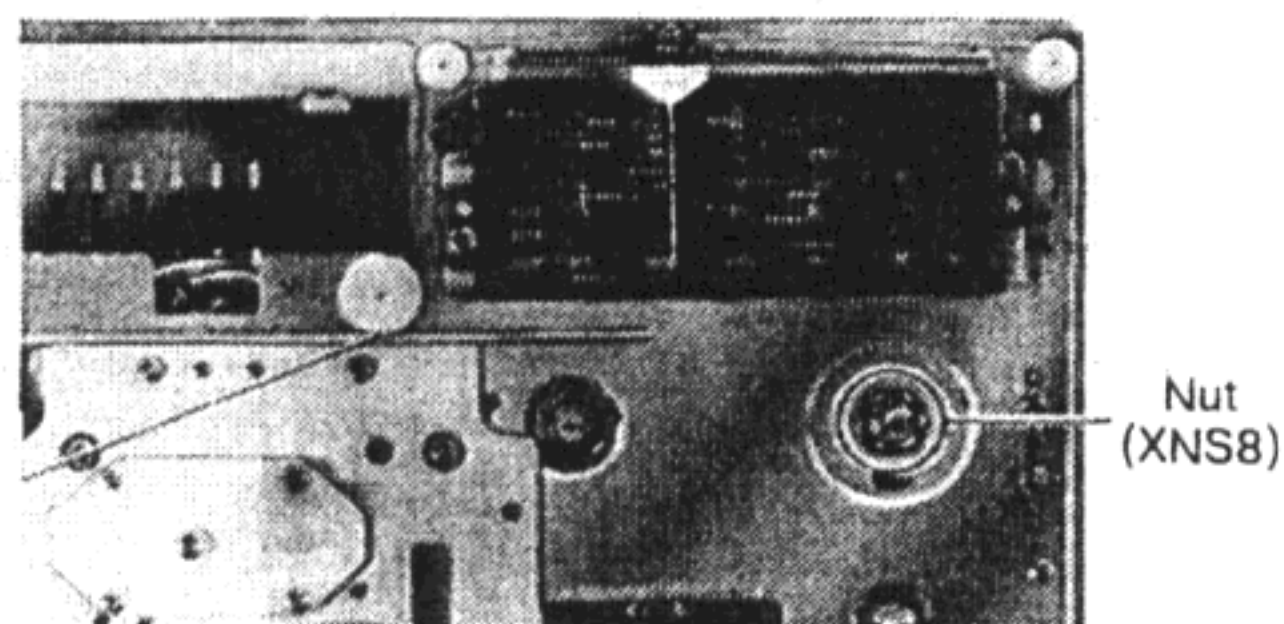


Fig. 19

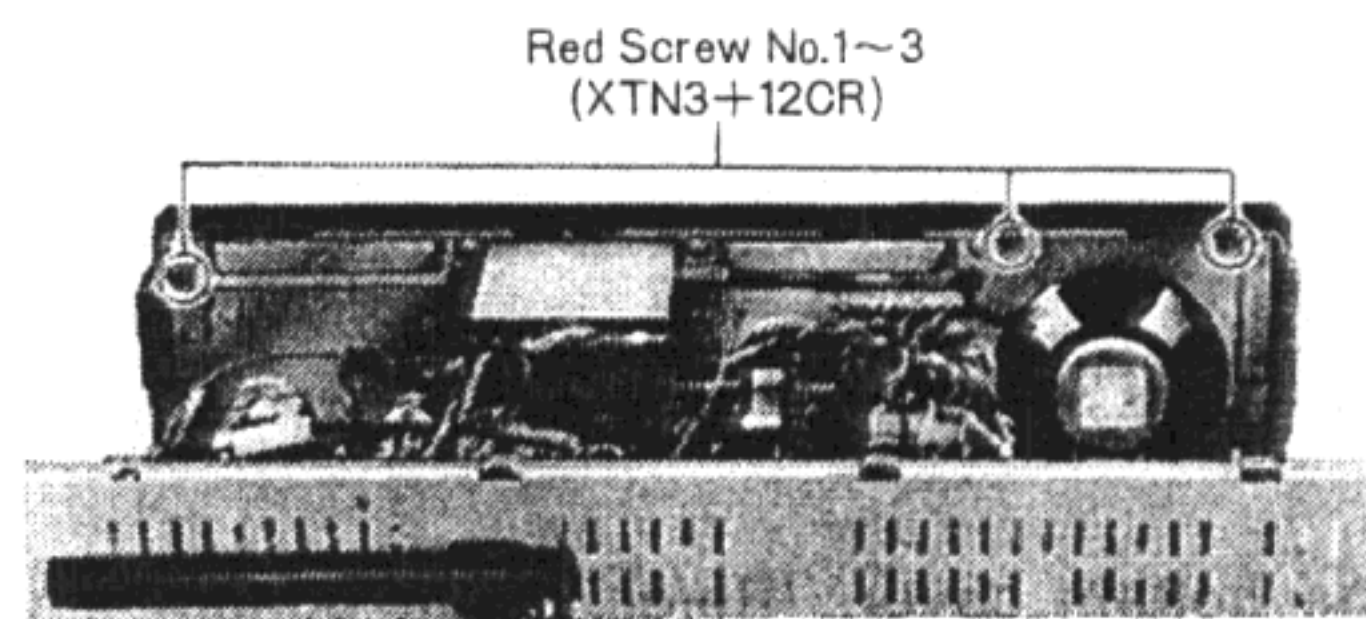


Fig. 16

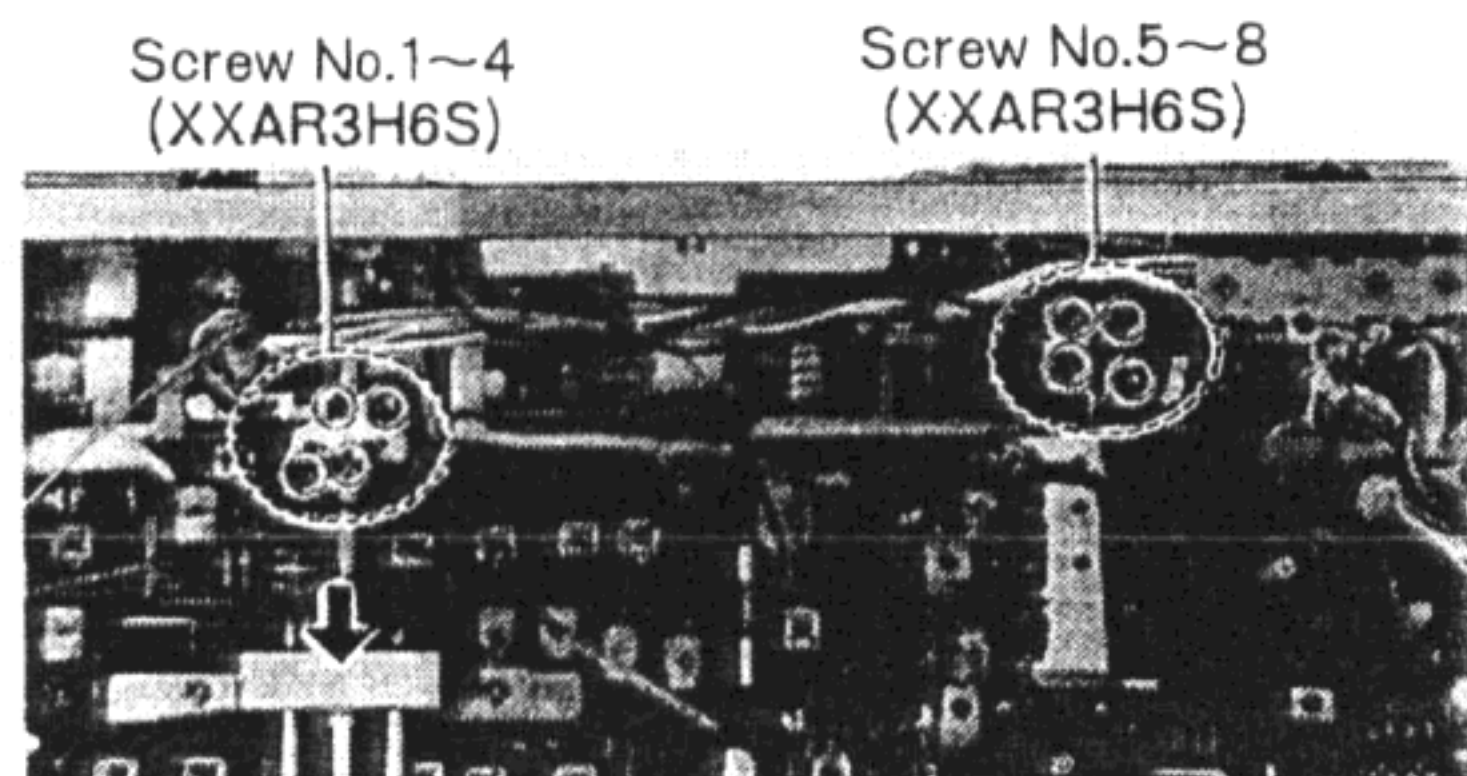


Fig. 20

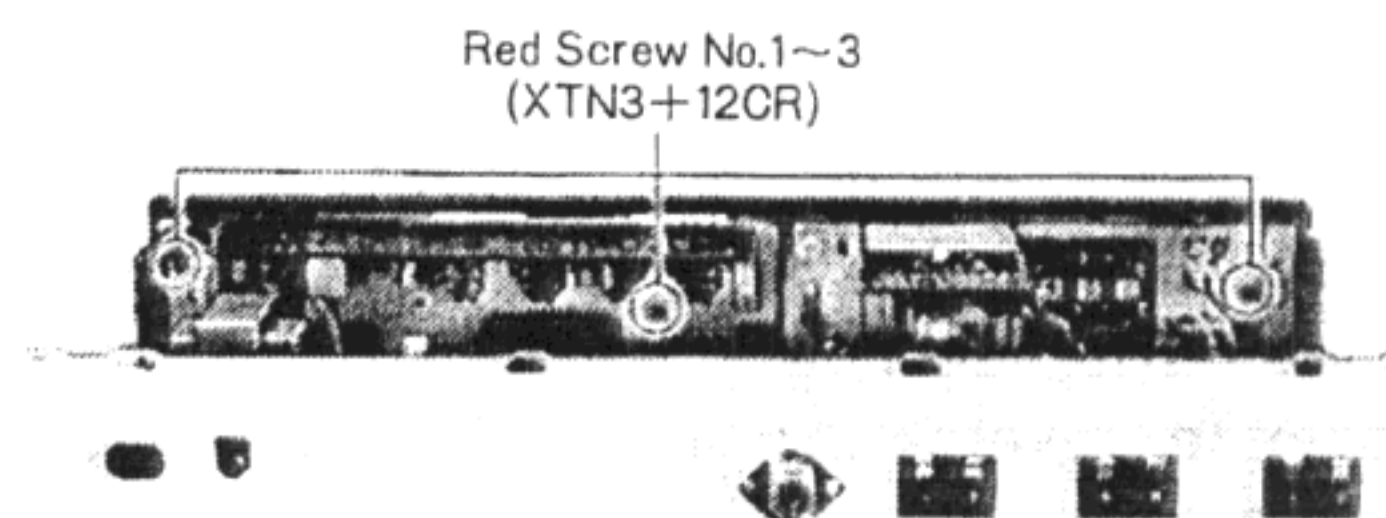


Fig. 17

## ■ TO REMOVE BAND SWITCH SHAFT (SW<sub>2</sub> ~ 8)

1. Remove the frequency counter. (Refer to the frequency counter removal instruction.)
2. Loosen the four (4) screws (nos. 1~4) for the joint, as shown in fig. 20.
3. Slide the joint in the direction of arrow, as shown in fig. 20.
4. Remove the six (6) screws (nos. 1~6) for the shaft, as shown in fig. 21.
5. Remove the shaft.
6. To reassemble, reverse the above procedure and read the following notes.

### Notes:

1. Turn switch shaft fully counter-clockwise.
2. Set the switch lever at the position, as shown in fig. 23.

## ■ TO REMOVE PC BOARD (FM, MW RF Circuit)

1. Remove the frequency counter. (Refer to the frequency counter removal instruction.)
2. Remove the front panel. (Refer to the front panel removal instruction.)
3. Remove the dial scale.
4. Remove the dial cord.
5. Turn dial drum fully counter-clockwise.
6. Loosen the four (4) screws (nos. 5~8) for the joint, as shown in fig. 20.
7. Remove the dial drum.
8. Set the band switch to "SW<sub>2</sub>~8" position.
9. Remove the switch wire in the direction of arrow, as shown in fig. 22.
10. Remove the six (6) screws (nos. 7~12) for the PC board, as shown in fig. 21.
11. Remove the PC board.
12. To reassemble, reverse the above procedure and read the following notes.

### Notes:

1. Set the tuning capacitor to maximum capacity.
2. Set the dial drum at the position, as shown in fig. 24.
3. Set the switch lever at the position, as shown in fig. 25.
4. Refer to dial cord installation (SW<sub>1</sub>/MW/FM).

