

ICF-450L

SERVICE MANUAL

AEP Model
UK Model

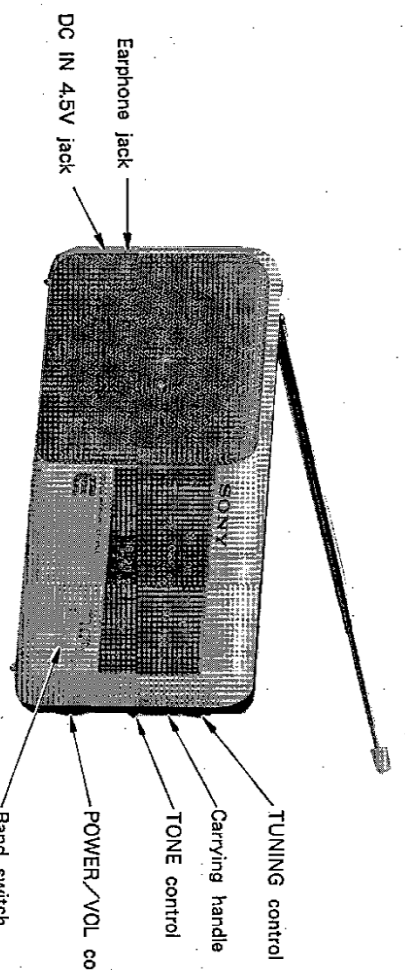


PHOTO: ICF-450L UK Model (WHITE Type)
CABINET COLOR: WHITE, BLACK, RED.

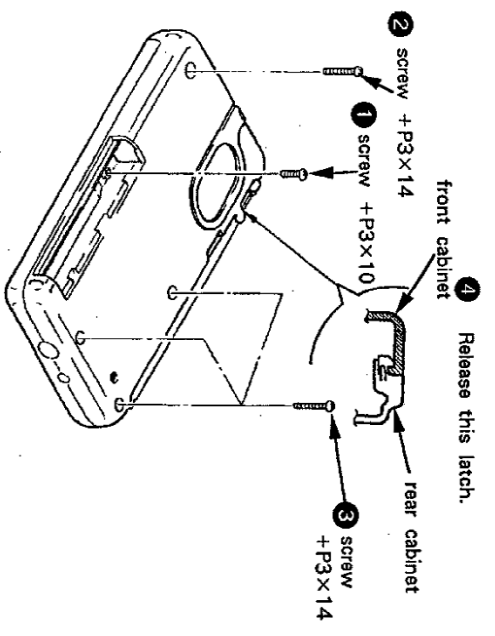
SPECIFICATIONS

- Frequency range**
FM: 87.6 - 107.5 MHz
MW: 531 - 1,602 KHz
LW: 153 - 255 KHz
- Antennas**
FM: Telescopic antenna
MW/LW: Built-in ferrite bar antenna
- Speaker**
Approx: 7.7 cm (3 inches) dia.
- Power output**
Earphone jack (mini/jack)
200 mW (at 10% harmonic distortion)
- Power requirements**
4.5 V DC
Three R6 (size AA) batteries
DC IN 4.5 V Jack accepts:
Sony AC-D3 AC power adaptor (optional) available in AEP and French models for use on 220 V AC, 50 Hz
Sony AC-D3 AC power adaptor (optional) available in UK model for use on 240 V AC, 50 Hz
Approx: 35 hours with Sony batteries SUM-3 (NS)
Approx: 196 x 95.5 x 39.5 mm (w/h/d)
(7³/₄ x 3³/₈ x 1⁹/₁₆ inches)
Incl. projecting parts and controls with the carrying handle pushed in
Approx: 410 g (14 oz), incl. batteries
- Battery life**
- Dimensions**
- Weight**

