

ICF-C620L

SERVICE MANUAL

AEP Model
UK Model



Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MR-620

SPECIFICATIONS

Radio section

Frequency range :

FM : 87.5 – 108.0 MHz
MW : 530 – 1,605 kHz
LW : 153 – 255 kHz

Tape player section and general

Time display

UK model	12 hour
AEP model	24 hour

Track system : 2 track, 1 channel, monaural

Frequency response : 125 – 10,000 Hz with normal (TYPE I) tapes

Speaker : Approx. 7.7 cm dia. 8 ohms.

Power output :

Radio section : 350 mW (at 10% harmonic distortion)

Player section : 300 mW (at 10% harmonic distortion)

Power requirements :

220 V – 230 V AC, 50 Hz

For the power backup function : 9 V DC, one 6F22 battery

Battery life : Approx. 80 hours (for clock backup), using Sony battery S-006P (U)

Dimensions : Approx. 240 × 124 × 100 mm (w/h/d) incl. projecting parts and controls

Mass : Approx. 870 g not incl. battery

Design and specifications are subject to change without notice.

FEATURES

- High quality sound by tape playback.
- You can choose from 3 different wake-up modes ; tape, radio, and buzzer alarm.
- Power backup to keep the clock during a power interruption with a 6F22 battery (not supplied) installed.

FM/MW/LW CASSETTE PLAYER CLOCK RADIO



SONY®

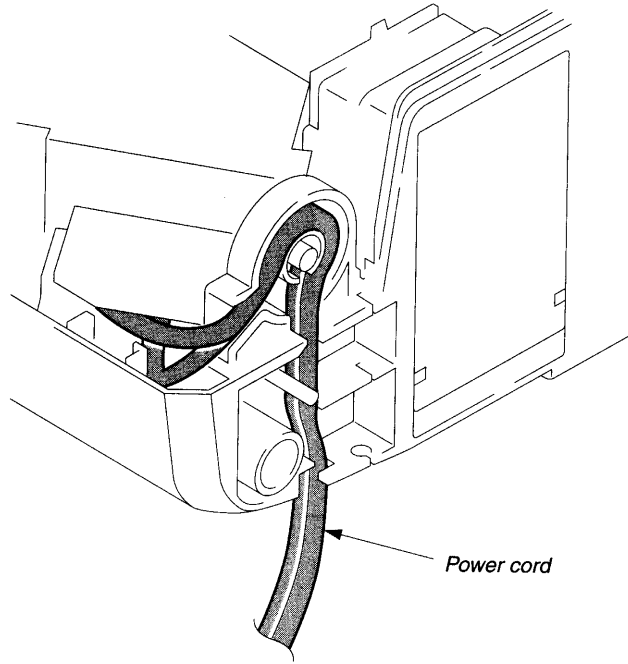
SECTION 1 SERVICE NOTE

TABLE OF CONTENTS

1. SERVICE NOTE	2
2. GENERAL	3
3. DISASSEMBLY	
3-1. Cabinet (Rear) Assy	4
3-2. Power Transformer	4
3-3. Main Board	5
3-4. Lid (Cassette)	6
3-5. Mechanism Deck Assy	6
3-6. Pointer Setting	7
4. MECHANICAL ADJUSTMENTS	8
5. ELECTRICAL ADJUSTMENTS	
5-1. Tape Player Section	8
5-2. Radio Section	9
6. DIAGRAMS	
6-1. Printed Wiring Boards	10
6-2. Schematic Diagram	13
7. EXPLODED VIEWS	
7-1. Rear Cabinet Section	16
7-2. Front Cabinet Section	17
7-3. Mechanism Deck Section	18
8. ELECTRICAL PARTS LIST	19

• SETTING THE POWER CORD

Set the power cord as illustrated below, then install the lower cabinet.