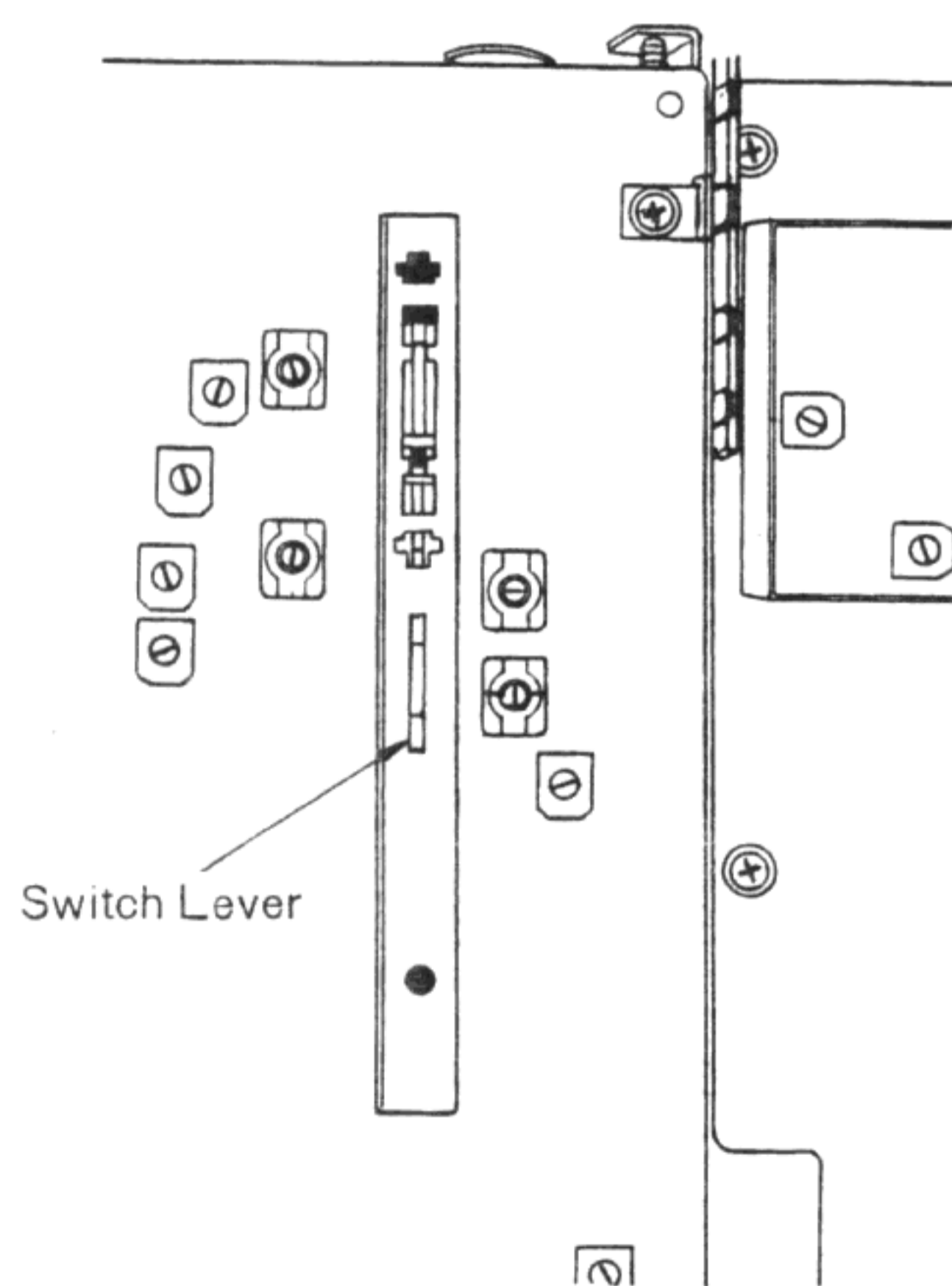


Fig. 25

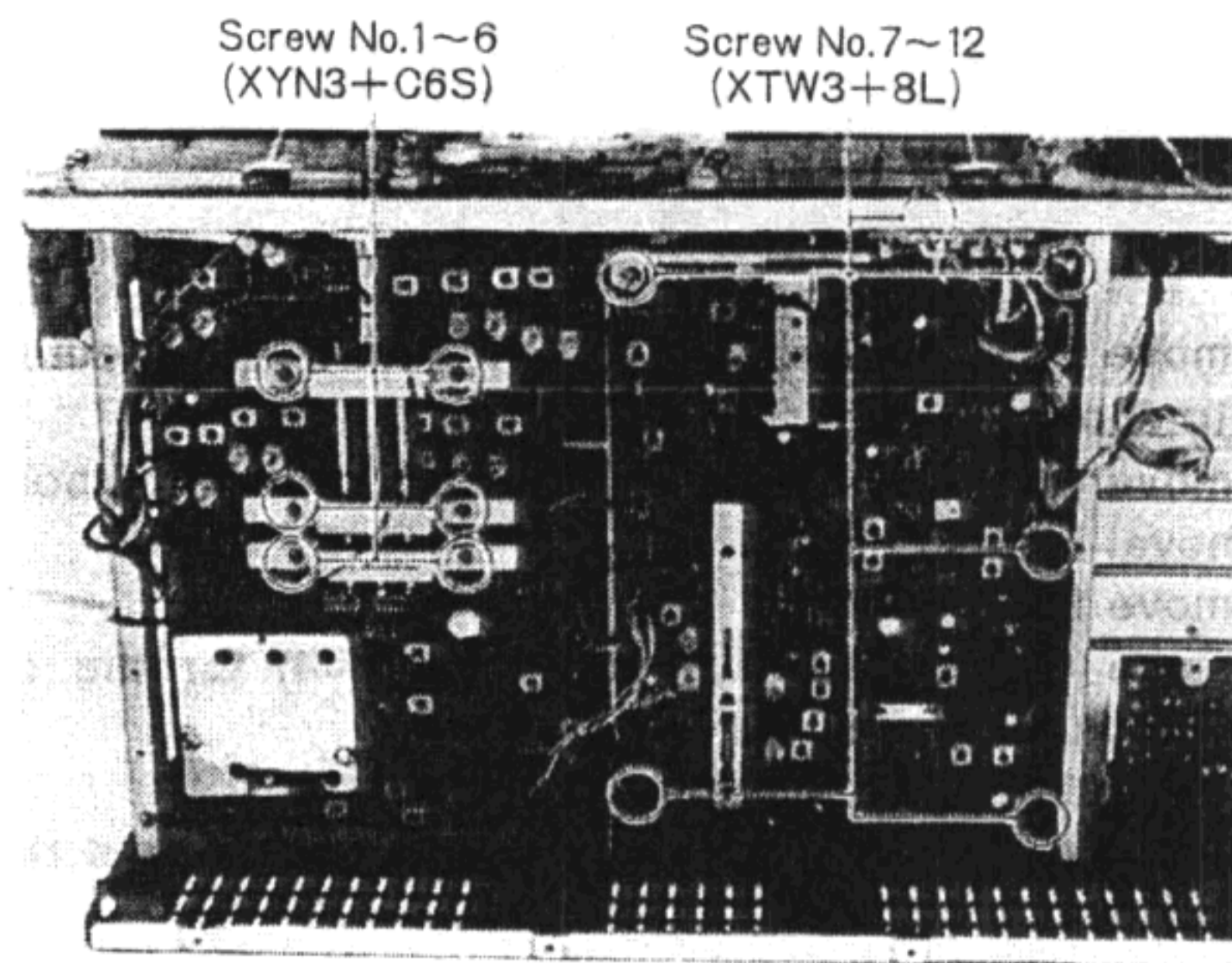


Fig. 21

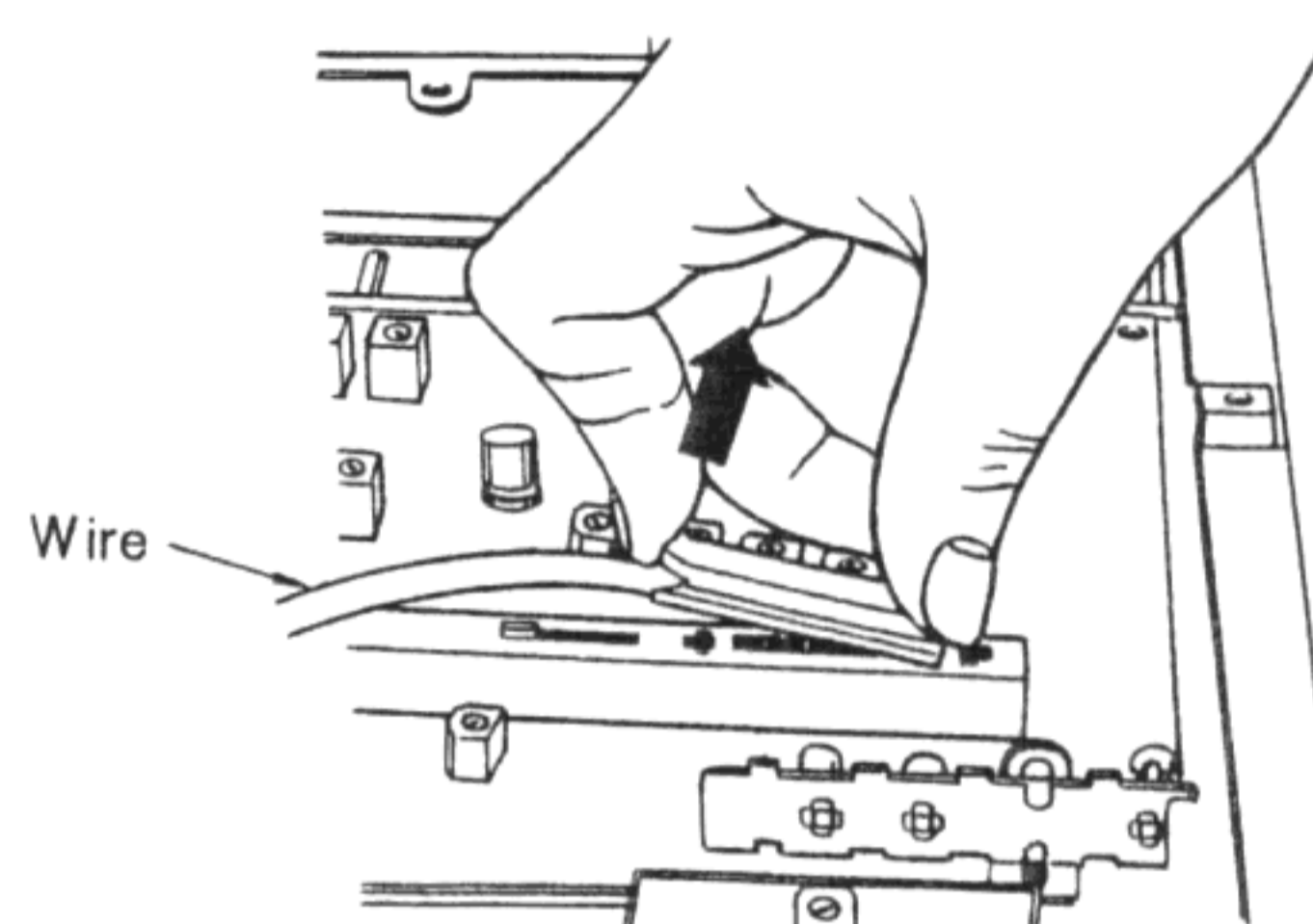


Fig. 22

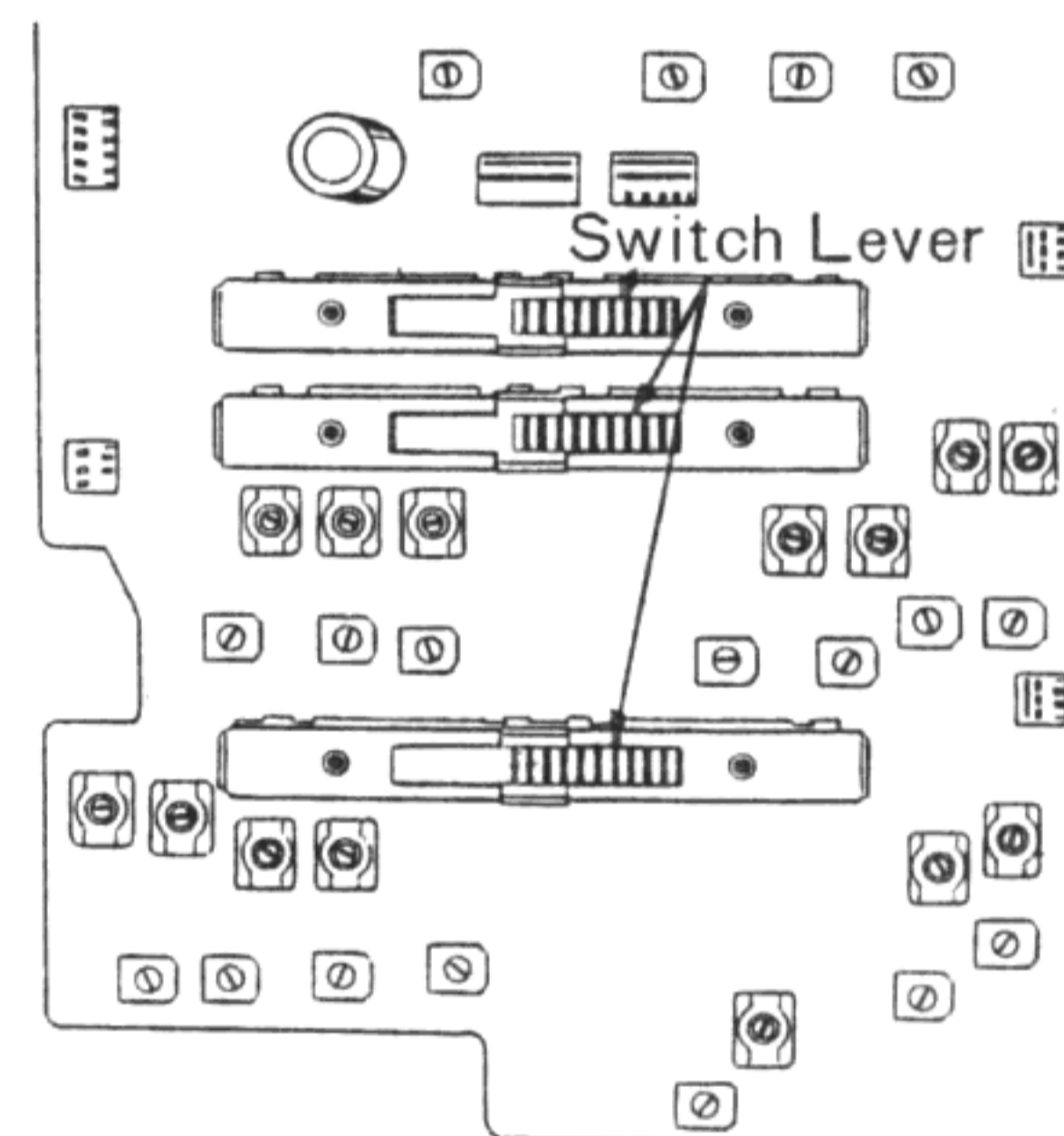


Fig. 23

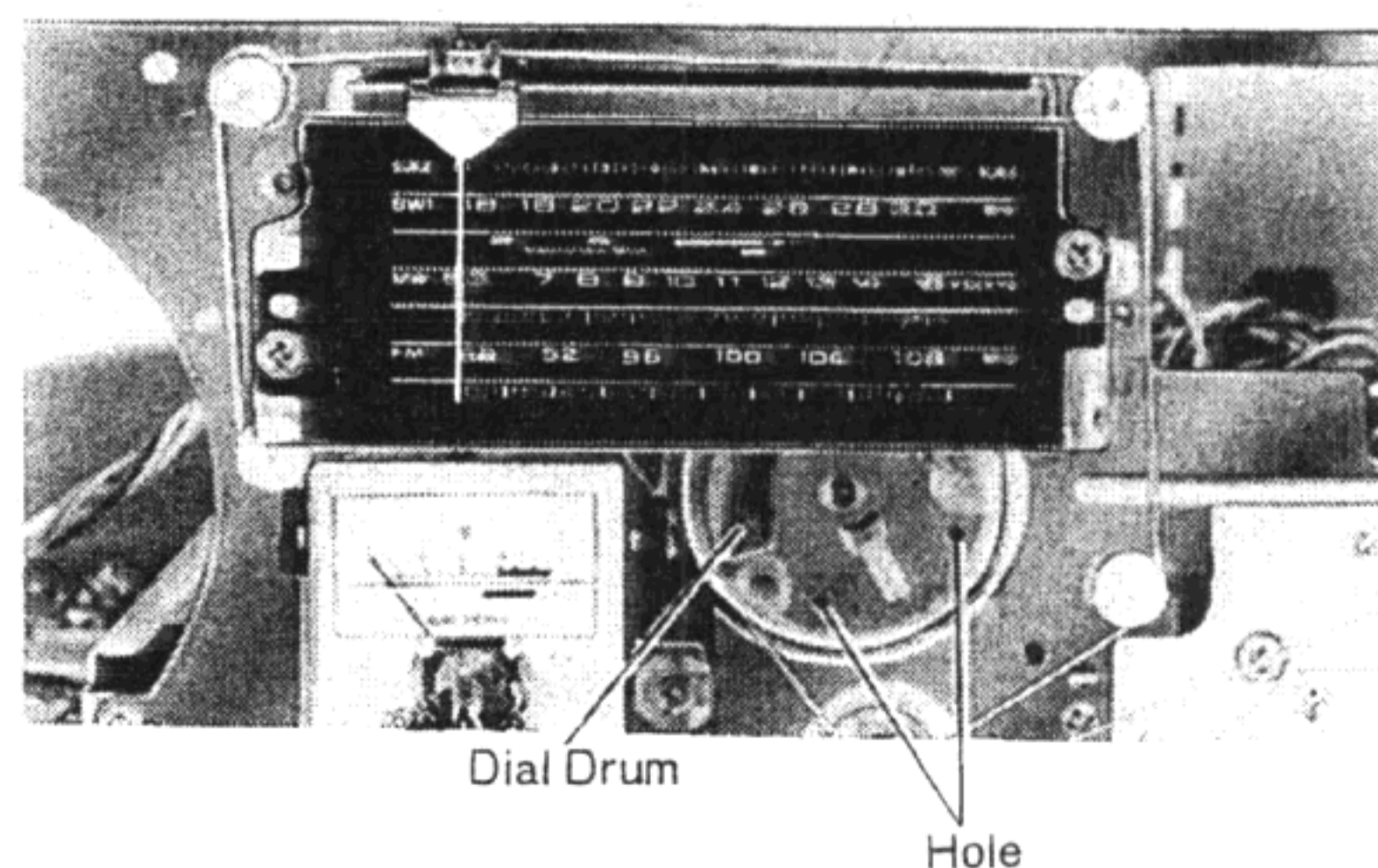


Fig. 24

## ■ TO REMOVE DIAL MECHANISM

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Remove the PC board (VFO circuit). (Refer to PC board removal instruction.)
3. Remove the dial cord.
4. Remove the four (4) screws (nos. 1~4) for the dial mechanism, as shown in fig. 26.
5. Remove the dial mechanism.
6. To reassemble, reverse the above procedure and read the following notes.

Note:

1. Refer to dial cord installation (SW<sub>2</sub>~<sub>8</sub>).

## ■ DIAL CORD INSTALLATION GUIDE

### ● SW<sub>1</sub> /MW/FM

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Remove the dial scale.
3. Turn the dial drum fully counter-clockwise.
4. Cord length is 90 cm (35 $\frac{7}{16}$ "').
5. Arrows (1~10) indicate correct order and direction of cord installation, as shown in fig. 27.
6. Cement cord ends.
7. Turn tuning shaft fully counter-clockwise.
8. Attach pointer to cord.
9. Set pointer to "0" point of dial scale.

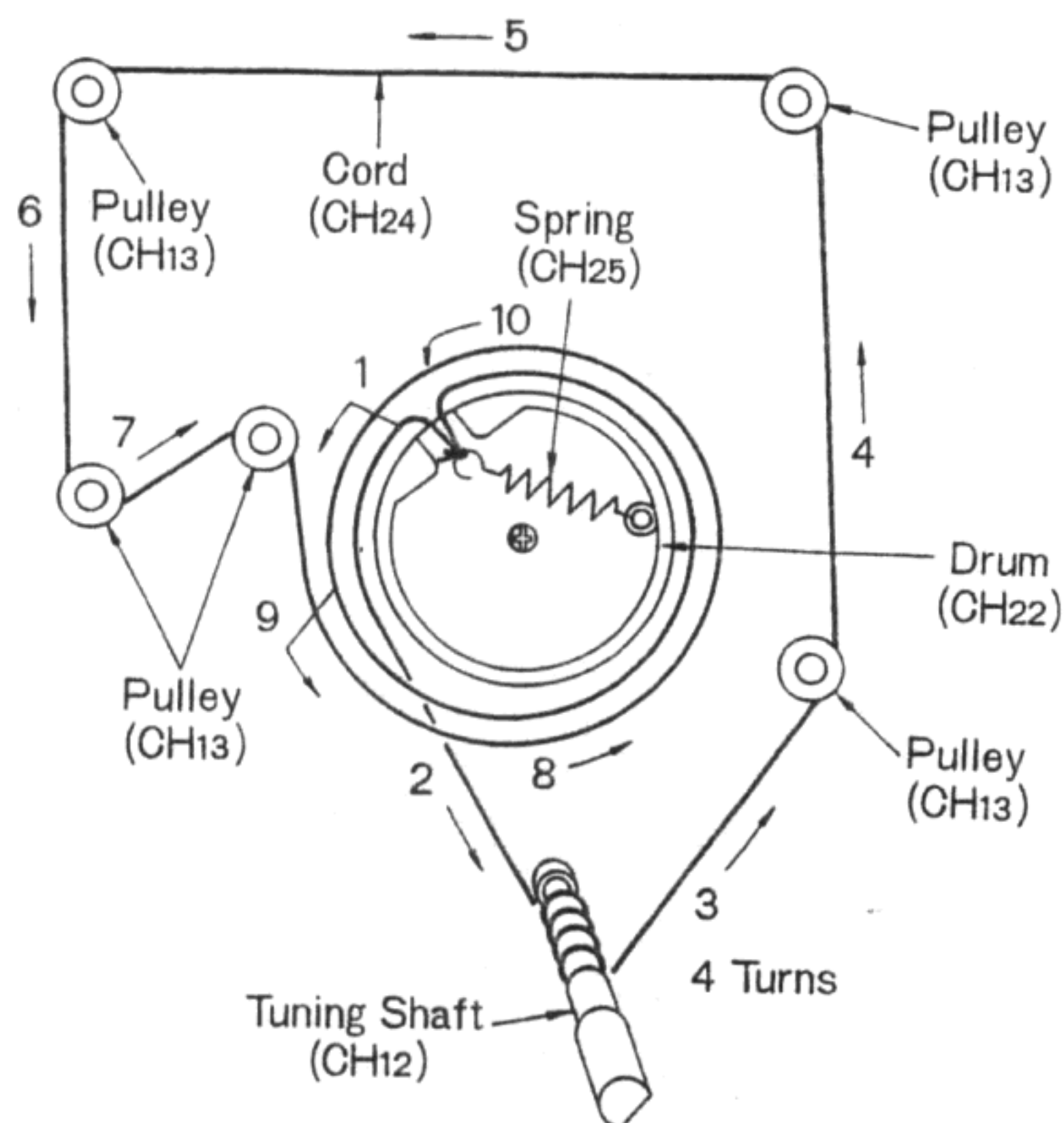


Fig. 27

### ● SW<sub>2</sub> ~SW<sub>8</sub>

1. Remove the front panel. (Refer to the front panel removal instruction.)
2. Turn tuning shaft fully clockwise.
3. Cord length is 115 cm (47 $\frac{1}{4}$ "').
4. Arrows (1~9) indicate correct order and direction of cord installation, as shown in fig. 28.
5. Turn tuning shaft fully counter-clockwise.
6. Attach pointer to cord.
7. Set pointer to start point of dial scale.