SECTION 1 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

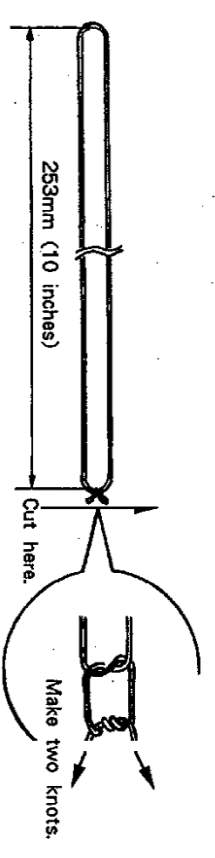
Rear case removal



ICF-450L

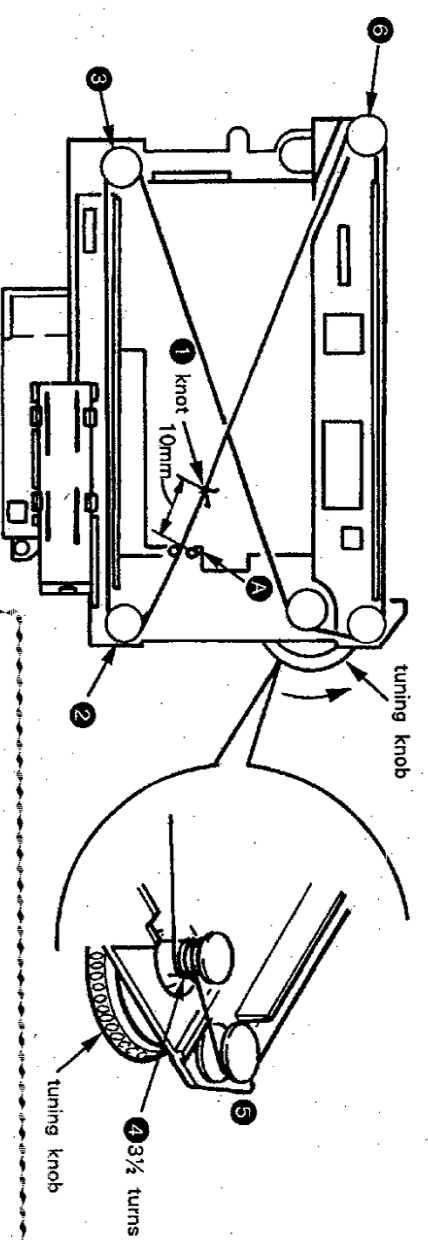
SECTION 2 DIAL CORD STRINGING

2-1. Preparation



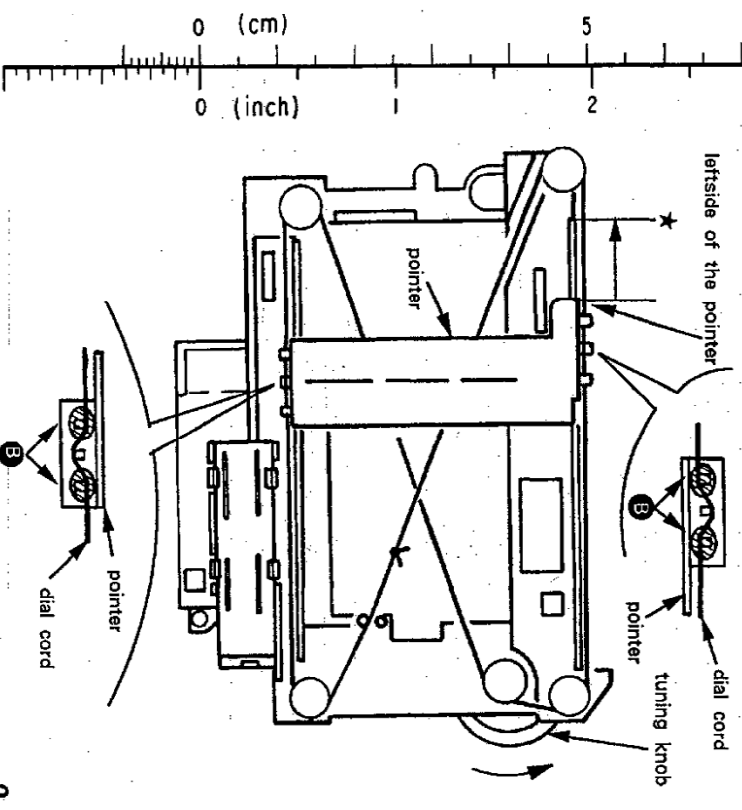
2-2. Stringing

- Turn the tuning knob fully counterclockwise. (frequency: lowest)
- Set a knot to the position 10mm apart from portion A.
- String the dial cord in the numerical order given.