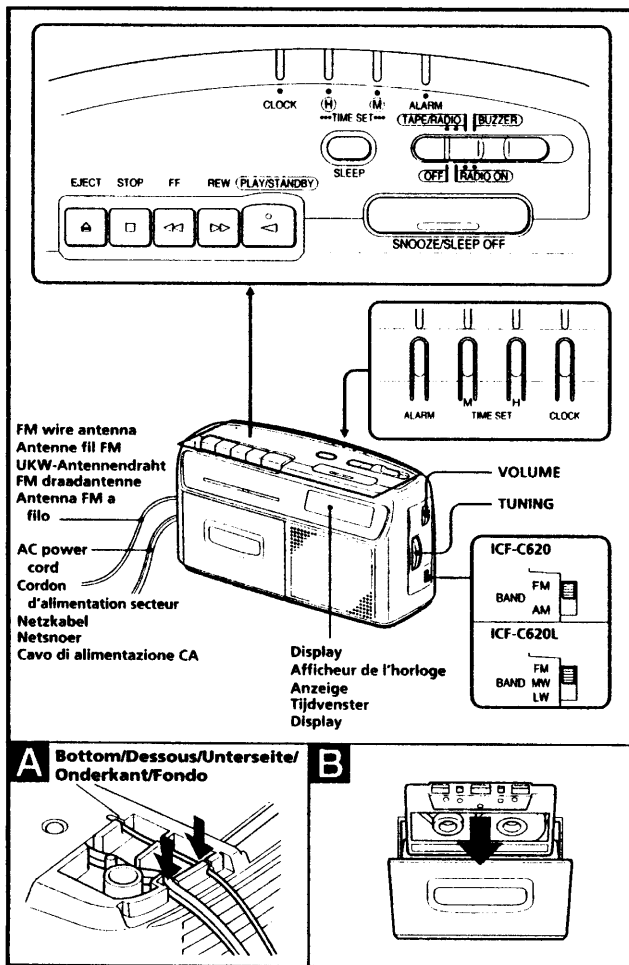


SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 2 GENERAL

This section extracted from instruction manual.



Getting Started

Setting up the Cord

(See Fig. A)

Pull the AC power cord and FM wire antenna along the groove from the bottom of this unit.

Installing the Battery

To keep good time, your Dream Machine needs one 6F22 battery (not supplied), in addition to house current. The battery keeps the clock operating in the event of a power interruption. Before setting the time on your Dream Machine, open the lid at the bottom of the unit, install the battery with correct polarity and then close the lid.

• After a power interruption, the displayed time may not be always correct (it may gain or lose about 10 minutes per hour).

Knowing When to Replace the Battery

To check battery power, unplug the power cord from the wall outlet and plug it in again after a few minutes. If the displayed time is incorrect, replace the battery with a new one.

Setting the Clock

- 1 Plug in the unit.
The display will flash "AM 12:00" or "0:00".
- 2 While holding down **CLOCK**, press **TIME SET** (to set the hour) or (to set the minute) repeatedly until the correct time appears in the display. Each press on the **TIME SET** advances the displayed number by one. When you release **CLOCK**, the clock begins to operate.

• The clock system varies depending on the model you own.
12-hour system: "AM 12:00" = midnight
24-hour system: "0:00" = midnight

Operating the Radio

- 1 Set the function selector to **RADIO ON** to turn on the radio.
- 2 Select **FM, AM/MW** or **LW** using **BAND**.
- 3 Tune in to a station using **TUNING**.
- 4 Adjust volume using **VOLUME**.

• To turn off the radio, set the function selector to **OFF**.
• While listening to the radio, you can switch to tape by pressing **PLAY/STANDBY** or

To Improve Radio Reception

FM: Extend the FM wire antenna to improve FM reception.

AM(MW)/LW: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.

Playing Back a Tape

- 1 Press **EJECT** to open the cassette holder and insert a cassette tape (see Fig. B).
- 2 Depress **PLAY/STANDBY**.
- 3 Adjust volume using **VOLUME**.

To	Press
Stop playback	STOP
Rewind the tape	REW
Advance the tape rapidly	FF

Notes

- In the playback mode, the motor stops at the tape end. The depressed button will automatically release (Auto shut-off function).
- While playing back a tape, do not set the tape alarm. If you set the tape alarm during playback, the tape being played back enters the pause mode.

Setting the Alarm

You can set a tape, radio or buzzer alarm.
• To set the tape alarm, first play back the desired tape as described in "Playing Back a Tape", adjust the volume and rewind the tape.
• To set the radio alarm, first tune in a station as described in "Playing the Radio" and adjust the volume.

- 1 Set the alarm time for tape, radio or buzzer.
While holding down **ALARM**, press **TIME SET** repeatedly until the desired time appears in the display. When you release **ALARM**, the alarm indicator stops flashing and lights up, and the current time appears in the display.
 - 2 Set the function selector to the desired alarm position.
Radio alarm: set to **TAPE/RADIO**.
Tape alarm: set to **TAPE/RADIO** and depress **PLAY/STANDBY**.
Buzzer alarm: set to **BUZZER**.
The tape, radio or buzzer will automatically sound at the preset time, and automatically turn itself off after 119 minutes, unless it is turned off manually.
- To turn off the alarm manually, set the function selector to **OFF**. To sound the alarm at the preset time the next day, set the function selector to **TAPE/RADIO** or **BUZZER** again.
• To check the preset time, press **ALARM**.