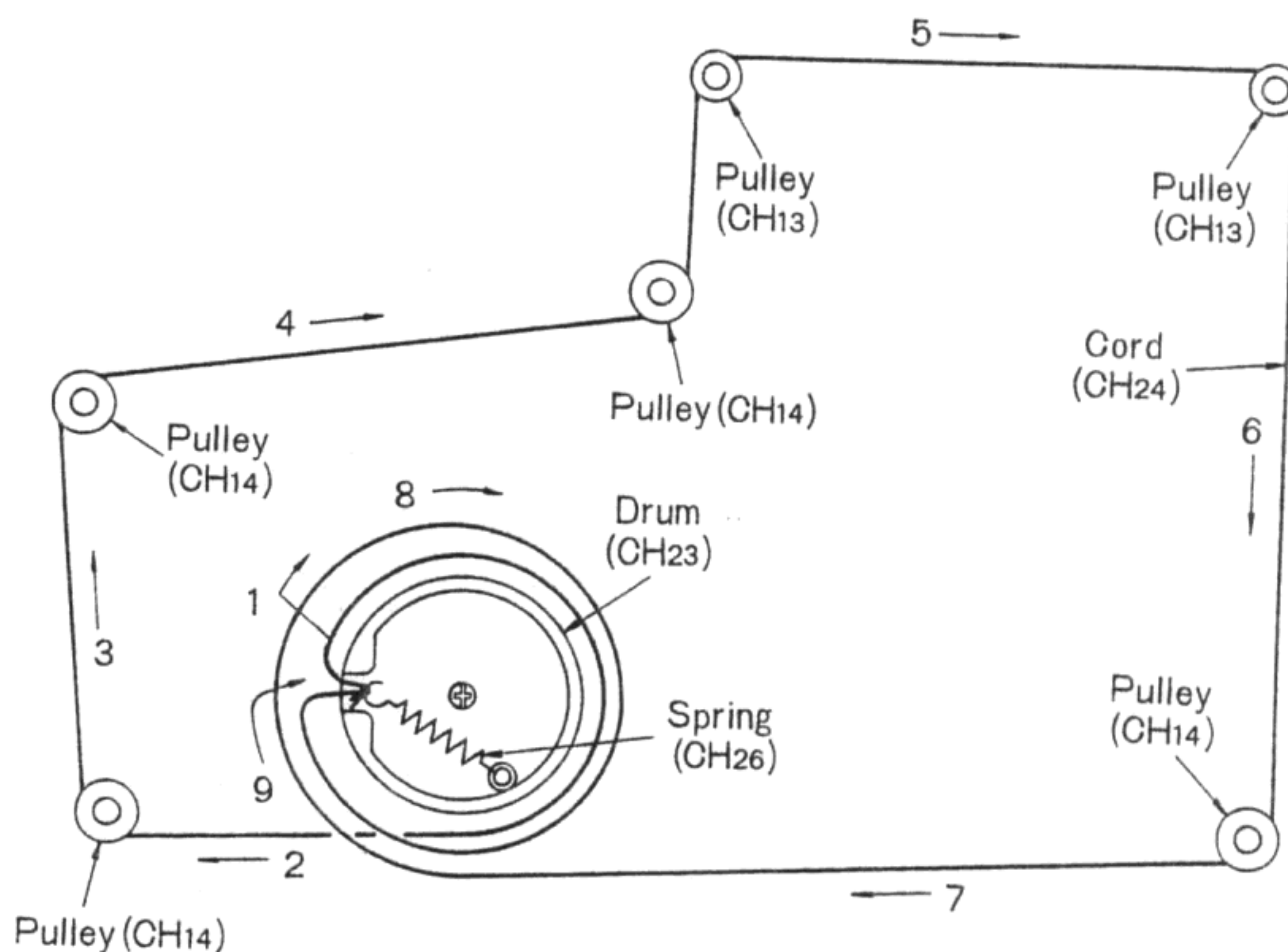
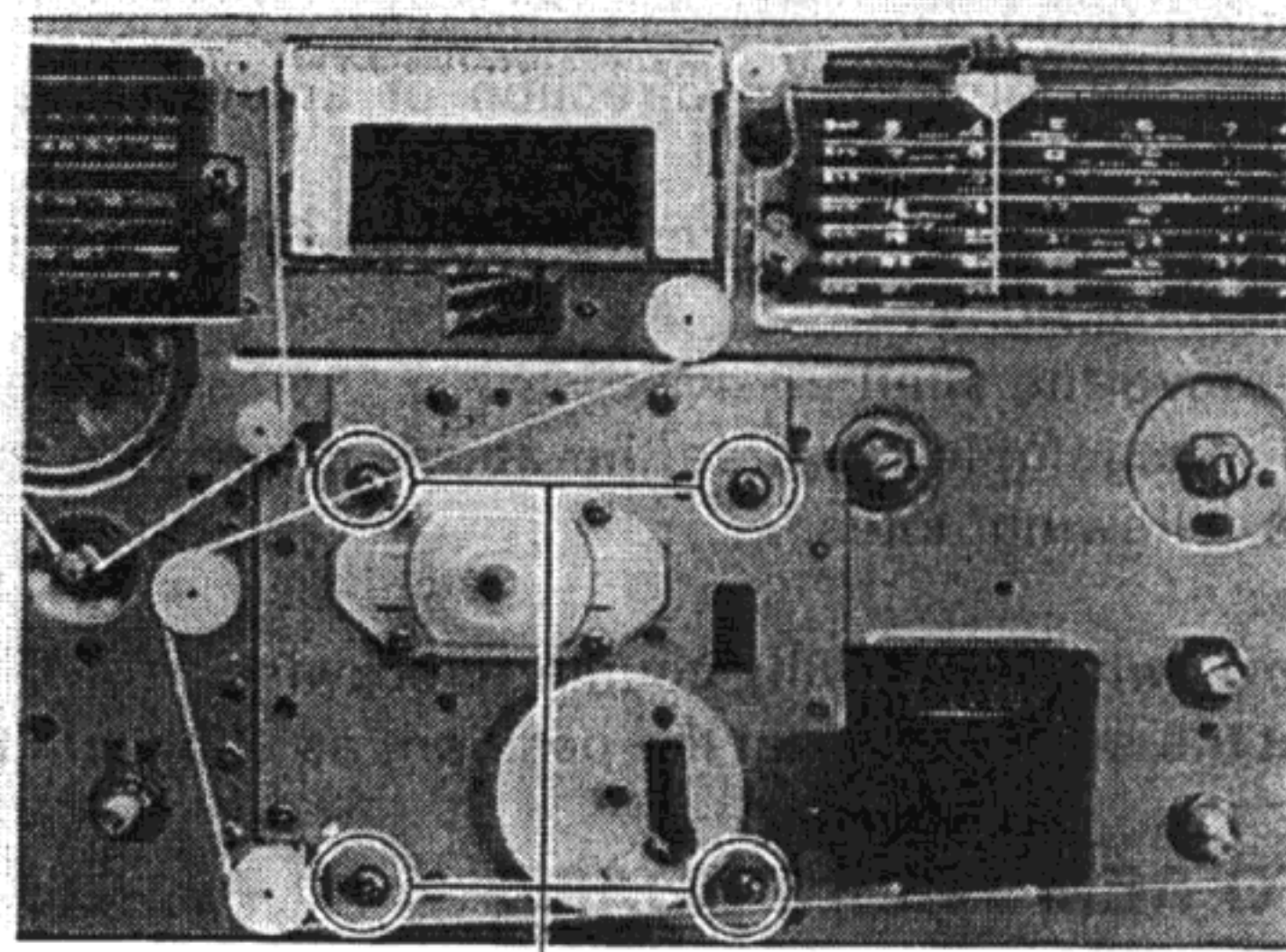


Fig. 28



Screw No.1~4  
(XYN3+C6S)

Fig. 26

## ■ HOW TO REPLACE CHIP

1. Remove solder for chip completely.
2. Remove chip by nippers, as shown in fig. 29.
3. Use tube for service parts as shown in fig. 30 and solder service parts according to following table. (please refer to Circuit Board Wiring View for the value of resistor and capacitor).

Color	Original Parts Name	Service Parts Name
Black	Chip Resistor	Carbon Resistor
Brown	Chip Capacitor	Ceramic Capacitor
Blue	Chip Jumper	Lead Wire

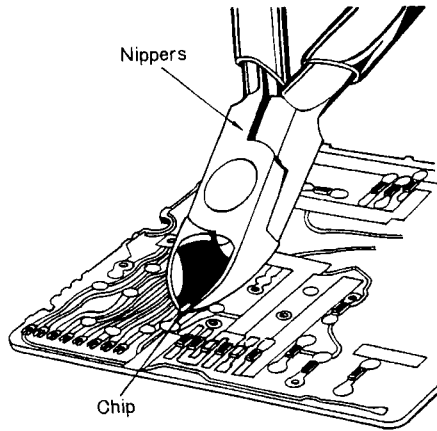


Fig. 29

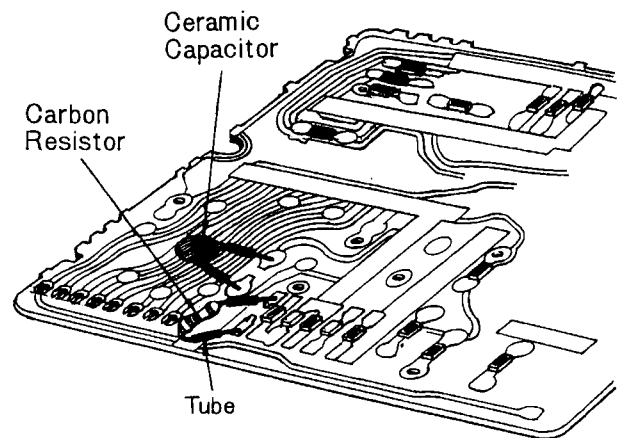


Fig. 30

## ■ CABINET PARTS LOCATION

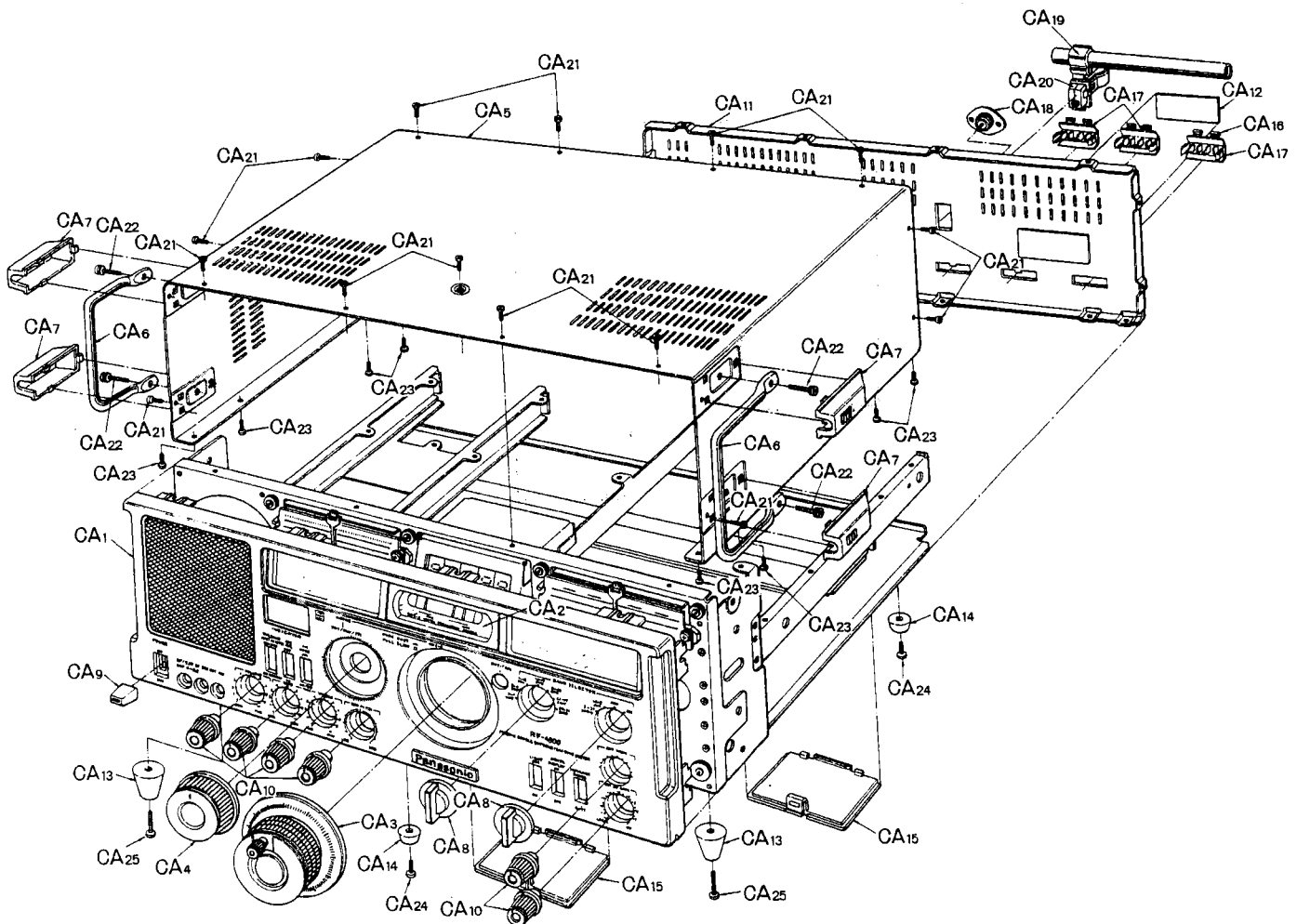
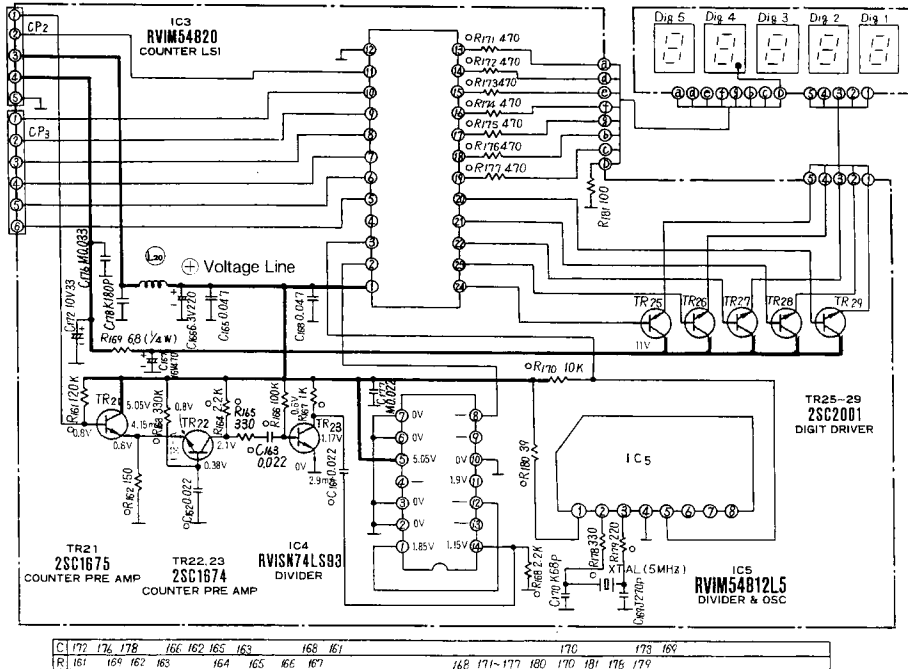


Fig. 31

<b>TR1</b> SW2-7 C 0V D 0V E 1.6V Ie 2.5mA	<b>TR2</b> SW2-7 C 0V B 4.1V E 5V Ie 1mA	<b>TR3</b> SW2-7 C 1.25V B 3.7V E 4.6V Ie 1.3mA	<b>TR4</b> SW4-8 C 0V B 4.1V E 5V Ie 0.4mA	<b>TR5</b> SW2-7 C 0V B 4.1V E 5V Ie 0.4mA	<b>TR6</b> SW2-7 C 0V B 4.1V E 5V Ie 0.7mA
<b>TR7</b> SW4 C 5.5V B 1V E 0.7V Ie 0.4mA	<b>TR8</b> SW6.6 C 5.5V B 1V E 0.9V Ie 0.33mA	<b>TR9</b> SW7.8 C 5.2V B 0.95V E 0.95V Ie 0.39mA	<b>TR10</b> SW4-8 C 0.75V B 4V E 5.5V Ie 0.36mA	<b>TR11</b> SW4-8 C 5.4V B 0.95V E 0.6V Ie 0.36mA	<b>TR12</b> SW7-COUNTER FM C 11V B 5.5V E 4.9V Ie 68mA
<b>TR13</b> SW4-8 C 0V B 4V E 0.34mA Ie 0.34mA	<b>TR14</b> SW2-7 C 0V B 4.2V E 5.1V Ie 1.1mA	<b>TR15</b> SW2-7 C 0V B 4.4V E 5.1V Ie 0.33mA	<b>TR16</b> FM C 0V B 0V D 3.6V Ie 0.25mA	<b>TR17</b> FM C 0V B 1V D 2V Ie 0.25mA	<b>TR18</b> FM SW1 C 0.2V D 0V E 2.15V Ie 0.3mA
<b>TR19</b> MW, SW C 4.8V B 2.7V E 2.15V Ie 0.3mA	<b>TR20</b> SW2 SW3 C 0V B 0.7V E 0V Ie 0V	<b>TR21</b> C 5.05V B 0.8V E 0.8V Ie 4.18mA	<b>TR22</b> C 2.1V B 0.38V E 0.8V Ie 1.93mA	<b>TR23</b> C 1.17V B 0.6V E 0V Ie 2.9mA	<b>TR24</b> FM C 0V B 4V E 5V Ie 0.9mA
<b>TR25-29</b> C 11V B E	<b>TR30</b> FM C 1.6V B 4V E 5V Ie 0.8mA	<b>TR31</b> FM C 1.8V B 4V E 5V Ie 0.76mA	<b>IC1</b> FM MW 1 0V 4.8V 2 0.05V 0V 3 0V 0V 4 3.4V 0V 5 2.8V 0V 6 5V 0V 7 5V 0V 8 3.8V 0V 9 0V 0.8V 10 0V 4.8V 11 0V 0.85V 12 0V 0.4V 13 0V 4.8V 14 0V 0.75V 15 0V 0V 16 0V 0V	<b>IC2</b> 1 12V 2 9.8V 3 0V 4 7V 5 1.4V 6 5.5V 7 4.5V 8 2.8V 9 2.8V 10 4.8V 11 1.15V 12 0V 13 0V 14 1.15V	<b>IC4</b> 1 1.85V 2 0V 3 0V 4 0V 5 5.05V 6 0V 7 0V 8 9 10 0V 11 0V 12 13 14 1.15V
<b>TR32</b> MW, SW C 0V B 3.0V E 4.4V Ie 0.6mA	<b>TR33</b> SSB, CW C 0V B 3.4V E 4.2V Ie 1.2mA	<b>TR34</b> SSB, CW C 2.7V B 0.2V E 0.18V Ie 0.7mA	<b>TR35</b> C 12V B 8.2V E 8.6V Ie 82mA		

Schematic Diagram (Counter Circuit)-Model RF-4800



Note: ○Mark.....Chip resistor and capacitor.



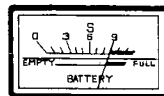
## TUNE/BATT METER ADJUSTMENT

### 1. RADIO RECEIVER SETTING

- Set band switch to MW.
- Set volume control MIN.
- Set indicator switch to BATT.
- Set AM mode switch to AM.
- Set power source voltage to 7.2 volts DC.

### 2. REMARKS

- Adjust R<sub>274</sub> so that the pointer of meter stays as shown in figure right.



## ALIGNMENT INSTRUCTIONS

### READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

#### Notes:

1. Set power switch to ON.
2. Set volume control to MAX.
3. Set bass and treble control to center.
4. Set band switch to MW, SW<sub>1</sub>~SW<sub>6</sub> or FM.
5. Set SW cal control to center.
6. Set AM RF gain control to DX.
7. Set FM AFC/Band width switch to WIDE or OFF (FM).
8. Set light switch to OFF.
9. Set AM ANL switch to OFF.
10. Set BFO pitch control to center.
11. Set digital display switch to OFF.
12. Set AM mode switch to AM or SSB/CW.
13. Set indicator switch to signal.
14. Set ANT trim control to center.
15. Output of signal generator should be no higher than necessary to obtain an output reading.