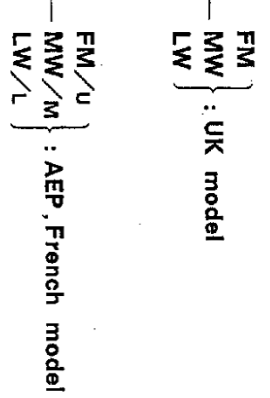


2-3. Dial Pointer Installation

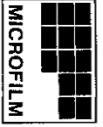
- Turn the tuning knob fully counterclockwise.
- Install the pointer to the dial cord.
- Set the leftside of the pointer to * mark.
- Secure the portion B of the pointer with locking compound.



MODEL IDENTIFICATION -Dial Scale-



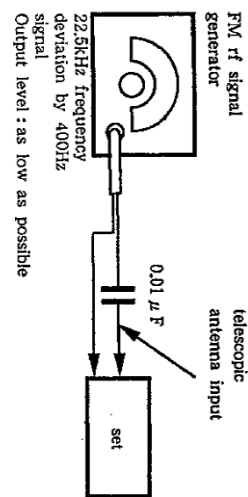
FM/MW/LW 3BAND RECEIVER SONY



SECTION 3 ELECTRICAL ADJUSTMENTS

FM Section

BAND SWITCH : FM

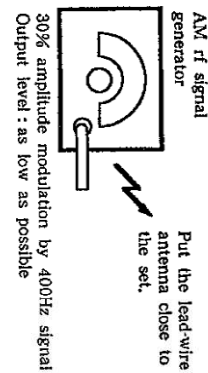


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	86.5MHz
CT8	109.5MHz
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	86.5MHz
CT2	109.5MHz

MW/LW Section

BAND SWITCH : MW/LW



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

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5	520KHz
CT4	1,650KHz
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2-1	620KHz
CT1	1,400KHz

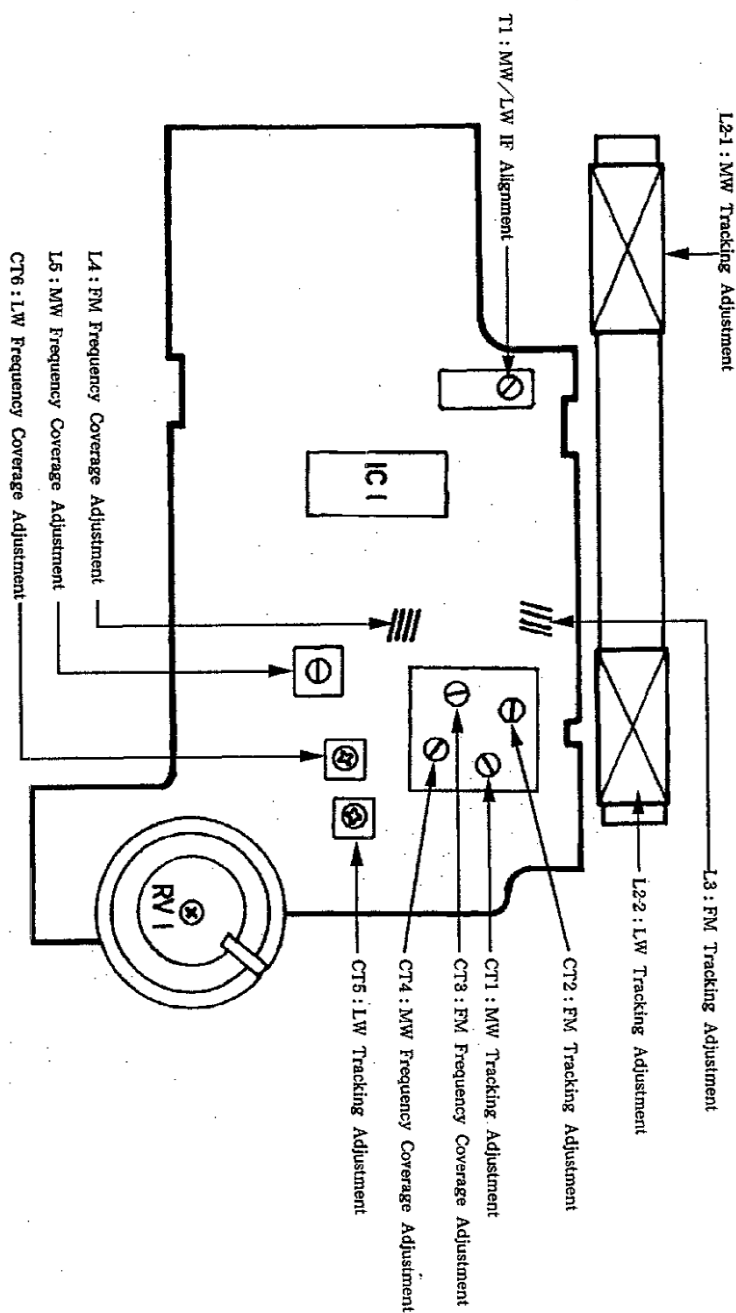
MW/LW IF ALIGNMENT	
Adjust for a maximum reading on VTVM.	
TI	455KHz