Notes

- The buzzer sound level is fixed, and independent of the **VOLUME** control.
- Even if you are listening to the radio, you can set the tape, radio or buzzer alarm.
- While you are listening to the tape, you can set only the buzzer alarm.

To Doze a Few More Minutes

- 1 Press **SNOOZE/SLEEP OFF**.
The radio, tape or buzzer will shut off but will automatically come on again after about 9 minutes. You can repeat this process as many times as you like.
- You can reset the alarm time while activating the snooze function.

To Use Both Sleep Timer and Alarm Function

You can fall asleep to the radio sound and you will be awakened by the tape/radio/buzzer alarm at the preset time.

- 1 Set the alarm. (See "Setting the Alarm".)
- 2 Set the sleep timer. (See "Setting the Sleep Timer".)

Setting the Sleep Timer

Enjoy falling asleep to the radio using the built in sleep timer that shuts off the radio automatically at a preset time.

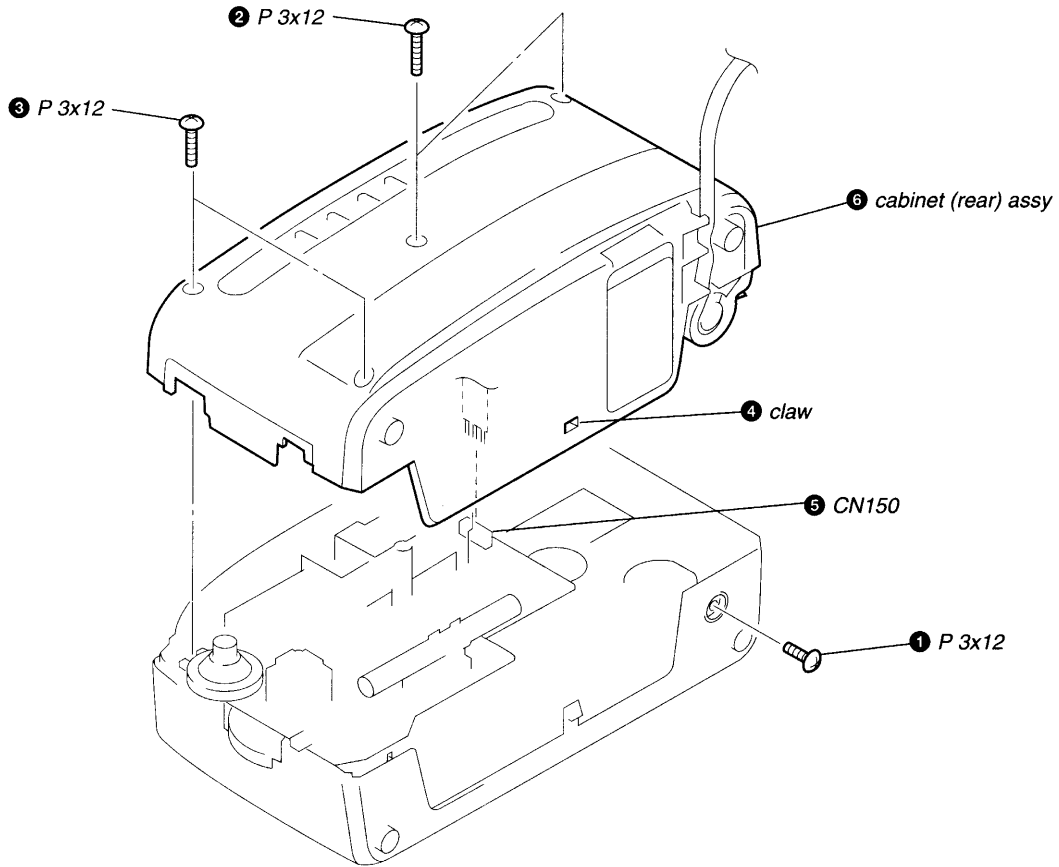
- 1 While listening to the radio, set the function selector to **OFF**.
- 2 Press **SLEEP**.
The radio turns on. It will go off after 59 minutes.