## MW, SW ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
<b>AM-IF ALIGNMENT</b>						
(1) MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. at 400 Hz	Point of non-interference.	Output meter across voice coil.	T <sub>a</sub> (AM 1st IFT) T <sub>b</sub> (AM 2nd IFT) T <sub>c</sub> (AM 3rd IFT) T <sub>d</sub> (AM 4th IFT) T <sub>e</sub> (AM 5th IFT)	Adjust for maximum output.
<b>BFO ALIGNMENT</b> Note: Set band width switch to "Narrow".						
MW	"	600 kHz	Tune to signal.	Audio output from speaker.	L <sub>52</sub> (BFO OSC Coil)	1. Cut off modulation after tune signal. 2. Set AM mode switch to CW/SSB. 3. Adjust for zero beat.
<b>SW-1st IF and 2nd OSC ALIGNMENT</b>						
(3) SW2	Connect EXT ANT (SW <sub>2</sub> ~ <sub>6</sub> ) terminal.	2 MHz	Point of non-interference.	Output meter across voice coil.	L <sub>46</sub> (SW 2nd OSC Coil) T <sub>1</sub> (SW 1st IFT) T <sub>2</sub> (SW 1st IFT)	Adjust for maximum output.
SW3	"	"	"	"	L <sub>49</sub> (SW 2nd OSC Coil)	"
<b>MW-RF ALIGNMENT</b>						
(4) MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	550 kHz	550 kHz 2.4 mm ( $\frac{3}{32}$ " )	Output meter across voice coil	L <sub>50</sub> (MW OSC Coil) L <sub>43</sub> (MW ANT Coil)	Adjust for maximum output.
(5) MW	"	1500 kHz	1500 kHz 57 mm (2 $\frac{1}{8}$ " )	"	C <sub>227</sub> (MW OSC Trimmer) C <sub>201</sub> (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

■ **SW4~7 X' tal ALIGNMENT** Note: Pull out socket [CP<sub>6</sub>].

BAND	CONNECTIONS	ADJUSTMENT	REMARKS
SW4	Connect RF voltmeter: ⊕ side to [TP <sub>1</sub> ] ⊖ side to [E]	C <sub>101</sub> (Trimmer) L <sub>35</sub> (39 MHz Coil)	1. Turn C <sub>101</sub> to its center position. 2. Adjust L <sub>35</sub> (Turn to upper) until 25 mV ± 1 mV is read on RF voltmeter.
SW4	Connect frequency counter: ⊕ side to [TP <sub>1</sub> ] ⊖ side to [E]	C <sub>101</sub> (Trimmer)	Adjust C <sub>101</sub> until 39, 100 MHz ± 100 Hz is read on RF voltmeter.
SW4	Connect RF voltmeter: ⊕ side to [TP <sub>2</sub> ] ⊖ side to [E]	L <sub>30</sub> (31 MHz Coil)	Adjust L <sub>30</sub> (Turn to upper) until 30 mV ± 1 mV is read on RF voltmeter.
SW5	"	L <sub>31</sub> (27 MHz Coil)	Adjust L <sub>31</sub> (Turn to upper) until 30 mV ± 1 mV is read on RF voltmeter.
SW7	"	L <sub>32</sub> (19 MHz Coil)	Adjust L <sub>32</sub> (Turn to upper) until 30 mV ± 1 mV is read on RF voltmeter.

■ **44~48 MHz BPF ALIGNMENT** Note: Pull out socket [CP<sub>6</sub>].

BAND	SWEEP GENERATOR		SWEEP SCOPE	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY			
SW4	Connect to test point [TP <sub>1</sub> ] through ceramic capacitor (0.01μF) negative side to point [E]	44.48 MHz	Connect to test point [TP <sub>2</sub> ] negative side to point [E]	L <sub>35</sub> (BPF Coil) L <sub>36</sub> (BPF Coil) L <sub>37</sub> (BPF Coil)	1. Turn L <sub>35</sub> to lower before adjustment. 2. Adjust L <sub>36</sub> and L <sub>37</sub> for maximum amplitude.

■ **TRAP ALIGNMENT** Note: Pull out socket [CP<sub>6</sub>].

BAND	CONNECTIONS	ADJUSTMENT	REMARKS
SW4	Connect RF voltmeter: ⊕ side to [TP <sub>2</sub> ] ⊖ side to [E]	L <sub>35</sub> (Trap Coil)	Adjust L <sub>35</sub> for minimum RF voltmeter reading.
SW5	Connect RF voltmeter: ⊕ side to [TP <sub>2</sub> ] ⊖ side to [E]	L <sub>28</sub> (Trap Coil)	Adjust L <sub>28</sub> for minimum RF voltmeter reading.
SW7	"	L <sub>29</sub> (Trap Coil)	Adjust L <sub>29</sub> for minimum RF voltmeter reading.

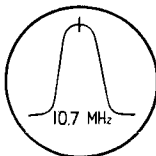


Fig. 32

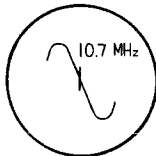


Fig. 33

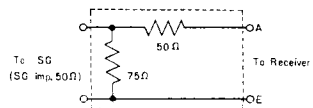
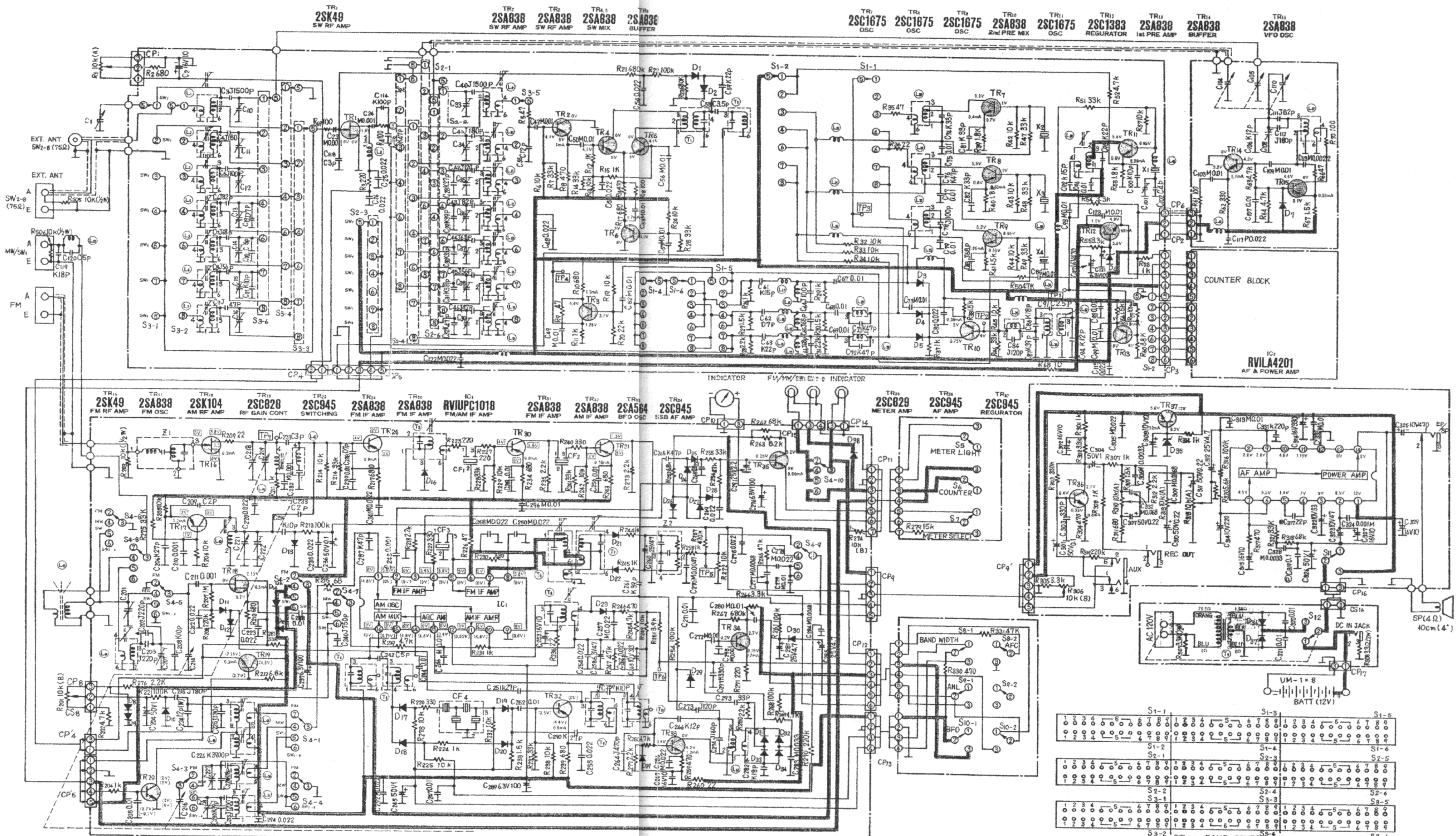
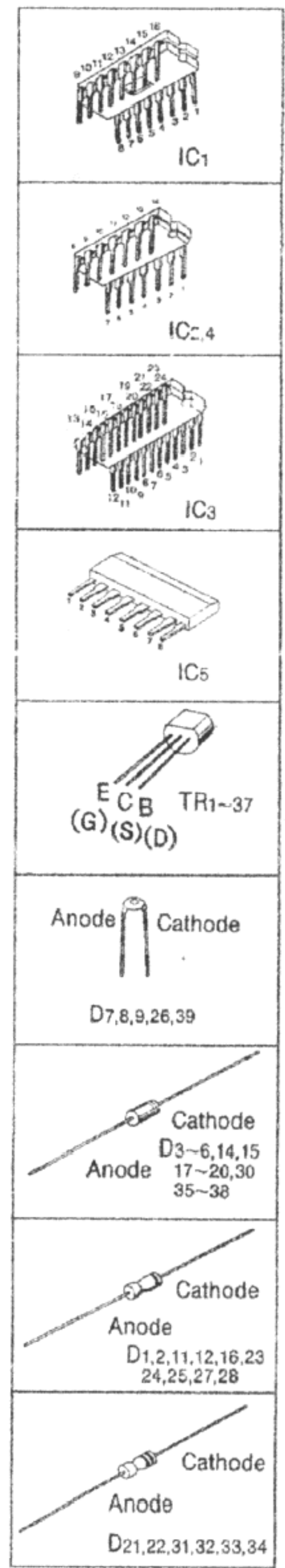


Fig. 34 FM Dummy Antenna

# Schematic Diagram - Model RF-4800



C	119	120	1	114	2	3~21	118	23	24~26	116	28~46	122	47~49	50	51	52	53	54	55~57	58	59	60	61~63	64~69	70~72	73	74~80	81~83	84~87	91~94	95~100	101,115,123	102	103~107	108~115	117											
R	505	506	4	2	201~207	208~216	218~230	231~240	248	287	241~245	272	246	247	248	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	274	271	273	275	283	291	295	279	284	285		
R	201	204	202	203	205	221	215	206	208	209	210	208	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245

- Notes:**
- S1-1~S1-6: Band switch (SW2) in "SW2" position.
  - S4-1~S4-10: Band switch (SW1, MW, FM) in "FM" position.
  - S5: Light switch in "OFF" position.
  - S6: Digital display switch in "OFF" position.
  - S7: Indicator switch in "SIGNAL" position.
  - S8-1, S8-2: FM AFC/Band Width switch in "NARROW" position.
  - S9: AM ANL switch in "OFF" position.
  - S10-1, S10-2: AM mode switch in "AM" position.
  - S11: Power switch in "OFF" position.

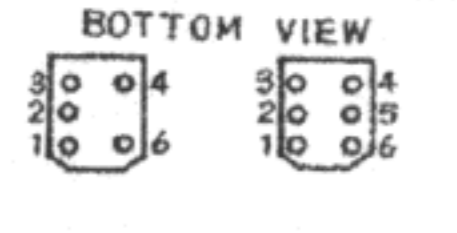
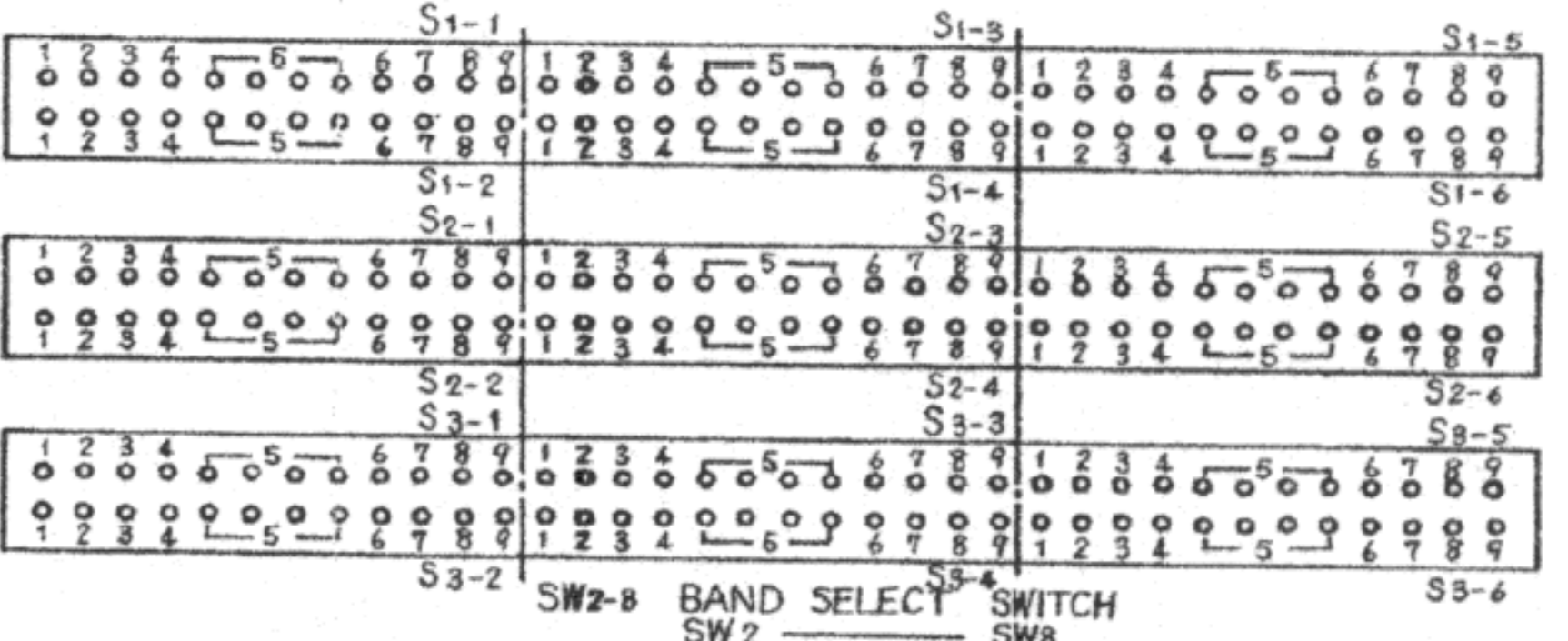
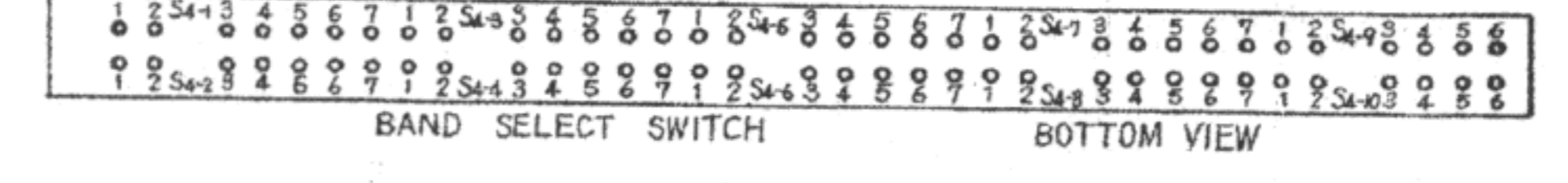
- S12: AC-BATTERY selector in "BATTERY" position.
- DC voltage measurements are taken with circuit tester 10kΩ/V from negative side of batteries.  
□.....FM position, ( ).....MW, SW position.  
( ).....SW2 position, [ ].....SW1 position.  
TR1~4, 15, 20...SW2 position TR1...SW1 position  
TR5...SW2 position TR6...SW1 position TR7, 11, 13...SW1 position  
TR12...Display ON position TR13...MW, SW position  
TR14, 22...MW, SW position TR23, 34...CW/SSB position  
12. Battery current: No signal ..... 45mA  
Maximum output ..... 600mA

**IMPORTANT SAFETY NOTICE**  
THE SHADED AREA IN THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

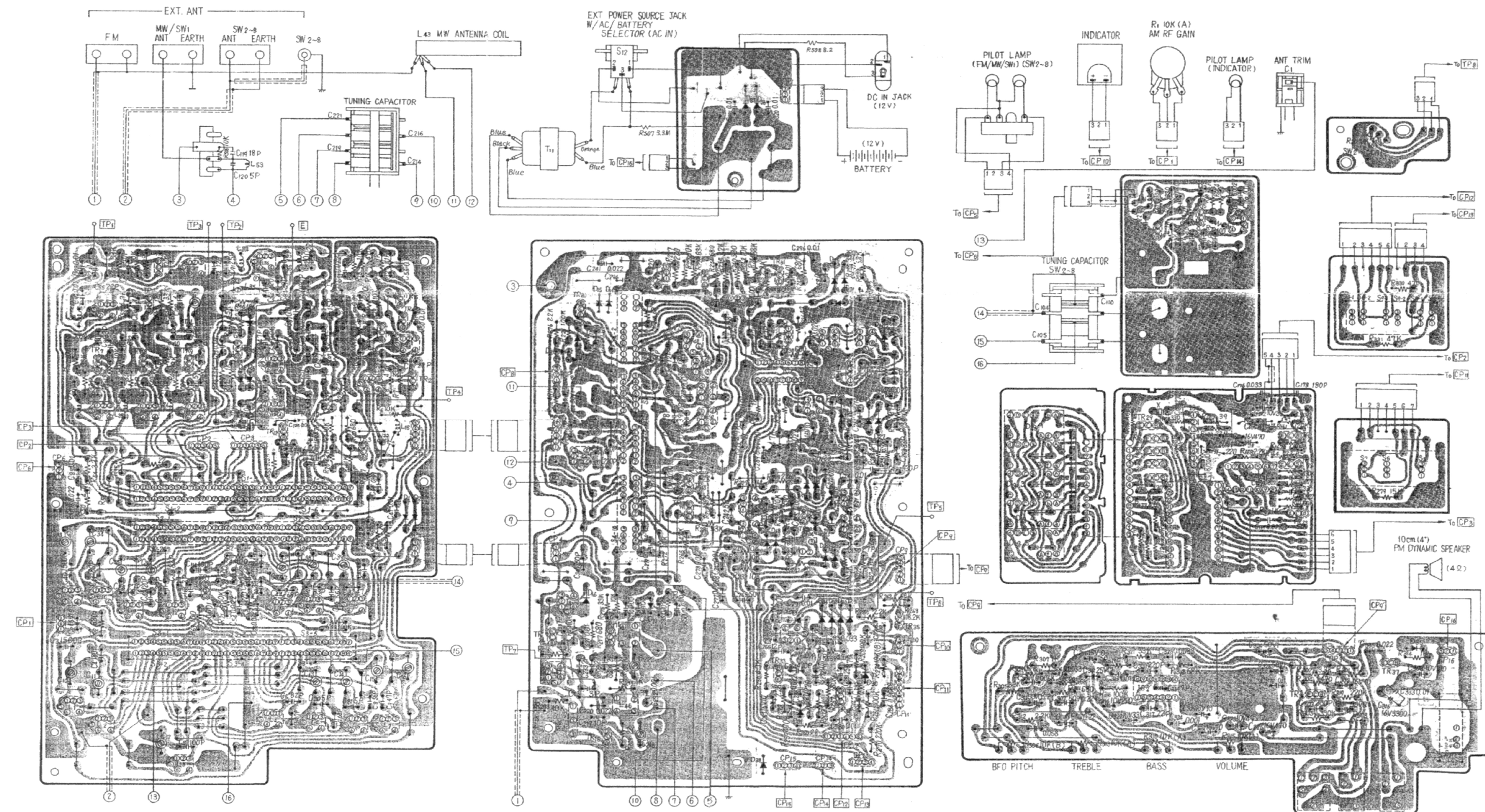
D1,2	OA90	SW AGC
D2~8	MA150	SWITCHING
D6	RVDEQ106HF	ZENER
D7	RVVD1251M	AOC
D8,9	RVVD1252L	AOC
D10	RVDS113	COUNT ADJUST
D11,12	OA90	AM AGC
D13	RVDS113	FM AFC