Note :
LW adjustments should be made after making MW adjustment.

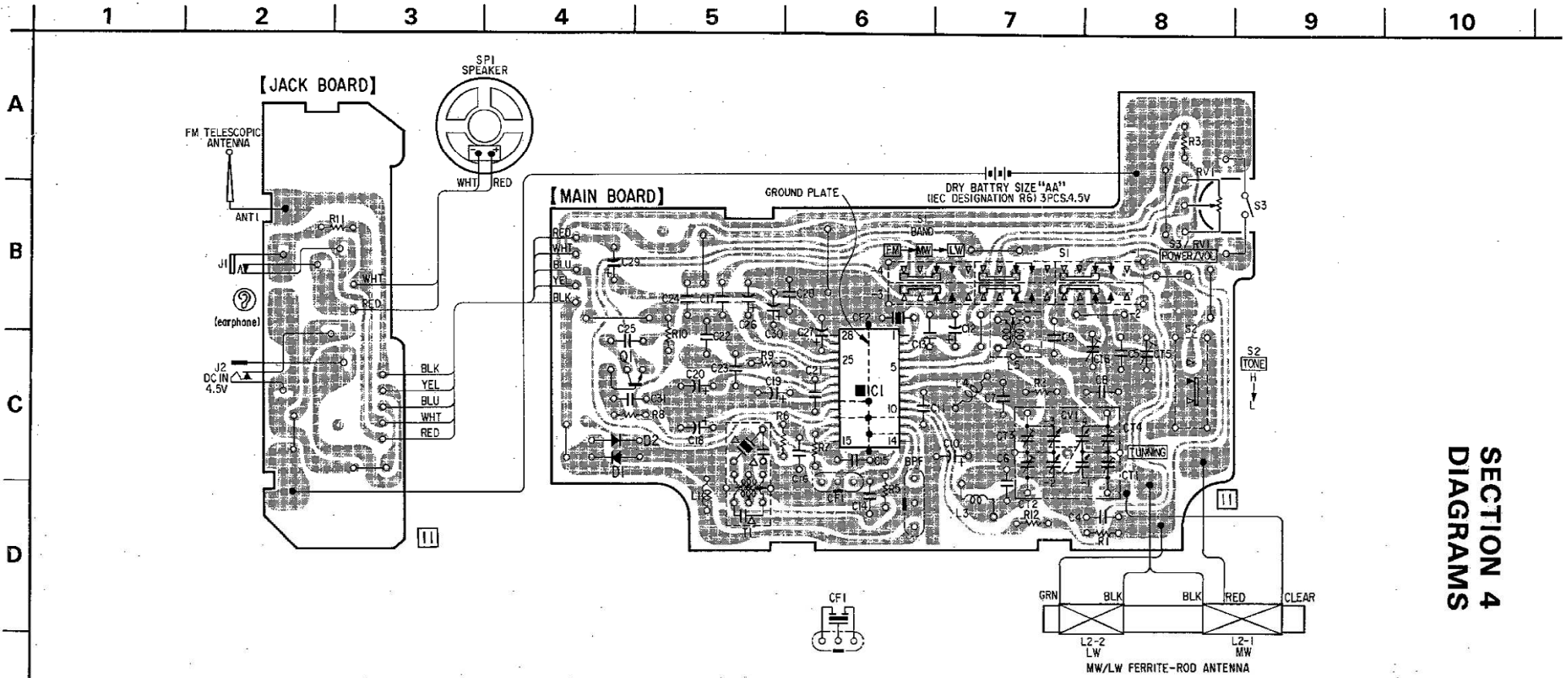
LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT6	145KHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2-2	160KHz
CTS	260KHz

Adjustment Parts Location Diagrams (main board)



4-1. PRINTED WIRING BOARDS



SECTION 4
DIAGRAMS

Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : parts mounted on the conductor side.
- : indicates side identified with part number.