- To turn off the radio before the preset time, press **SNOOZE/SLEEP OFF**.
- Every time you press **SLEEP**, the sleep timer is reset to 59 minutes.
- To fall asleep to the tape sound, play back a recorded tape. When it reaches its end, **PLAY/STANDBY** will release automatically. The tape playback time depends on the length of the tape.

SECTION 3 DISASSEMBLY

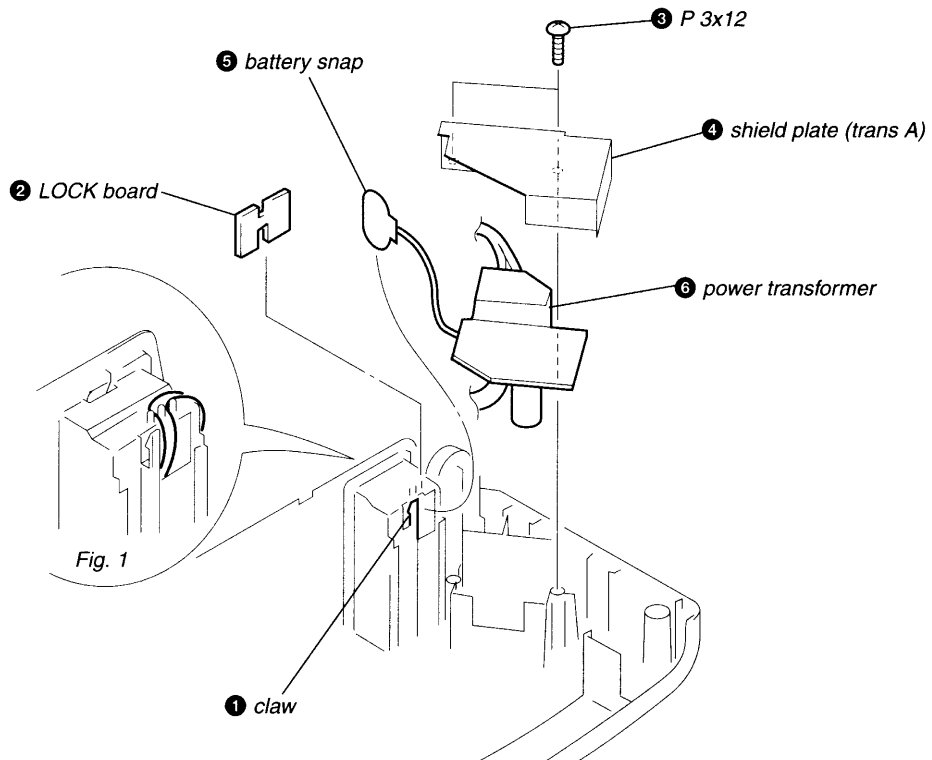
Note : Follow the disassembly procedure in the numerical order given.

3-1. CABINET (REAR) ASSY

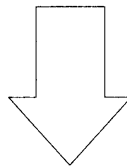
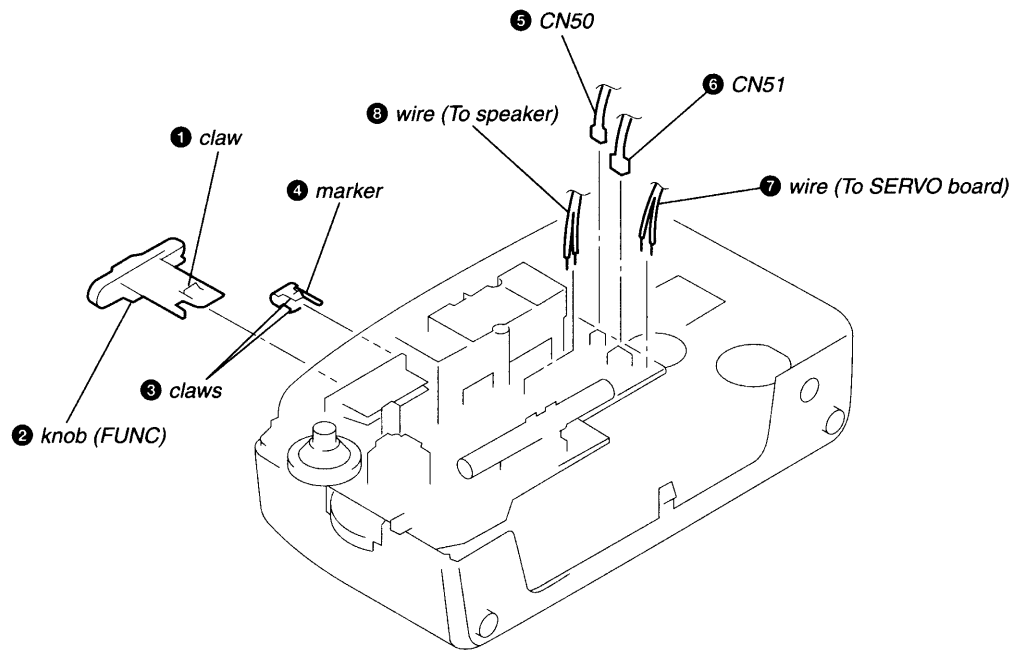