D14,15	MA150	SWITCHING
D16	OA90	FM AGC
D17~20	MA150	SWITCHING
D21,22	2-OA90	FM DET
D23~26	OA90	AM METER RECT
D27	RVVD1150L	AOC
D27,28	OA90	FM METER RECT
D29	RVDS113	BFO DET

D30	MA150	ANL
D31~34	2-OA90	BFO DET
D35	RVDMZ206	Zener
D36,37	RV10E1LF	RECT
D38	MA150	SWITCHING
D39	RVVD1251M	AOC



# Circuit Board Wiring View-Model RF-4800



TR, D & IC	TR7	TR8	TR11	TR13	TR9	TR10	D4	D5	D3	TR12	D6	TR3	TR6	TR4	TR5	TR2	D8	D9	TR10	D4	D5	TR3	D21	D22	TR31	IC1	D26	D25	D24	D23	D22	D21	D20	D19	D18	D17	D16	D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	TR14	TR15	TR16	TR17	TR18	TR19	IC2	TR20	IC3	TR21	TR22	TR23	TR24	TR25	TR26	TR27	TR28	TR29	TR30	TR31	TR32	TR33	TR34	TR35	TR36	TR37	TR38	TR39	TR40	TR41	TR42	TR43	TR44	TR45	TR46	TR47	TR48	TR49	TR50	TR51	TR52	TR53	TR54	TR55	TR56	TR57	TR58	TR59	TR60	TR61	TR62	TR63	TR64	TR65	TR66	TR67	TR68	TR69	TR70	TR71	TR72	TR73	TR74	TR75	TR76	TR77	TR78	TR79	TR80	TR81	TR82	TR83	TR84	TR85	TR86	TR87	TR88	TR89	TR90	TR91	TR92	TR93	TR94	TR95	TR96	TR97	TR98	TR99	TR100
T & L	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53	L54	L55	L56	L57	L58	L59	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69	L70	L71	L72	L73	L74	L75	L76	L77	L78	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88	L89	L90	L91	L92	L93	L94	L95	L96	L97	L98	L99	L100																																																																						

## ■ SW RF ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS	
	CONNECTIONS	FREQUENCY					
<b>SW1-RF ALIGNMENT</b>							
(1)	SW1	Connect to EXT ANT (MW/SW1) terminal.	1.6 MHz	1.6 MHz 3 mm ( $\frac{1}{8}$ " )	Output meter across voice coil.	L <sub>51</sub> (SW1 OSC Coil) L <sub>44</sub> (SW1 ANT Coil)	Adjust for maximum output.
(2)	SW1	"	3 MHz	3 MHz 58.7mm( $2\frac{3}{8}$ " )	"	C <sub>228</sub> (SW1 OSC Trimmer) C <sub>207</sub> (SW1 ANT Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).
<b>SW2-RF ALIGNMENT</b>							
(3)	SW2	Connect to EXT ANT (MW/SW2) terminal.	3 MHz	3 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>42</sub> (SW2 OSC Coil) L <sub>2</sub> (SW2 TUNE Coil) L <sub>1</sub> (SW2 ANT Coil)	Adjust for maximum output.
(4)	SW2	"	7 MHz	7 MHz 60.5mm( $2\frac{3}{8}$ " )	"	C <sub>104</sub> (SW2 OSC Trimmer) C <sub>33</sub> (SW2 TUNE Trimmer) C <sub>10</sub> (SW2 ANT Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).
<b>SW3-RF ALIGNMENT</b>							
(5)	SW3	"	7 MHz	7 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>10</sub> (SW3 TUNE Coil) L <sub>2</sub> (SW3 ANT Coil)	Adjust for maximum output.
(6)	SW3	"	11.01 MHz	11.01 MHz 60.5mm ( $2\frac{3}{8}$ " )	"	C <sub>34</sub> (SW2 TUNE Trimmer) C <sub>11</sub> (SW2 ANT Trimmer)	Adjust for maximum output. Repeat steps (5) and (6).
<b>SW4-RF ALIGNMENT</b>							
(7)	SW4	"	11.01 MHz	11.01 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>11</sub> (SW4 TUNE Coil) L <sub>3</sub> (SW4 ANT Coil)	Adjust for maximum output.
(8)	SW4	"	15.01 MHz	15.01 MHz 60.5mm ( $2\frac{3}{8}$ " )	"	C <sub>38</sub> (SW4 TUNE Trimmer) C <sub>12</sub> (SW4 ANT Trimmer)	Adjust for maximum output. Repeat steps (7) and (8).
<b>SW5-RF ALIGNMENT</b>							
(9)	SW5	"	15.01 MHz	15.01 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>12</sub> (SW5 TUNE Coil) L <sub>4</sub> (SW5 ANT Coil)	Adjust for maximum output.
(10)	SW5	"	19.01 MHz	19.01 MHz 60.5mm ( $2\frac{3}{8}$ " )	"	C <sub>38</sub> (SW6 TUNE Trimmer) C <sub>13</sub> (SW5 ANT Trimmer)	Adjust for maximum output. Repeat steps (9) and (10).
<b>SW6-RF ALIGNMENT</b>							
(11)	SW6	"	19.01 MHz	19.01 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>13</sub> (SW6 TUNE Coil) L <sub>5</sub> (SW6 ANT Coil)	Adjust for maximum output.
(12)	SW6	"	23.01 MHz	23.01 MHz 60.05mm ( $2\frac{3}{8}$ " )	"	C <sub>27</sub> (SW6 TUNE Trimmer) C <sub>14</sub> (SW6 ANT Trimmer)	Adjust for maximum output. Repeat steps (11) and (12).
<b>SW7-RF ALIGNMENT</b>							
(13)	SW7	"	23.01 MHz	23.01 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>14</sub> (SW7 TUNE Coil) L <sub>6</sub> (SW7 ANT Coil)	Adjust for maximum output.
(14)	SW7	"	27.01 MHz	27.01 MHz 60.5mm ( $2\frac{3}{8}$ " )	"	C <sub>38</sub> (SW7 TUNE Trimmer) C <sub>15</sub> (SW7 ANT Trimmer)	Adjust for maximum output. Repeat steps (13) and (14).
<b>SW8-RF ALIGNMENT</b>							
(15)	SW8	"	27.01 MHz	27.01 MHz 3mm ( $\frac{1}{8}$ " )	"	L <sub>15</sub> (SW8 TUNE Coil) L <sub>7</sub> (SW8 ANT Coil)	Adjust for maximum output.
(16)	SW8	"	31.01 MHz	31.01 MHz 60.5mm ( $2\frac{3}{8}$ " )	"	C <sub>39</sub> (SW8 TUNE Trimmer) C <sub>16</sub> (SW8 ANT Trimmer)	Adjust for maximum output. Repeat steps (15) and (16).

## ■ FM ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING [DISTANCE]	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS	
CONNECTIONS	FREQUENCY					
<b>FM-IF ALIGNMENT</b>						
(1)	High side thru. 0.001 $\mu$ F to point [TP <sub>7</sub> ]. Negative side to point [E].	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to point [TP <sub>7</sub> ]. Negative side to point [E].	T <sub>3</sub> (FM 1st IFT) T <sub>5</sub> (FM 2nd IFT) (Primary)	Adjust for maximum amplitude. (Refer to fig. 32).
(2)	"	"	"	"	T <sub>7</sub> (FM 2nd IFT) (Secondary)	Adjust for maximum amplitude. (Refer to fig. 33).
<b>FM-RF ALIGNMENT</b>						
(3)	Connect to EXT ANT (FM) terminal through FM dummy antenna. (Refer to fig. 34).	87.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L <sub>45</sub> (FM OSC Coil)	(*) Adjust for maximum output.
(4)	"	90 MHz	Tune to signal.	"	L <sub>46</sub> (FM TUNE Coil)	(*) Adjust for maximum output.
(5)	"	106 MHz	106 MHz 53.1mm (2 $\frac{1}{8}$ " )	"	C <sub>222</sub> (FM OSC Trimmer) C <sub>218</sub> (FM TUNE Trimmer)	(*) Adjust for maximum output. Repeat steps (3)~(5).
(*) Three output responses will be present; proper tuning is the center frequency.						