Note on replacing ceramic filter (CF1 and CF2).

Two ceramic filters which have the same center frequency are included in the replaceable part of ceramic filters (Part No. 1-567-097-61).

- For CF1 (FM IF) 3 leads
- For CF2 (FM discriminator) 2 leads

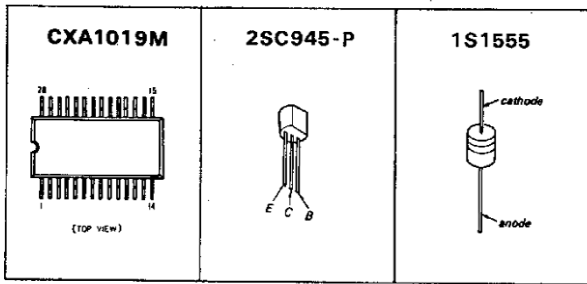
When replacing CF1 or CF2, be sure to replace both of them with new parts.

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μF 50VV 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.
- Switch

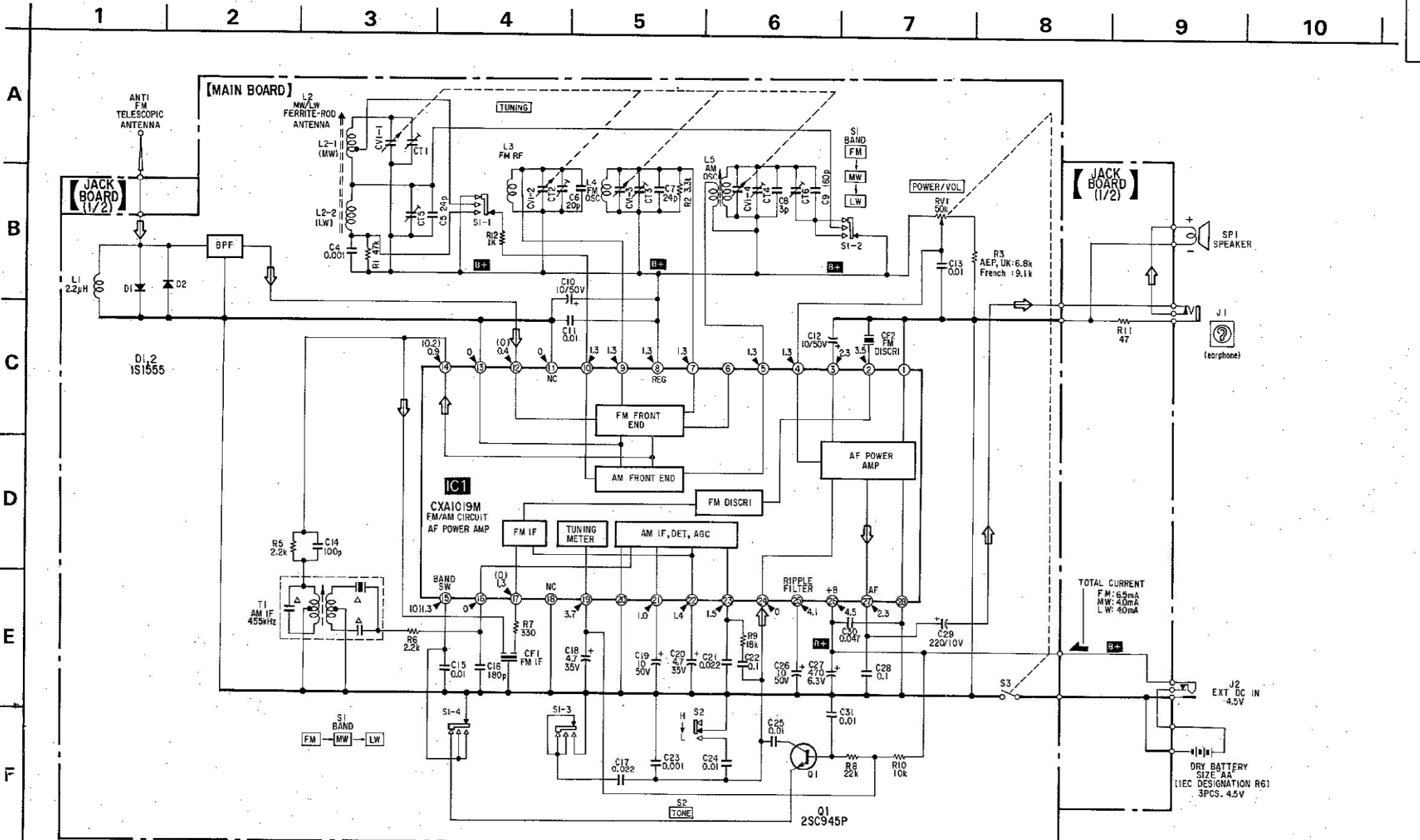
Ref. No.	Switch	Position
S1	BAND	FM
S2	tone	H
S3	POWER	OFF