3-2. POWER TRANSFORMER

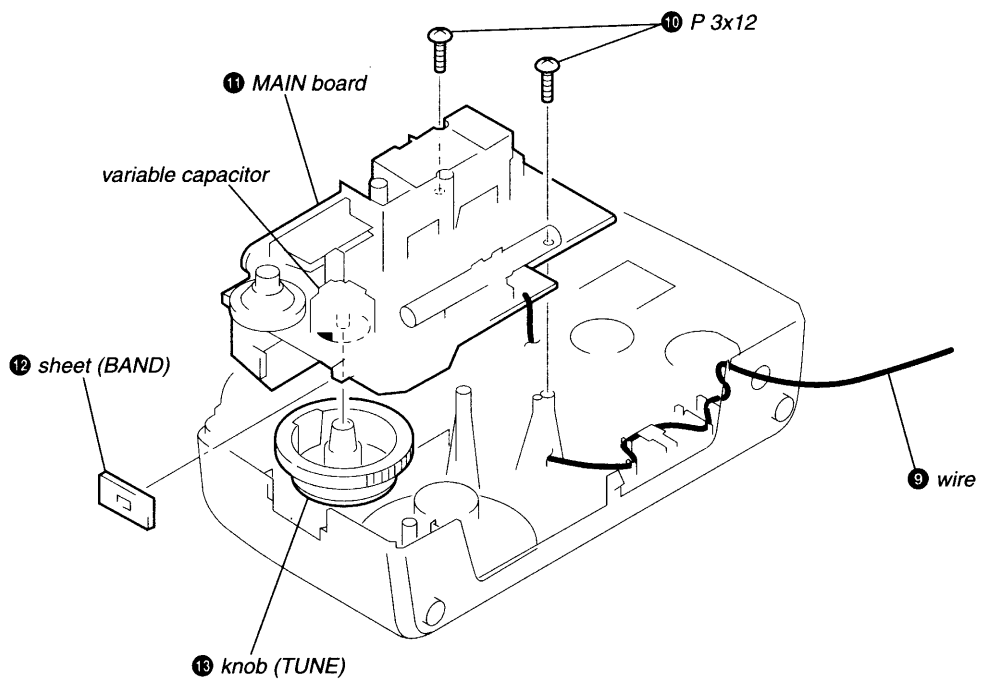
Note : When installing, position the battery snap wire as shown in Fig. 1.