## ■ ALIGNMENT POINTS

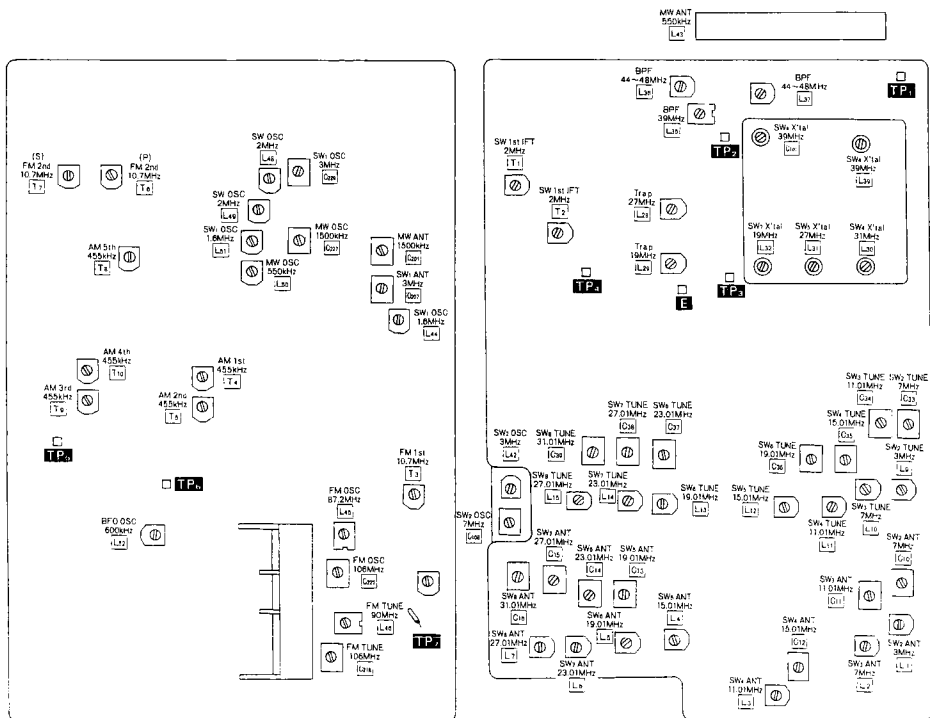


Fig. 35

■ BLOCK DIAGRAM

# Block Diagram

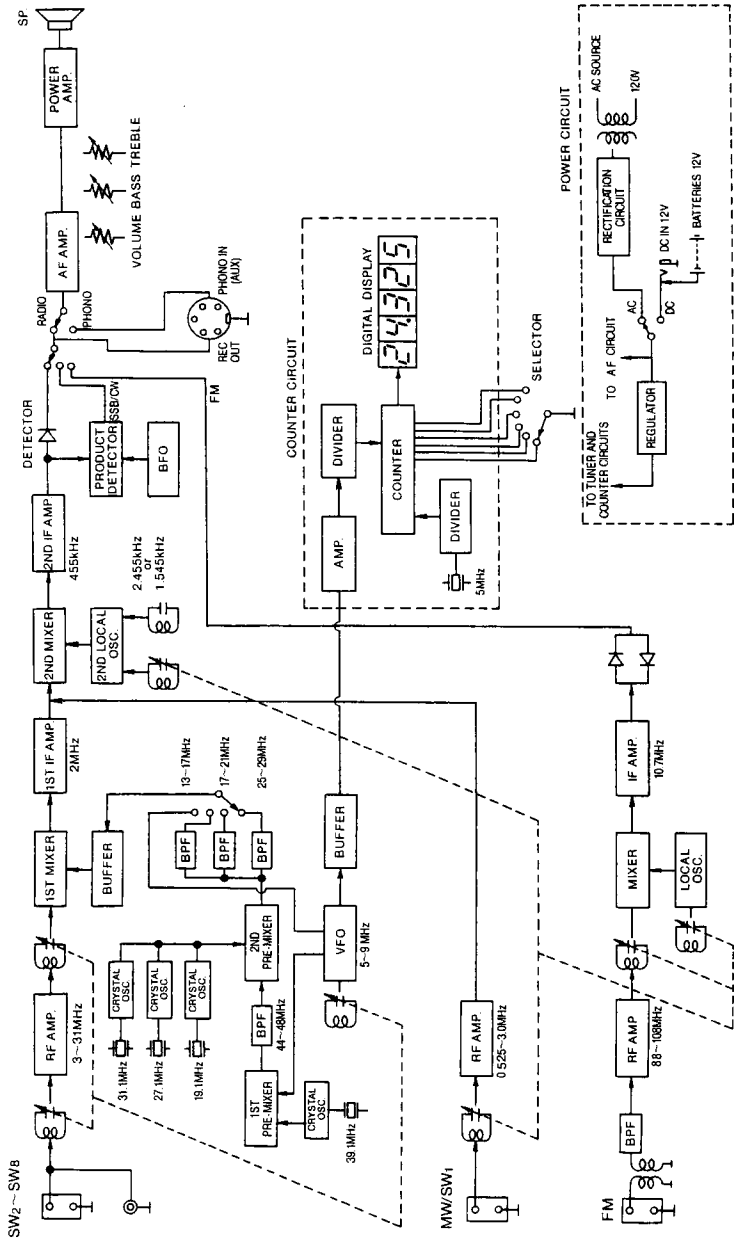


Fig. 36

■ IC3 (RVIM54820) BLOCK DIAGRAM

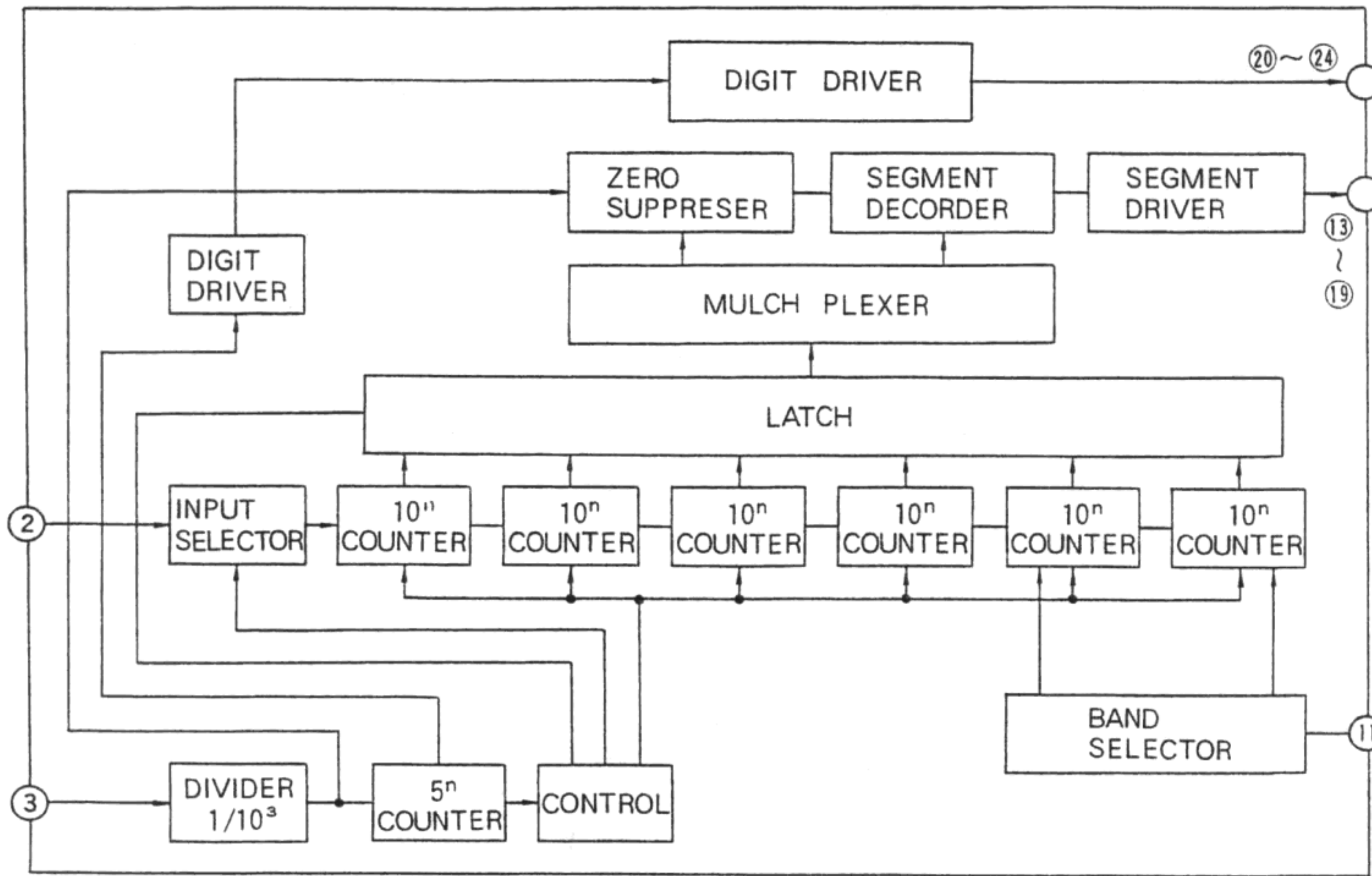


Fig. 37

■ CHASSIS PARTS LOCATIONS

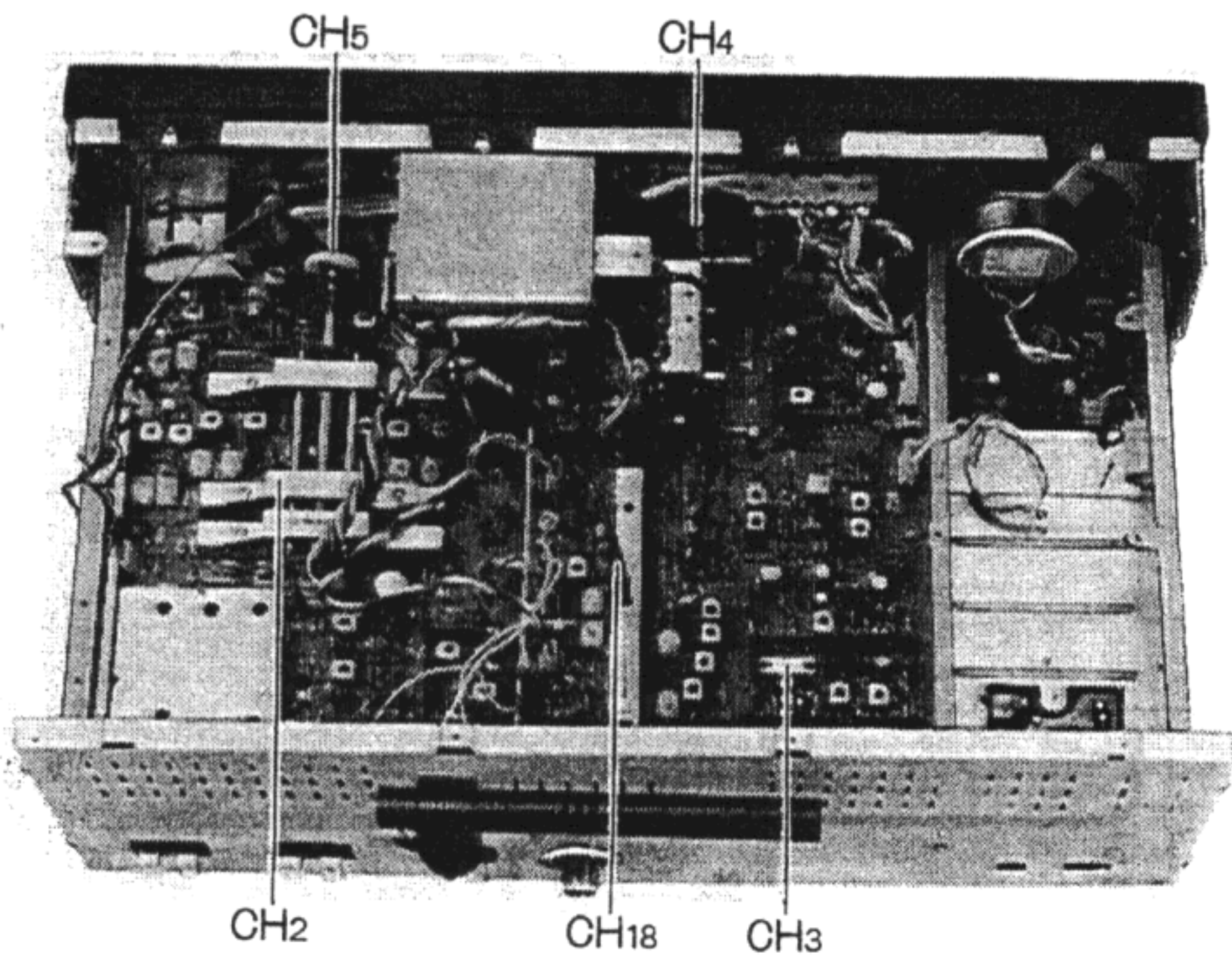


Fig. 38

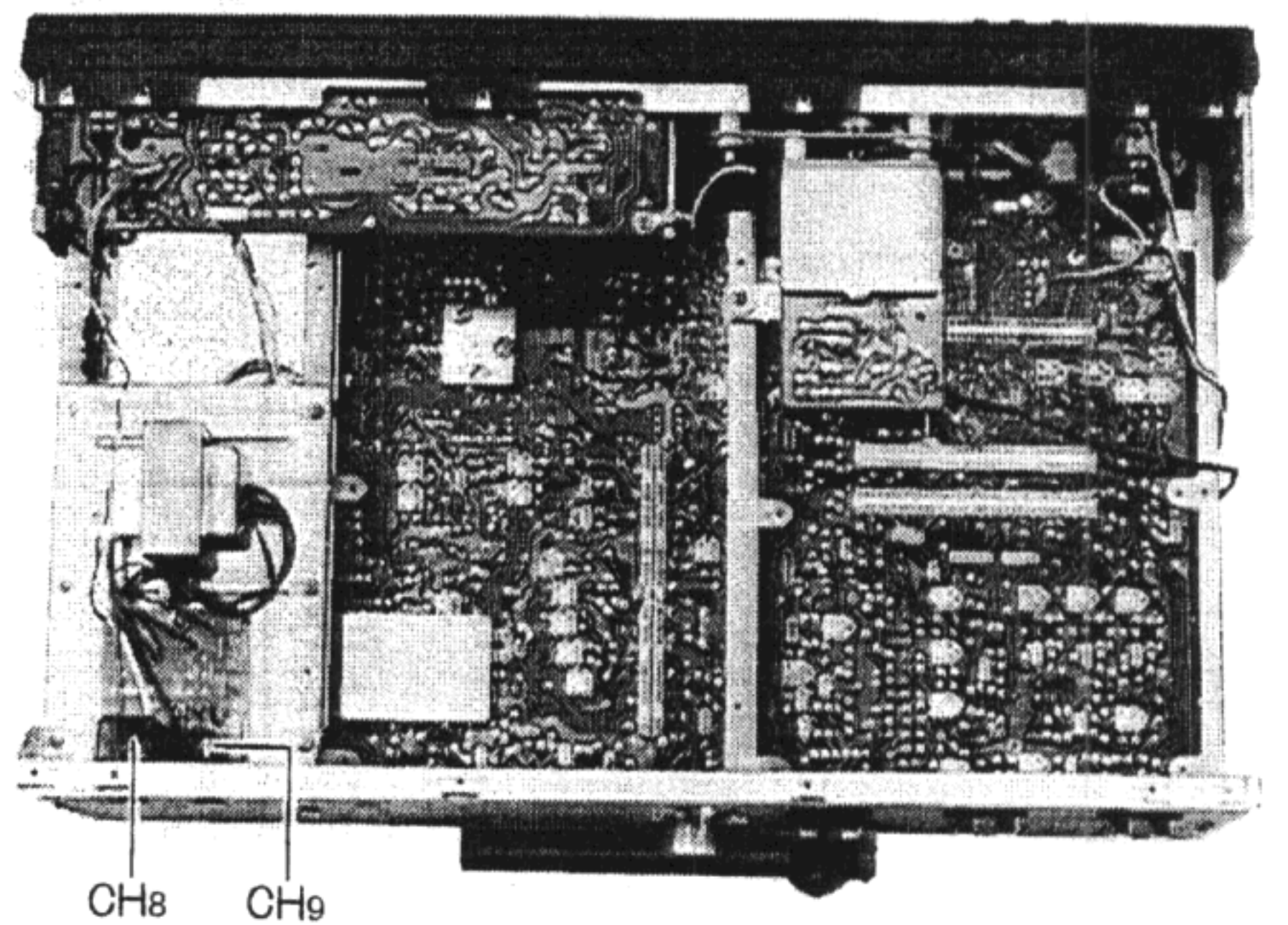


Fig. 39

■ PACKING MATERIALS & ACCESSORIES

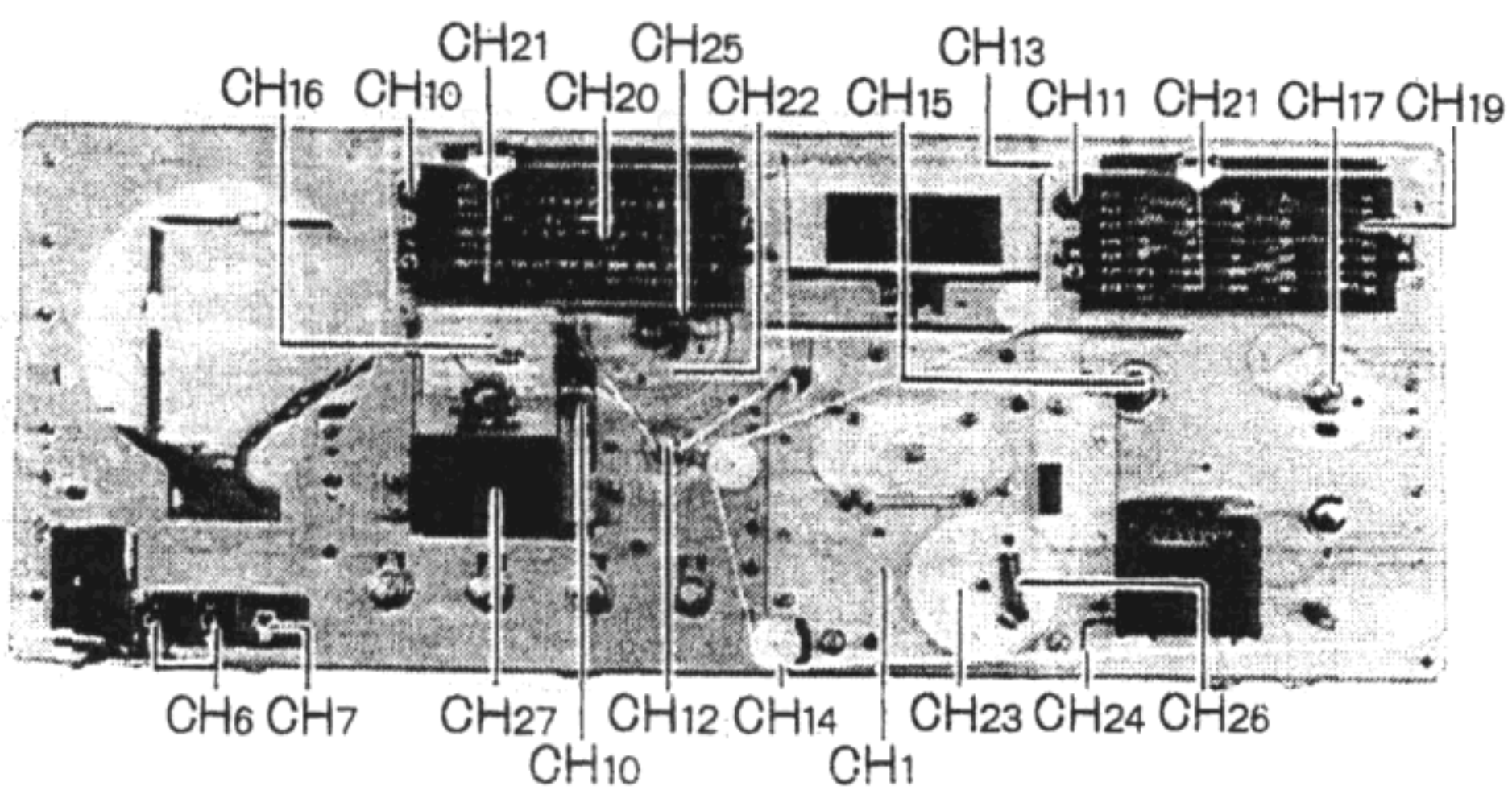


Fig. 40

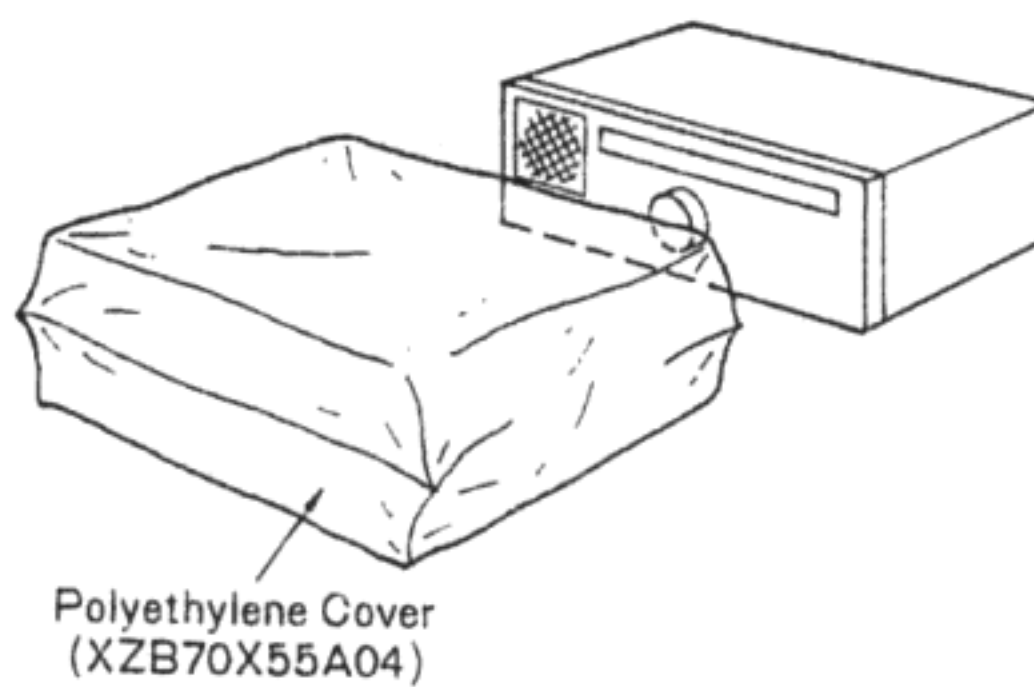


Fig. 41

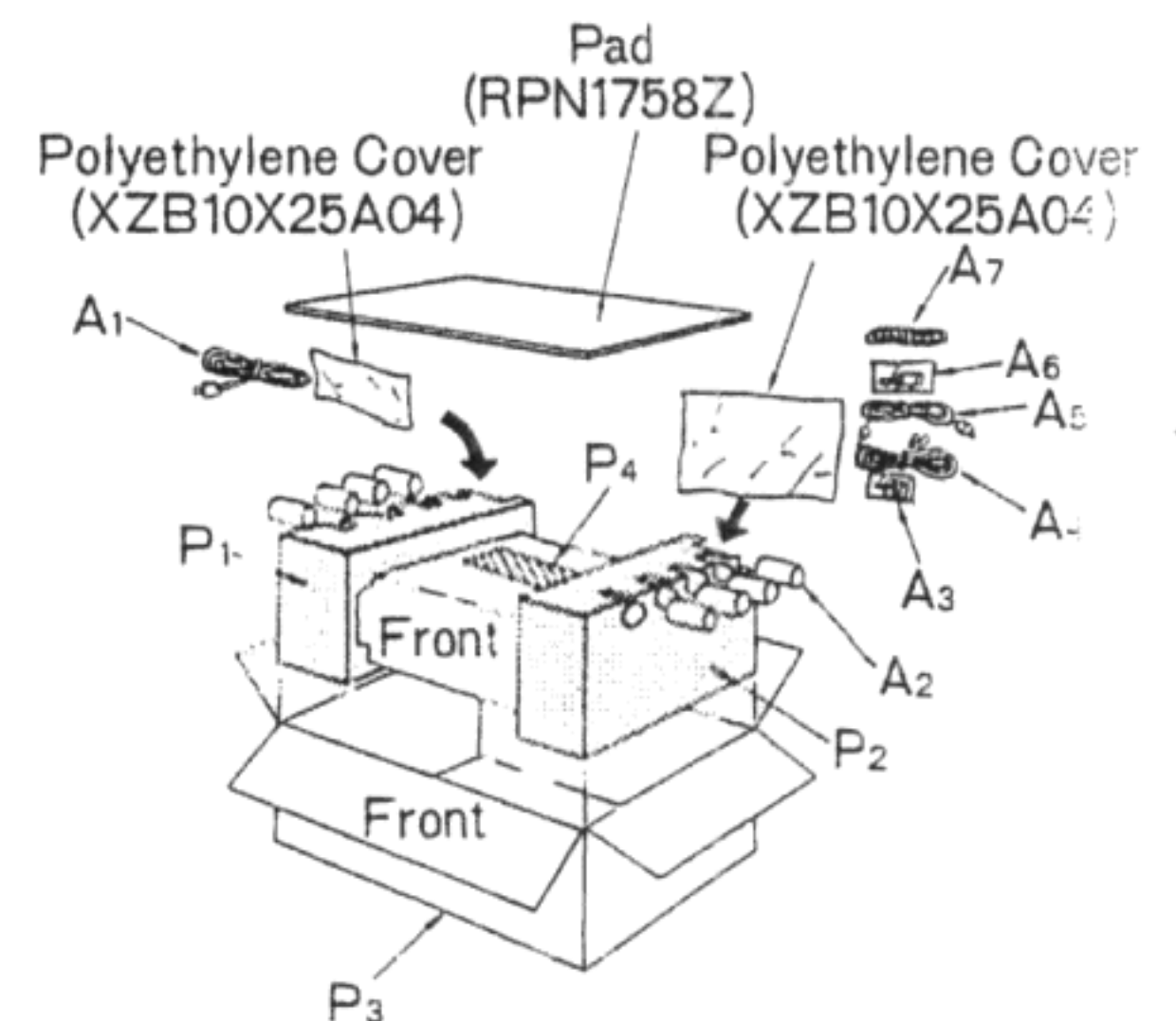


Fig. 42



# REPLACEMENT PARTS LIST..... Model RF-4800 (RD7710-1509)

NOTES: 1. Part numbers are indicated on most mechanical parts.

2. Please use this part number for parts orders.

3. Components identified by shaded area have special characteristic important for safety. When replacing any of these components use only manufacturer's specified parts.