4-2. SEMICONDUCTOR LEAD LAYOUTS



- **B+** : B+ Line
- Power voltage is dc 4.5V and fed with regulated dc power supply from external power voltage jack.
- Voltage are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- () : MW/LW
- Voltages are taken with a VOM (50 k Ω /V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- ⇒ : FM

4-3. SCHEMATIC DIAGRAM



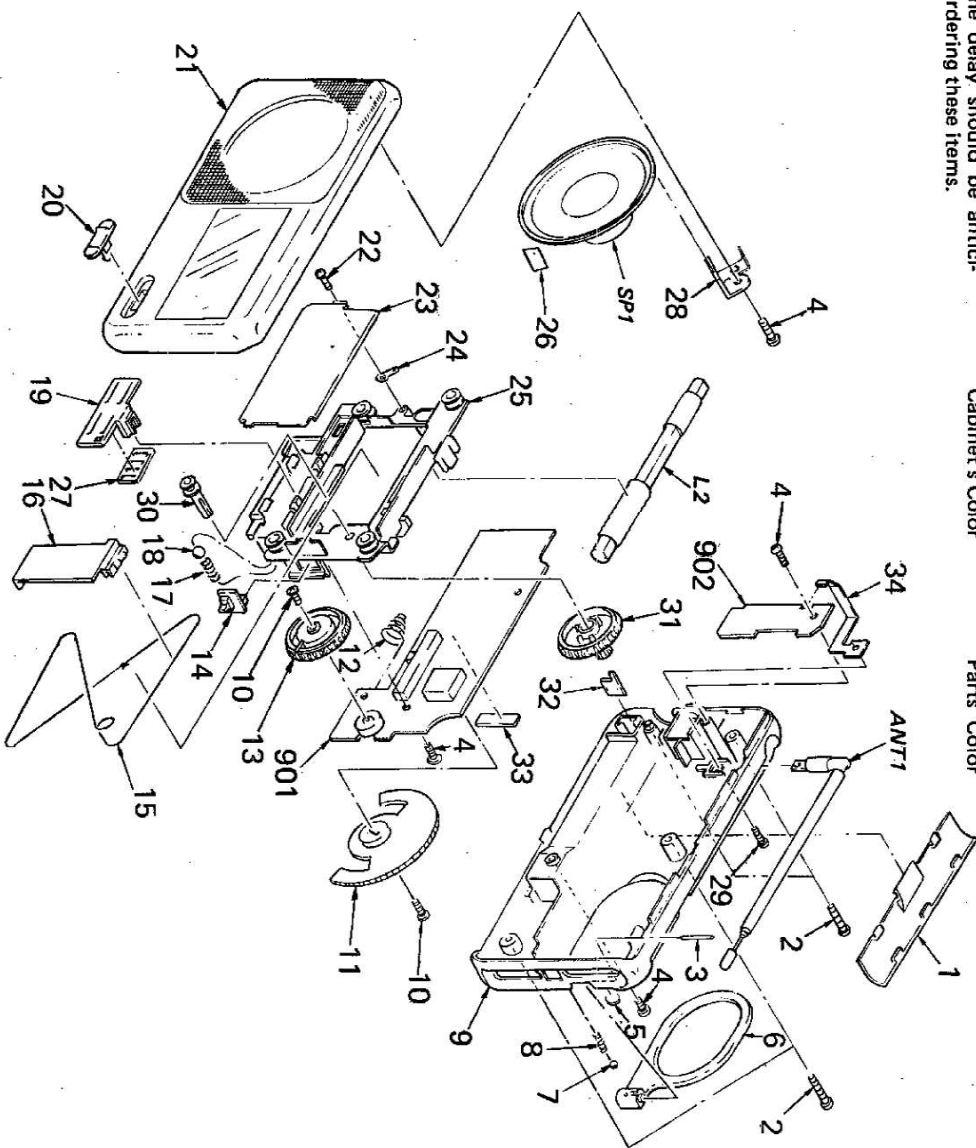
ICF-450L ICF-450L

SECTION 5
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color indication of Appearance Parts Example: (RED)... KNOB, BALANCE (WHITE) Cabinet's Color Parts Color



No.	Part No.	Description	Remarks
1	3-900-008-01	LID, BATTERY CASE	
2	7-685-649-79	SCREW #P 3X14 TYPE2 NON-SLIT	
3	3-900-016-01	SHAFT (HANDLE)	
4	7-685-647-79	SCREW #P 3X10 TYPE2 NON-SLIT	
5	*3-900-022-01	CUSHION, HANDLE	
6	3-900-017-01	HANDLE	
7	7-671-158-01	BALL, STAINLESS (2.5 DIA)	
8	3-900-013-01	SPRING (A)	
9	3-900-011-01	CABINET (REAR)	
10	3-880-990-00	SCREW (1.7X3), FLAT, (+) SPECIAL	
11	*3-900-031-01	GEAR, VC	
12	3-892-818-01	SPRING, BATTERY (-)	
13	X-3900-007-1	KNOB, VOLUME	
14	3-900-029-01	KNOB (TONE)	
15	9-911-825-52	STRING, DIAL	
16	3-900-020-01	(UK)...P.OINTER	
17	3-898-910-01	SPRING, COMPRESSION	
18	7-671-112-11	BALL, STEEL	
19	*3-900-015-01	SLIDER	
20	3-900-014-01	(WHITE)...KNOB (BAND)	
	3-900-014-11	(BLACK)...KNOB (BAND)	
	3-900-014-21	(RED)...KNOB (BAND)	
21	X-3900-009-1	(UK;WHITE)...CABINET, FRONT	
	X-3900-009-2	(UK;BLACK)...CABINET, FRONT	
	X-3900-009-3	(UK;RED)...CABINET, FRONT	
	X-3900-011-1	(AEP,FRENCH;WHITE)...CABINET, FRONT	
	X-3900-011-2	(AEP,FRENCH;BLACK)...CABINET, FRONT	
	X-3900-011-3	(AEP,FRENCH;RED)...CABINET, FRONT	
22	7-685-133-19	SCREW #P 2.6X6 TYPE2 SLIT	
23	*3-900-019-01	PLATE, BACK	
24	7-623-507-01	LUG, 2.6	
25	X-3900-008-1	CASSIS	
26	*3-898-518-01	CUSHION (A)	
27	*3-898-911-01	PLATE, CLICK	
28	3-900-021-01	CLAM, SPEAKER	
29	7-682-547-04	SCREW #B 3X6	
30	*3-900-018-01	SHAFT, TUNING	
31	3-900-032-01	KNOB (TUNE)	
32	3-900-023-01	TERMINAL BOARD, BATTERY (+)	
33	3-892-935-11	PLATE, GROUND	
34	*3-900-028-01	PLATE, CONTACT, ANTENNA	
901	*A-3670-033-A	(AEP,UK)...PC BOARD ASSY, MAIN	
	*A-3670-036-A	(FRENCH)...PC BOARD ASSY, MAIN	
902	*1-626-690-11	PC BOARD, JACK	
ANT1	1-501-362-11	ANTENNA, TELESCOPIC	
BPF	1-235-171-00	FILTER, BAND PASS	
C4	1-161-039-00	CERAMIC	0.001MF
C5	1-102-960-00	CERAMIC	24PF
C6	1-102-958-00	CERAMIC	20PF
C7	1-102-960-00	CERAMIC	24PF
C8	1-162-681-11	CERAMIC	3PF
C9	1-109-628-00	MICA	160PF
C10	1-123-875-11	ELECT	10MF
C11	1-101-004-00	CERAMIC	0.01MF
C12	1-123-875-11	ELECT	10MF
C13	1-101-004-00	CERAMIC	0.01MF
C14	1-102-973-00	CERAMIC	100PF
C15	1-101-004-00	CERAMIC	0.01MF
C16	1-102-976-00	CERAMIC	180PF
C17	1-161-055-00	CERAMIC	0.022MF
C18	1-126-094-11	ELECT	4.7MF
C19	1-123-875-11	ELECT	10MF
C20	1-126-094-11	ELECT	4.7MF
C21	1-161-055-00	CERAMIC	0.022MF
C22	1-162-851-11	CERAMIC	0.1MF
C23	1-161-039-00	CERAMIC	0.001MF
C24	1-161-051-00	CERAMIC	0.01MF
C25	1-161-051-00	CERAMIC	0.01MF
C26	1-123-875-11	ELECT	10MF
C27	1-124-135-00	ELECT	470MF
C28	1-162-851-11	CERAMIC	0.1MF
C29	1-126-176-11	ELECT	220MF
C30	1-161-021-11	CERAMIC	0.047MF
C31	1-101-004-00	CERAMIC	0.01MF
C32	1-567-097-61	FILTER, CERAMIC, 10.7MHZ	(two filters included)
C35	1-141-245-00	CAP, VAR, TRIMMER	
C36	1-141-245-00	CAP, VAR, TRIMMER	
C37	1-151-429-00	CAP, TUNING, POLYETHYLENE	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- 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:
MF: μ F, PF: μ F, F: μ F
RESISTORS
All resistors are in ohms.
F: nonflammable
COILS
MMH: mH, UH: μ H
SEMICONDUCTORS
In each case, U: μ , for example:
UA...: μ A... UPA...: μ PA...
UPC...: μ PC, UPD...: μ PD...