4. Part numbers shown in bold letters are service standard parts and may differ from production parts.

5. The O mark is used by the manufacturing plant only.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks	
<b>INTEGRATED CIRCUITS, TRANSISTORS AND DIODES</b>					
IC1	RV1UP01018	IC, FM/AM IF Amp.	1		
IC2	RV1LA4201	IC, AF & Power Amp.	1		
IC3	RV1M64620	IC, Counter LSI	1		
IC4	RV1SN74LS93	IC, Divider	1		
IC5	RV1M64812L5	IC, Divider & Oscillator	1		
TR1,16	28X49	Transistor (Si), SW RF Amp, FM RF Amp.	2		
TR2,3,4,5,6,10,13,14,15,17,24,30,31,32	2SA638	Transistor (Ge), SW RF Amp, SW Mixer, Buffer, 2nd Pre Mix, 1st Pre Mix, VFO Oscillator, FM Oscillator, FM IF Amp, AM IF Amp.	14		
TR7,8,9,11	29C1675	Transistor (Si), Oscillator	4		
TR12	29C1583	Transistor (Si), Regulator	1		
TR16	28K104	Transistor (Si), AM RF Amp	1		
TR19	28C828	Transistor (Si), RF Gain Control	1		
TR20,34,36,37	28C645	Transistor (Si), Switching, SSB AF Amp, AF Amp, Regulator	4		
TR21	29C1675	Transistor (Si), Counter Pre Amp.	1		
TR22,23	29C1674	Transistor (Si), Counter Pre Amp.	2		
TR25,26,27,28,29	28C2001	Transistor (Si), Digit Driver	5		
TR33	2SA564	Transistor (Ge), BFO Oscillator	1		
TR35	28C829	Transistor (Si), Meter Amp	1		
D1,2,11,12,16,23,24,25,27,28	0A80	Diode (Ge) SW AGC, AM AGC, FM AGC, AM Meter Rectifier	10		
D3,4,5,14,15,17,18,19,20,30,38	MA150	Diode (Si), Switching, ANL	3		
D6	RVDEQA0106RF	Diode (Si), Zener	1		
D8,9	RVBYD1252L	Diode (Si), AOC	2		
D10,13,29	RVDS115	Diode (Si), Count Adjust, FM AFC, BFO Detector	3		
D21,22,31,32,33,34	2-OA90	Diode (Ge), FM Detector, BFO Detector	6		
D26	RVDDYD1150L	Diode (Si), AOC	1		
D35	DM2206	Diode (Si), Zener	1		
D36,37	RV1D3813F	Diode (Si), Rectifier	2		
D39	RVDDYD1150L	Diode (Si), AOC	1		
D7	RVDDYD1251L	Diode (Si), AOC	1		
Dig 1,2,3,4,5	RADGL9F054	LED (Refer to Page 22)	5		

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
<b>CERAMIC FILTERS, COILS AND TRANSFORMERS</b>				
CF1,2,3	RVF107MFR	Ceramic Filter	3	
CF4	RVFLFB4	Ceramic Filter	1	
L1,9	RLA3M32	Antenna Coil or Tuning Coil, SW2	2	
L2,10	RLA3M33	Antenna Coil or Tuning Coil, SW3	2	
L3,11	RLA3M34	Antenna Coil or Tuning Coil, SW4	2	
L4,12,29	RLA3M35	Antenna Coil or Tuning Coil, SW5	3	
L5,7,14,28	RLA3M37	Antenna Coil, SW6, SW6	3	
L6,15	RLA3M38	Tuning Coil, SW7	2	
L13	RLA3M36	Tuning Coil, SW7, SW8	2	
L30,31,32,36,37,39	RL09M7	Oscillator Coil, Xtal	6	
L35	RLD4M6	Coil, Trap	1	
L42	RL03M52	Oscillator Coil, SW2	1	
L43	RLF2E41	Antenna Coil, MW	1	
L44	RLA3M31	Antenna Coil, SW1	1	
L45	RLD4M1	Oscillator Coil, FM	1	
L46	RLD4M8	Antenna Coil, FM	1	
L47	RLI4M103	Coil, Trap	1	
L48,51	RL03M51	Oscillator Coil, 2nd Local & SW1	2	
L50	RL02M16	Oscillator Coil, 2nd Local	1	
L52	RL09M8	Oscillator Coil, MW	1	
T1	RLI9M3	IFT, SW 1st	1	
T2	RLI9M4	IFT, SW 1st	1	
T3	RLI4M101	IFT, FM 1st	1	
T4,9,10	RLI2M212	IFT, AM 1st, 3rd, 4th	3	
T5	RLI2M208	IFT, AM 2nd	1	
T6	RLI4M504	IFT, FM 2nd (Primary)	1	
T7	RLI4M506	IFT, FM 2nd (Secondary)	1	
T8	RLI2M402	IFT, AM 5th	1	
T11	RLTFE331A	Power Transformer	1	
<b>VARIABLE RESISTORS</b>				
R1	EYHCA068A14	Variable Resistor, 10KΩ (A), RP Gain Control	1	
R201	EYLD8AT12B14	Variable Resistor, 10KΩ (B), SW2-8 CAL	1	
R274	EVLTOAA00B14	Variable Resistor, 10KΩ (B), Preset, Meter Control	1	
R306	EYHBSA029B14	Variable Resistor, 10KΩ (B), BFO Pitch	1	
R310,313,315	EYHBSA029A14	Variable Resistor, 10KΩ (A), Bass, Treble & Volume Control	3	
<b>VARIABLE CAPACITORS</b>				
C1	RCVC321A152	Tuning Capacitor	1	
C10,201,218	RCVFX10AG	Trimmer Capacitor	3	
C11,16,43,39	RCV1FX20AG	Trimmer Capacitor	16	
C18,207,222	RCV1FX20AG	Trimmer Capacitor	16	
C214,216,219	RCVCV45D112	Tuning Capacitor	1	
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Ref. No.	Part No.	Part Name & Description	Remarks	
			Part Set	Remarks
C104,105,110	RCVGV35D112	Tuning Capacitor	1	O
<b>COMPONENT COMBINATIONS AND CRYSTAL</b>				
Z1	RXABPWF1	Component Combination, Coils & Capacitors	1	O
Z2	EXA5D104C	Component Combination, 330PF x 3, 4.7KΩ x 2	1	
X1	RVCX39100N3R	Crystal	1	O
X2	RVCX31100N3R	Crystal	1	O
X3	RVCX27100N3R	Crystal	1	O
X4	RVCX19100N3R	Crystal	1	O
X5	RVCX5000N5Z	Crystal, 5MHz	1	O
<b>SPEAKER</b>				
SP	EAS10P72S	Speaker, Imp. 4.0, 10cm (4"), PM Dynamic	1	O
<b>SWITCHES</b>				
S1.1 - S3.6	BSRK68S1	Switch, Band (SW2-8)	3	
S4.1 - S4.10	ESA2625	Switch, Band (PW/MW/SW1/SW2-8)	1	O
S5 - 7, S8-1	RSTX003Y-A	Switch, Light, Digital Display	2	
S8-2, S9	S10-1, S10-2	Indicator, FM, AFC/Band Width, MW		
S10-1, S10-2	RST51Y5-H	ANI, or AM Mode	1	
S11		Switch, Power	1	
<b>RESISTORS</b>				
R2	ERD25TJ16R1	680Ω, 1/2Watt, ±5%, Carbon	1	
R3	ERD25TJ1921	220Ω, 1/2Watt, ±5%, Carbon	1	
R4	ERD25TJ1721	100Ω, 1/2Watt, ±5%, Carbon	1	
R5	ERD25TJ1470	470Ω, 1/2Watt, ±5%, Carbon	1	
R6	ERD25TJ1470	10KΩ, 1/2Watt, ±5%, Carbon	1	
R7	ERD25TJ1033	33KΩ, 1/2Watt, ±5%, Carbon	1	
R8	ERD25TJ471	47Ω, 1/2Watt, ±5%, Carbon	1	
R9	ERD25TJ4670	470Ω, 1/2Watt, ±5%, Carbon	1	
R10	ERD25TJ661	660Ω, 1/2Watt, ±5%, Carbon	1	
R11	ERD25TJ102	10Ω, 1/2Watt, ±5%, Carbon	1	
R12	ERD25TJ102	1KΩ, 1/2Watt, ±5%, Carbon	1	
R13	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R14	ERD25TJ363	363KΩ, 1/2Watt, ±5%, Carbon	1	
R15	ERD25TJ102	1KΩ, 1/2Watt, ±5%, Carbon	1	
R16	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R17	ERD25TJ661	660Ω, 1/2Watt, ±5%, Carbon	1	
R18	ERD25TJ101	100Ω, 1/2Watt, ±5%, Carbon	1	
R19	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R20	ERD25TJ223	22KΩ, 1/2Watt, ±5%, Carbon	1	
R21	ERD25TJ684	680KΩ, 1/2Watt, ±5%, Carbon	1	
R22	ERD25TJ104	100KΩ, 1/2Watt, ±5%, Carbon	1	
R23	ERD25TJ684	680KΩ, 1/2Watt, ±5%, Carbon	1	
R24	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R25	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R26	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R27	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R28	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R29	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R30	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R31	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R32	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R33	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	

Ref. No.	Part No.	Part Name & Description	Remarks	
			Part Set	Remarks
R34	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R35	ERD25TJ470	47Ω, 1/2Watt, ±5%, Carbon	1	
R36	ERD25TJ220	22Ω, 1/2Watt, ±5%, Carbon	1	
R37	ERD25TJ102	1KΩ, 1/2Watt, ±5%, Carbon	1	
R38	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R39	ERD25TJ182	1.8KΩ, 1/2Watt, ±5%, Carbon	1	
R40	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R41	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R42	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R43	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R44	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R45	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R46	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R47	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R48	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R49	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R50	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R51	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R52	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R53	ERD25TJ182	1.8KΩ, 1/2Watt, ±5%, Carbon	1	
R54	ERD25TJ332	3.3KΩ, 1/2Watt, ±5%, Carbon	1	
R55	ERD25TJ332	3.3KΩ, 1/2Watt, ±5%, Carbon	1	
R56	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R57	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R58	ERD25TJ102	1KΩ, 1/2Watt, ±5%, Carbon	1	
R59	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R60	ERD25TJ333	33KΩ, 1/2Watt, ±5%, Carbon	1	
R61	ERD25TJ331	100Ω, 1/2Watt, ±5%, Carbon	1	
R62	ERD25TJ301	330Ω, 1/2Watt, ±5%, Carbon	1	
R63	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R64	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R65	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R66	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R67	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R68	ERV1ANJ100	100Ω, 1/2Watt, ±5%, Metal Oxide	1	
R69	ERD25TJ101	100Ω, 1/2Watt, ±5%, Carbon	1	
R70	ERD25TJ101	100Ω, 1/2Watt, ±5%, Carbon	1	
R71	ERD25TJ124	120KΩ, 1/2Watt, ±5%, Carbon	1	
R72	ERD25TJ151	150KΩ, 1/2Watt, ±5%, Carbon	1	
R73	ERD25TJ354	350KΩ, 1/2Watt, ±5%, Carbon	1	
R74	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R75	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R76	ERD25TJ104	100KΩ, 1/2Watt, ±5%, Carbon	1	
R77	ERD25TJ102	1KΩ, 1/2Watt, ±5%, Carbon	1	
R78	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R79	ERD25TJ683	6.8K, 1/2Watt, ±5%, Carbon	1	
R80	ERD25TJ683	6.8K, 1/2Watt, ±5%, Carbon	1	
R81	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R82	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R83	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R84	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R85	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R86	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R87	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R88	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R89	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R90	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R91	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R92	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R93	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R94	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R95	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R96	ERD25TJ472	4.7KΩ, 1/2Watt, ±5%, Carbon	1	
R97	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R98	ERD25TJ152	1.5KΩ, 1/2Watt, ±5%, Carbon	1	
R99	ERD25TJ100	100Ω, 1/2Watt, ±5%, Carbon	1	
R100	ERD25TJ100	100Ω, 1/2Watt, ±5%, Carbon	1	
R101	ERD25TJ101	100Ω, 1/2Watt, ±5%, Carbon	1	
R102	ERD25TJ124	120KΩ, 1/2Watt, ±5%, Carbon	1	
R103	ERD25TJ151	150KΩ, 1/2Watt, ±5%, Carbon	1	
R104	ERD25TJ354	350KΩ, 1/2Watt, ±5%, Carbon	1	
R105	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R106	ERD25TJ104	100KΩ, 1/2Watt, ±5%, Carbon	1	
R107	ERD25TJ102	1KΩ, 1/2Watt, ±5%, Carbon	1	
R108	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R109	ERD25TJ683	6.8K, 1/2Watt, ±5%, Carbon	1	
R110	ERD25TJ683	6.8K, 1/2Watt, ±5%, Carbon	1	
R111	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R112	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R113	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R114	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R115	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R116	ERD25TJ471	470Ω, 1/2Watt, ±5%, Carbon	1	
R117	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R118	ERD25TJ331	330Ω, 1/2Watt, ±5%, Carbon	1	
R119	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R120	ERD25TJ222	2.2KΩ, 1/2Watt, ±5%, Carbon	1	
R121	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	
R122	ERD25TJ103	10KΩ, 1/2Watt, ±5%, Carbon	1	

Ref. No.	Part No.	Part Name & Description	Part Set	Remarks
R202	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon	1	
R203	ERC12GK203	20KΩ, ½Watt, ±10%, Solid	1	
R204	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R205	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R206	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R207	ERD25TJ105	1MΩ, ½Watt, ±5%, Carbon	1	
R208	ERD25TJ105	1MΩ, ½Watt, ±5%, Carbon	1	
R209	ERD25TJ224	220KΩ, ½Watt, ±5%, Carbon	1	
R210	ERD25TJ681	680Ω, ½Watt, ±5%, Carbon	1	
R211	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R212	ERD25TJ682	68KΩ, ½Watt, ±5%, Carbon	1	
R213	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon	1	
R214	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R215	ERD25TJ680	680Ω, ½Watt, ±5%, Carbon	1	
R216	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R217	ERD25TJ681	680Ω, ½Watt, ±5%, Carbon	1	
R218	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon	1	
R219	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon	1	
R220	ERD25TJ331	330Ω, ½Watt, ±5%, Carbon	1	
R221	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon	1	
R222	ERD25TJ331	330Ω, ½Watt, ±5%, Carbon	1	
R223	ERD25TJ221	220Ω, ½Watt, ±5%, Carbon	1	
R224	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R225	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R226	ERD25TJ470	470Ω, ½Watt, ±5%, Carbon	1	
R227	ERD25TJ221	220Ω, ½Watt, ±5%, Carbon	1	
R228	ERD25TJ332	33KΩ, ½Watt, ±5%, Carbon	1	
R229	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R230	ERD25TJ681	680Ω, ½Watt, ±5%, Carbon	1	
R231	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R232	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R233	ERD25TJ152	1.5KΩ, ½Watt, ±5%, Carbon	1	
R234	ERD25TJ681	680Ω, ½Watt, ±5%, Carbon	1	
R235	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon	1	
R236	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R237	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R238	ERD25TJ681	680Ω, ½Watt, ±5%, Carbon	1	
R239	ERD25TJ333	330Ω, ½Watt, ±5%, Carbon	1	
R240	ERD25TJ103	330Ω, ½Watt, ±5%, Carbon	1	
R241	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R242	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R243	ERD25TJ681	680Ω, ½Watt, ±5%, Carbon	1	
R244	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R245	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R246	ERD25TJ471	470Ω, ½Watt, ±5%, Carbon	1	
R248	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon	1	
R249	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon	1	
R250	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon	1	
R251	ERD25TJ382	3.9KΩ, ½Watt, ±5%, Carbon	1	
R252	ERD25TJ682	6.8KΩ, ½Watt, ±5%, Carbon	1	
R254	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon	1	
R255	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R256	ERD25TJ474	470KΩ, ½Watt, ±5%, Carbon	1	
R257	ERD25TJ474	470KΩ, ½Watt, ±5%, Carbon	1	
R258	ERD25TJ02	10Ω, ½Watt, ±5%, Carbon	1	
R259	ERD25TJ240	240Ω, ½Watt, ±5%, Carbon	1	
R261	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon	1	
R262	ERD25TJ683	66KΩ, ½Watt, ±5%, Carbon	1	
R263	ERD25TJ822	8.2KΩ, ½Watt, ±5%, Carbon	1	
R265	ERD25TJ473	47KΩ, ½Watt, ±5%, Carbon	1	
R267	ERD25TJ332	33KΩ, ½Watt, ±5%, Carbon	1	
R268	ERD25TJ684	680KΩ, ½Watt, ±5%, Carbon	1	
R269	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon	1	
R270	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon	1	
R271	ERD25TJ224	220KΩ, ½Watt, ±5%, Carbon	1	
R272	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R273	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon	1	
R275	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R276	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon	1	
R277	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon	1	
R278	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon	1	
R279	ERD25TJ153	15KΩ, ½Watt, ±5%, Carbon	1	
R280	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon	1	
R281	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R301	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R302	ERD25TJ332	330KΩ, ½Watt, ±5%, Carbon	1	
R303	ERD25TJ334	470Ω, ½Watt, ±5%, Carbon	1	
R304	ERD25TJ471	3.3KΩ, ½Watt, ±5%, Carbon	1	
R305	ERD25TJ332	1KΩ, ½Watt, ±5%, Carbon	1	
R307	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon	1	
R308	ERD25TJ102	1.5KΩ, ½Watt, ±5%, Carbon	1	
R309	ERD25TJ152	680Ω, ½Watt, ±5%, Carbon	1	
R311	ERD25TJ681	2.2KΩ, ½Watt, ±5%, Carbon	1	
R312	ERD25TJ222	1KΩ, ½Watt, ±5%, Carbon	1	
R314	ERD25TJ102	100KΩ, ½Watt, ±5%, Carbon	1	
R316	ERD25TJ471	470Ω, ½Watt, ±5%, Carbon	1	
R317	ERD25TJ683	68KΩ, ½Watt, ±5%, Carbon	1	
R319	ERD25TJ224	220KΩ, ½Watt, ±5%, Carbon	1	
R320	ERD25TJ562	5.6KΩ, ½Watt, ±5%, Carbon	1	
R321	ERD25TJ333	33KΩ, ½Watt, ±5%, Carbon	1	
R330	ERD25TJ473	470Ω, ½Watt, ±5%, Carbon	1	
R331	ERD25TJ473	47KΩ, ½Watt, ±5%, Carbon	1	
R505	ERC12GK103	10KΩ, ½Watt, ±10%, Solid	1	
R506	ERC12GK103	10KΩ, ½Watt, ±10%, Solid	1	
R507	ERC12G3M35	3.3MΩ, ½Watt, ±20%, Solid	1	
R508	ERX2ANJ3R3	3.3Ω, 2Watt, ±5%, Metal Oxide	1	

**CAPACITORS**

Ref. No.	Part No.	Part Name & Description	Part Set	Remarks
C2	FCEA16V10	10μF, 16V, Electrolytic	1	
C3	RCQ805182JZ	1500PF, 50WV, ±5%, Styrol	1	
C4	RCM3005181JH	180PF, 50WV, ±5%, Mica	1	
C5	RCM3005101JH	100PF, 50WV, ±5%, Mica	1	
C6	RCM3005890JH	82PF, 50WV, ±5%, Mica	1	
C7	RCM3005680JH	68PF, 50WV, ±5%, Mica	1	
C8	RCM3005660JH	56PF, 50WV, ±5%, Mica	1	
C9	RCM3005600JH	47PF, 50WV, ±5%, Mica	1	
C19	ECOD1H000C	75PF, 50WV, ±0.5%, Ceramic	1	
C20	ECOD1H000C	56PF, 50WV, ±0.25%, Ceramic	1	
C21	ECCK1D100KMD	10PF, 50WV, ±10%, Ceramic	1	
C23	ECCK1D100KMD	0.001μF, 50WV, ±20%, Ceramic	1	
C24	ECCK1D100KMD	0.001μF, 50WV, ±20%, Ceramic	1	