Ref. No.	Part No.	Description	Remarks
D1	8-719-815-55	DIODE 1S1555	
D2	8-719-815-55	DIODE 1S1555	
IC1	8-752-030-15	IC CXA1019M	
J1	1-563-836-21	JACK, EARER PHONE	
J2	1-507-954-11	JACK, EXTERNAL POWER	
L1	1-410-320-11	INDUCTOR 2.2UH	
L2	1-402-382-11	ANTENNA, FERRITE-ROD (L/M/MM)	
L3	1-426-014-00	COIL, FM RF	
L4	1-422-131-00	COIL, FM OSCILLATION	
L5	1-406-028-00	COIL, OSC (L/M/MM)	
Q1	8-729-194-57	TRANSISTOR 2SC945-P	
R1	1-249-437-11	CARBON 47K 5% 1/4W	
R2	1-249-423-11	CARBON 3.3K 5% 1/4W	
R3	1-247-854-11	(FRENCH)...CARBON 9.1K 5% 1/4W	
R3	1-249-427-11	(AEP,UK)...CARBON 6.8K 5% 1/4W	
R5	1-249-421-11	CARBON 2.2K 5% 1/4W	
R6	1-249-421-11	CARBON 2.2K 5% 1/4W	
R7	1-249-411-11	CARBON 330 5% 1/4W	
R8	1-249-433-11	CARBON 22K 5% 1/4W	
R9	1-249-432-11	CARBON 18K 5% 1/4W	
R10	1-249-429-11	CARBON 10K 5% 1/4W	
R11	1-249-401-11	CARBON 47 5% 1/4W	
R12	1-249-417-11	CARBON 1K 5% 1/4W	
R11	1-238-241-11	RES, VAR, CARBON 50K (VOL/POWER)	
S1	1-571-610-11	SWITCH, SLIDE (BAND)	
S2	1-552-370-00	SWITCH, SLIDE (TONE)	
SP1	1-503-684-11	SPEAKER	
T1	1-403-163-00	CERAMIC FILTER (455KHZ)	

ACCESSORY

3-786-151-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/GERM/SPANISH/DUTCH/SWEDISH/ITALIAN/PORTUGUESE)
3-786-151-41	(AEP)...MANUAL, INSTRUCTION