Ref. No.	Part No.	Part Name & Description	Part No.	Ref. No.	Part No.	Part Name & Description	Part No.	Per Set	Remarks
C25	ECKD1H2535P	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECCD1H220KC	C85	ECCD1H220KC	22PF, 50WV $\pm$ 10%, Ceramic		1	
C26	ECKD1H2235P	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H035F	C96	ECKD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C28	ECKD1H270KC	27PF, 50WV $\pm$ 10%, Ceramic	ECEA16V470	C97	ECEA16V470	470 $\mu$ F, 16WV, Electrolytic		1	
C29	ECCD1H330KC	33PF, 50WV $\pm$ 10%, Ceramic	ECKD1H035F	C98	ECKD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C30	ECCD1H330KC	33PF, 50WV $\pm$ 10%, Ceramic	ECKD1H035M	C99	ECKD1H035M	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C31	ECCD1H330KC	33PF, 50WV $\pm$ 10%, Ceramic	ECCD1H000K	C100	ECCD1H000K	10PF, 50WV $\pm$ 10%, Ceramic		1	
C32	ECCD1H470KC	47PF, 50WV $\pm$ 10%, Ceramic	ECCD1H040C	C102	ECCD1H040C	4PF, 50WV $\pm$ 0.25PF, Ceramic		1	
C40	ECCMS05152JZ	1500PF, 50PF $\pm$ 5%, Styrol	ECCD1H102KM	C103	ECCD1H102KM	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic		1	
C41	ECCMS05181JH	180PF, 50WV $\pm$ 5%, Mica	ECCD1H120KC	C106	ECCD1H120KC	12PF, 50WV $\pm$ 10%, Ceramic		1	
C42	ECCMS05121JH	120PF, 50WV $\pm$ 5%, Mica	ECCD1H103FF	C107	ECCD1H103FF	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C43	ECCMS056820JH	82PF, 50WV $\pm$ 5%, Mica	ECCD1H103MD	C109	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic		1	
C44	ECCMS05680JH	68PF, 50WV $\pm$ 5%, Mica	ECCMS05620JH	C111	ECCMS05620JH	82PF, 50WV $\pm$ 5%, Mica		1	
C45	ECCMS056560JH	56PF, 50WV $\pm$ 5%, Mica	ECCMS05181JH	C112	ECCMS05181JH	180PF, 50WV $\pm$ 5%, Mica		1	
C46	ECCMS05470JH	47PF, 50WV $\pm$ 5%, Mica	ECCD1H222MD	C113	ECCD1H222MD	0.0022 $\mu$ F, 50WV $\pm$ 20%, Ceramic		1	
C47	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECCD1H101K	C114	ECCD1H101K	100PF, 50WV $\pm$ 10%, Ceramic		1	
C48	ECCD1H2235P	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H2235P	C115	ECKD1H2235P	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C49	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECCD1H470KC	C116	ECCD1H470KC	47PF, 50WV $\pm$ 10%, Ceramic		1	
C50	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECKD1H2235F	C117	ECKD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C51	ECCD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECCD1H030C	C118	ECCD1H030C	3PF, 50WV $\pm$ 0.25PF, Ceramic		1	
C52	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECCD1H160KC	C119	ECCD1H160KC	18PF, 50WV $\pm$ 10%, Ceramic		1	
C53	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECCD1H050CC	C120	ECCD1H050CC	5PF, 50WV $\pm$ 0.25PF, Ceramic		1	
C54	ECCD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECEA10V100	C121	ECEA10V100	100 $\mu$ F, 10WV, Electrolytic		1	
C55	ECCD1H120KC	12PF, 50WV $\pm$ 10%, Ceramic	ECKD1H223MD	C122	ECKD1H223MD	0.022 $\mu$ F, 50WV $\pm$ 20%, Ceramic		1	
C56	ECKD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECKD1H103MD	C123	ECKD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic		1	
C57	ECKD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECKD1H2235F	C124	ECKD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C58	ECCD1H3R5C	3.5PF, 50WV $\pm$ 0.25PF, Ceramic	ECKD1H2235F	C126	ECKD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C59	ECCD1H220KC	22PF, 50WV $\pm$ 10%, Ceramic	ECKD1H2235F	C127	ECKD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C61	ECCD1H150KC	15PF, 50WV $\pm$ 10%, Ceramic	ECCFV473MD	C165	ECCFV473MD	0.047 $\mu$ F, 25WV $\pm$ 20%, Semi-Conductor		1	
C62	ECCD1H070DC	7PF, 50WV $\pm$ 0.5PF, Ceramic	ECEA6V220	C166	ECEA6V220	220 $\mu$ F, 6.3WV, Electrolytic		1	
C63	ECCD1H030C	3PF, 50WV $\pm$ 0.25PF, Ceramic	ECEA16V470	C167	ECEA16V470	470 $\mu$ F, 16WV, Electrolytic		1	
C64	ECCMS05101JH	100PF, 50WV $\pm$ 5%, Mica	ECCFV473MD	C168	ECCFV473MD	0.047 $\mu$ F, 25WV $\pm$ 20%, Semi-Conductor		1	
C65	ECCMS05680JH	68PF, 50WV $\pm$ 5%, Mica	ECCS1271JZ	C169	ECCS1271JZ	270PF, 50WV $\pm$ 5%, Styrol		1	
C66	ECCD1H390KC	39PF, 50WV $\pm$ 10%, Ceramic	ECCD1H680K	C170	ECCD1H680K	68PF, 50WV $\pm$ 10%, Ceramic		1	
C67	ECKD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECEA16V33	C172	ECEA16V33	33 $\mu$ F, 16WV, Electrolytic		1	
C68	ECKD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECCFV333MD	C176	ECCFV333MD	0.035 $\mu$ F, 25WV $\pm$ 20%, Semi-Conductor		1	
C69	ECKD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H232MD	C177	ECKD1H232MD	0.022 $\mu$ F, 50WV $\pm$ 20%, Ceramic		1	
C71	ECCD1H470KC	47PF, 50WV $\pm$ 10%, Ceramic	ECCD1H181K	C178	ECCD1H181K	180PF, 50WV $\pm$ 10%, Ceramic		1	
C72	ECCD1H470KC	47PF, 50WV $\pm$ 10%, Ceramic	ECCS05221JZ	C202	ECCS05221JZ	220PF, 50WV $\pm$ 5%, Styrol		1	
C73	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 20%, Ceramic	ECCS05221JZ	C203	ECCS05221JZ	220PF, 50WV $\pm$ 5%, Styrol		1	
C74	ECCD1H330KC	33PF, 50WV $\pm$ 10%, Ceramic	ECEA6V1	C204	ECEA6V1	1 $\mu$ F, 50WV, Electrolytic		1	
C75	ECCD1H103PF	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H035F	C205	ECKD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C76	ECCD1H103PF	0.01 $\mu$ F, 50WV $\pm$ 5%, Ceramic	ECCD1H70KC	C206	ECCD1H70KC	27PF, 50WV $\pm$ 10%, Ceramic		1	
C77	ECCD1H103PF	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECCD1H100KC	C208	ECCD1H100KC	10PF, 50WV $\pm$ 10%, Ceramic		1	
C78	ECCMS05101JH	100PF, 50WV $\pm$ 5%, Mica	ECCD1H020C	C209	ECCD1H020C	2PF, 50WV $\pm$ 0.25PF, Ceramic		1	
C79	ECCD1H035F	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H020C	C210	ECKD1H020C	0.001 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C80	ECCD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H020C	C211	ECKD1H020C	0.001 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C81	ECCD1H330KC	33PF, 50WV $\pm$ 10%, Ceramic	ECCD1H2235F	C212	ECCD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C82	ECCMS05680JH	68PF, 50WV $\pm$ 5%, Mica	ECCMS05122JZ	C215	ECCMS05122JZ	1200PF, 50WV $\pm$ 5%, Styrol		1	
C83	ECCMS05680JH	68PF, 50WV $\pm$ 5%, Mica	ECCMS05181JH	C215	ECCMS05181JH	180PF, 50WV $\pm$ 5%, Mica		1	
C84	ECCMS05121JH	120PF, 50WV $\pm$ 5%, Mica	ECCD1H2235F	C220	ECCD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C85	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECKD1H2235F	C223	ECKD1H2235F	0.022 $\mu$ F, 50WV $\pm$ 10%, Ceramic		1	
C86	ECCD1H103MD	18PF, 50WV $\pm$ 10%, Ceramic	ECCD1H120KC	C224	ECCD1H120KC	12PF, 50WV $\pm$ 10%, Ceramic		1	
C87	ECCD1H390KC	39PF, 50WV $\pm$ 10%, Ceramic	ECCMS05131JH	C225	ECCMS05131JH	130PF, 50WV $\pm$ 10%, Mica		1	
C91	ECCD1H2R5C	2.5PF, 50WV $\pm$ 0.25PF, Ceramic	ECCS05392KZ	C226	ECCS05392KZ	3900PF, 50WV $\pm$ 10%, Styrol		1	
C92	ECCD1H150KC	15PF, 50WV $\pm$ 10%, Ceramic	ECCD1H180KC	C226	ECCD1H180KC	18PF, 50WV $\pm$ 10%, Ceramic		1	
C93	ECCD1H103MD	0.01 $\mu$ F, 50WV $\pm$ 10%, Ceramic	ECCD1H390KC	C231	ECCD1H390KC	39PF, 50WV $\pm$ 10%, Ceramic		1	
C94	ECCD1H120KC	12PF, 50WV $\pm$ 10%, Ceramic	ECCD1H030C						

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C233	ECGD1H202C	2PF, 50WV±10% Ceramic	1	
C234	ECGD1H100KC	10PF, 50WV±10%, Ceramic	1	
C235	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C236	ECFA50Z1R1	0.1µF, 50WV, Electrolytic	1	
C237	ECEA10V100	100µF, 10WV, Electrolytic	1	
C238	ECGD1H070DC	7PF, 50WV±0.5PF, Ceramic	1	
C239	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C240	ECGS087511Z	750PF, 50WV±5%, Styrol	1	
C241	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C242	ECGD1H0506C	5PF, 50WV±0.25PF, Ceramic	1	
C243	ECGD1H02PF	0.01µF, 50WV±5%, Ceramic	1	
C244	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C245	ECGD1H02MD	0.001µF, 50WV±20%, Ceramic	1	
C246	ECGD1H103MD	0.01µF, 50WV±20%, Ceramic	1	
C247	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C248	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C249	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C250	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C251	ECGD1H270KC	27PF, 50WV±10%, Ceramic	1	
C252	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C253	ECEA16V10	10µF, 16WV, Electrolytic	1	
C254	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C255	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C256	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C257	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C258	ECEA10V47	47µF, 10WV, Electrolytic	1	
C259	ECGD1H100KC	10PF, 50WV±10%, Ceramic	1	
C260	ECEA35V47R	4.7µF, 35WV, Electrolytic	1	
C261	ECGD1H390KC	39PF, 50WV±10%, Ceramic	1	
C262	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C263	ECEA16V33	33PF, 16WV, Electrolytic	1	
C264	ECGS054711Z	47PF, 50WV±5%, Styrol	1	
C265	ECGD1H470KC	47PF, 50WV±10%, Ceramic	1	
C266	ECGD1H120KC	12PF, 50WV±10%, Ceramic	1	
C267	ECEA16V10	10µF, 16WV, Electrolytic	1	
C268	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C269	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C270	ECGD1H472MD	0.0047µF, 50WV±20%, Ceramic	1	
C271	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C272	ECFVD103MD	0.01µF, 25WV±20%, Seal-Conductor	1	
C273	ECMS05121JH	120PF, 50WV±5%, Mica	1	
C274	ECMS05161JH	160PF, 50WV±5%, Mica	1	
C275	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C276	ECEA10V100	100µF, 10WV, Electrolytic	1	
C277	ECGD1H682MD	0.0068µF, 50WV±20%, Ceramic	1	
C278	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C279	ECGD1H103MD	0.01µF, 50WV±20%, Ceramic	1	
C280	ECGD1H103MD	0.01µF, 50WV±20%, Ceramic	1	
C281	ECEA35V47R	4.7µF, 35WV, Electrolytic	1	
C282	ECGD1H180KC	18PF, 50WV±10%, Ceramic	1	
C283	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C284	ECGD1H682MD	0.0068µF, 50WV±20%, Ceramic	1	
C285	ECEA35V47R	4.7µF, 35WV, Electrolytic	1	
C286	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C287	ECGD1H470KC	47PF, 50WV±10%, Ceramic	1	
C288	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C289	ECEA10V100	100µF, 10WV, Electrolytic	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C290	ECGD1H270KC	27PF, 50WV±10%, Ceramic	1	
C291	ECEA50V2R2	2.2PF, 50WV, Electrolytic	1	
C292	ECGD1H223PF	0.022µF, 50WV±10%, Ceramic	1	
C293	ECGD1H330KC	33PF, 50WV±10%, Ceramic	1	
C294	0.022µF, 50WV±10%, Ceramic		1	
C295	ECGD1H103MD	0.01µF, 50WV±20%, Ceramic	1	
C296	ECGD1H333K	330PF, 50WV±10%, Ceramic	1	
C297	ECEA50Z1R1	0.1µF, 50WV, Electrolytic	1	
C301	ECEA16V10	10µF, 16WV, Electrolytic	1	
C302	ECGD1H333K	330PF, 50WV±10%, Ceramic	1	
C303	ECEA50V2R2	2.2PF, 50WV, Electrolytic	1	
C304	ECFTD223MD	0.022µF, 25WV±20%, Seal-Conductor	1	
C305	ECGD1H333MD	0.0033µF, 50WV±20%, Ceramic	1	
C306	ECGD1H333MD	0.0033µF, 50WV±20%, Ceramic	1	
C307	ECEA50Z1R2	0.22µF, 50WV, Electrolytic	1	
C308	ECFA10V100	100µF, 10WV, Electrolytic	1	
C309	ECGD1H682MD	0.0068µF, 50WV±20%, Ceramic	1	
C310	ECEA50Z1R2	0.22µF, 50WV, Electrolytic	1	
C311	ECEA50Z1R2	0.22µF, 50WV, Electrolytic	1	
C312	ECEA35V47R	4.7µF, 35WV, Electrolytic	1	
C313	ECFTD103MD	0.01µF, 25WV±20%, Seal-Conductor	1	
C314	ECEA16V220	220µF, 16WV, Electrolytic	1	
C315	ECEA16V10	10µF, 16WV, Electrolytic	1	
C316	ECBA16V3500	3500µF, 16WV, Electrolytic	1	
C317	ECGD1H220KC	22PF, 50WV±10%, Ceramic	1	
C318	ECFVD104MD	0.1µF, 25WV±20%, Seal-Conductor	1	
C319	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C320	ECGD1H103PF	0.01µF, 50WV±10%, Ceramic	1	
C321	ECEA16V33	33µF, 16WV, Electrolytic	1	
C322	ECEA10V47	47µF, 10WV, Electrolytic	1	
C323	ECGD1H102MD	0.001µF, 50WV±50%, Ceramic	1	
C324	ECEA16V470	47µF, 16WV, Electrolytic	1	
C325	ECEA50V1	1µF, 50WV, Electrolytic	1	
C326	ECEA16V10	10µF, 16WV, Electrolytic	1	
C327	ECGD1H333MD	0.0033µF, 50WV±20%, Ceramic	1	
C328	ECGD1H333MD	0.0033µF, 50WV±20%, Ceramic	1	
C329	ECEA16V10	10µF, 16WV, Electrolytic	1	
C331	ECGD1H121K	2201PF, 50WV±10%, Ceramic	1	
C332	ECGD1H102MD	0.001µF, 50WV±20%, Ceramic	1	
C333	ECGD1H102MD	0.001µF, 50WV±20%, Ceramic	1	
C334	ECGD1H103MD	0.01µF, 50WV±20%, Ceramic	1	
C335	ECGD1H070DC	7PF, 50WV±0.5PF, Ceramic	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
CA1	RYPP4800C	Front Panel Assembly	1	
CA2	RYEJX4800N	Indicating Plate Assembly	1	
CA3	RWBJX4800N	Battery Case Assembly	1	
CA4	RJCS05Z	Terminal Spring, Battery ⊖ Side	4	
CA5	RJCS98Z	Connecting Pipe, Terminal Spring	4	
CA6	RJCL11A	Terminal, Battery ⊕ Side	4	
CA7	RYTJX4800N	Knob Assembly, SW2—B Tuning	1	
CA8	RYTJX4800N	Knob Assembly, SW1/MW/FM Tuning	1	
CA9	RFK5076Z	Cabinet Cover	1	
CA10	RKH5076Z	Handle, Cabinet	2	
CA11	RXJ125Z	Cover, Handle	4	
CA12	RHG886Z	Rubber Cushion, Speaker	2	
CA13	RBS1032K	Knob, Band Selector	1	
CA14	RBE15Y	Knob, Power	1	
CA15	RBN361Z	Knob, Volume, Bass, Treble, BFO, Pitch, Aft. Trim & AM RF Gain	6	

**CABINET**

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
CA11	RKU267ZS	Rear Panel	1	○
CA12	RGT576V	Name Plate	1	○
CA13	RHG309C	Rubber Leg (Large), Cabinet	2	
CA14	RHG325Z	Rubber Leg (Small), Cabinet	2	
CA15	RKK92Z	Cover, Battery Compartment	2	
CA16	RJF1065Z	Terminal, EXT. Ant.	6	
CA17	RJT2002Z	Terminal Board, EXT. Ant.	3	
CA18	RJS258V-R	Socket, SW Ant.	1	
CA19	SMA205	Holder, Core Antenna	1	○
CA20	SMA207	Holder, Core Antenna	1	○
	RBE4Y	Knob, SW2-8 Cal	1	○
	RBE5005A	Screw, Knob M'tg	1	
CA21	XSB3+8BVS	Screw, Cabinet Cover M'tg	15	
<b>CHASSIS</b>				
CH1	RS69ZS	Dial Mechanism Assembly	1	○
CH2	ESRK68S1	Shaft Switch (SW2-8)	1	○
CH3	RMC171V	Shield Plate, IC1	1	○
CH4	RBE37Z	Joint, Tuning Capacitor	1	○
CH5	RDE75ZS	Joint, Switch Shaft	1	○
	XXAR3H6S	Screw, Joint, M'tg	8	
CH6	RJ487V-C	Jack, Rec. Out & EXT. EP. SP.	2	
CH7	RJJ482Z-C	Jack, Aux	1	
CH8	RJ1104Z-C	Jack, DC IN	1	
CH9	XAM848S100A	Pilot Lamp, 12V, 40mA	2	○
CH10	XAM848S250A	Pilot Lamp, 12V, 40mA	1	○
CH11	EDT0091Z	Shaft, Tuning Scale	1	○
CH12	RUM40Z	Bracket, Dial Scale	2	○
CH13	RDR20-3	Bracket, Dial Scale	2	○
CH14	RDR20-5	Pulley (Small), Dial	7	○
	RDR25-1	Pulley (Large), Dial	4	
CH15	RNV150-2	Washer, Pulley	11	○
CH16	RDF603Z-K	Shaft, SW2-8 Switch	1	○
CH17	RSAG617Z-K	Meter, Tune/Battery	1	○
CH18	BSA20813B	Shaft, Switch	1	○
CH19	RKD458X	Wire, Switch	1	○
CH20	RKD455X	Scale, SW2-8	1	○
CH21	RDP170Z	Scale, SW1/MW/FM	1	○
CH22	RDD4012Z	Pointer, Dial	2	○
CH23	RDD441Z	Drum, Dial (SW1/MW/FM)	1	○
CH24	RDD205Z	Drum, Dial (SW2-8)	1	○
CH25	RDS4060Z	Cord, Dial	1	○
CH26	RDS5090Z	Spring, Drum (RDD4012Z)	1	○
	RBE17Z	Spring, Drum (RDD441Z)	1	○
CH27	XNS9FZ	Knob, Switch	6	○
	XNS8	Nut, SW Switch Shaft & Ant. Trim. M'tg	2	○
	XNS8	Nut, Volume, Bass, Treble & etc. M'tg	7	○
<b>ACCESSORIES</b>				
A1	RJA22Z	Power Cord, AC	1	○
A2	UM-1DEF	Battery	8	○
A3	RJ P97Z	Plug, SW2-8 Antenna	1	○
A4	RSA205Z-M	FM Antenna	1	○

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
A5	XEH15A1-B	Magnetic Earphone	1	
A6	RJP169Z-E	Plug, Headphone	1	
A7	WRLO000bb	Lead Wire, Antenna	1	○
<b>PACKING MATERIALS</b>				
P1	RPN9237Z	Pad Complete	1	
P2	(Not Available, Order (RPN9237Z)	Pad, Left Side	(1)	
		Pad, Right Side	(1)	
P3	RPQ1636Z	Packing Case	1	○
P4	RQX6167Z	Instruction Book	1	○
Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
DiG 1, 2, 3, 4, 5	RADGL9P034	When replacing the LED, Please be sure to use the LED of the same rank as is used in the Unit.	5	○
	RADGL9P035			
	RADGL9P036			
	RADGL9P037			
	RADGL9P038			