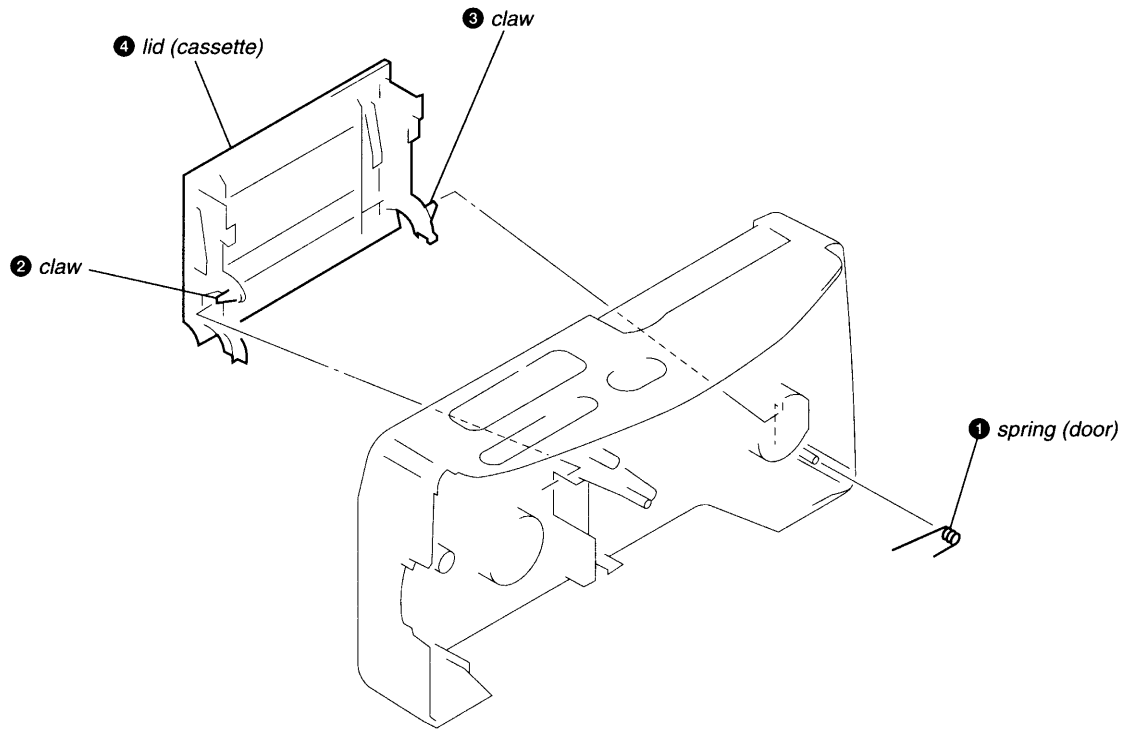
3-3. MAIN BOARD



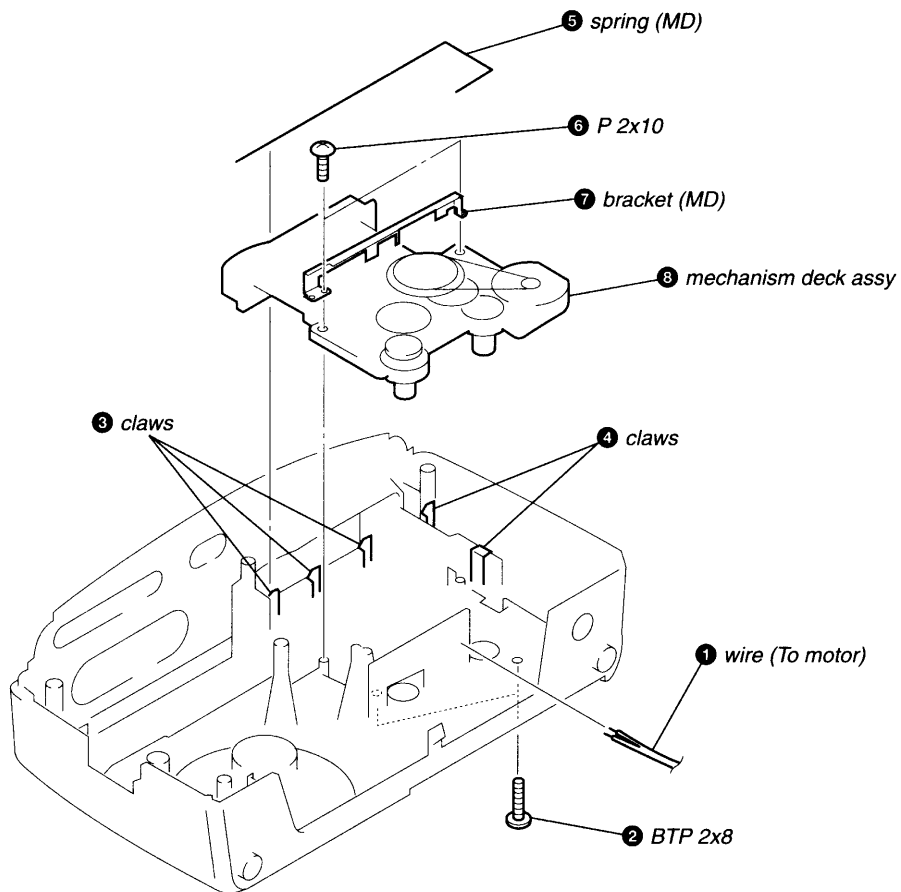
Note : When installing, turn the variable capacitor fully in the direction of the arrow.
Refer to 3-6. POINTER SETTING for installation of the knob (TUNE).



3-4. LID (CASSETTE)



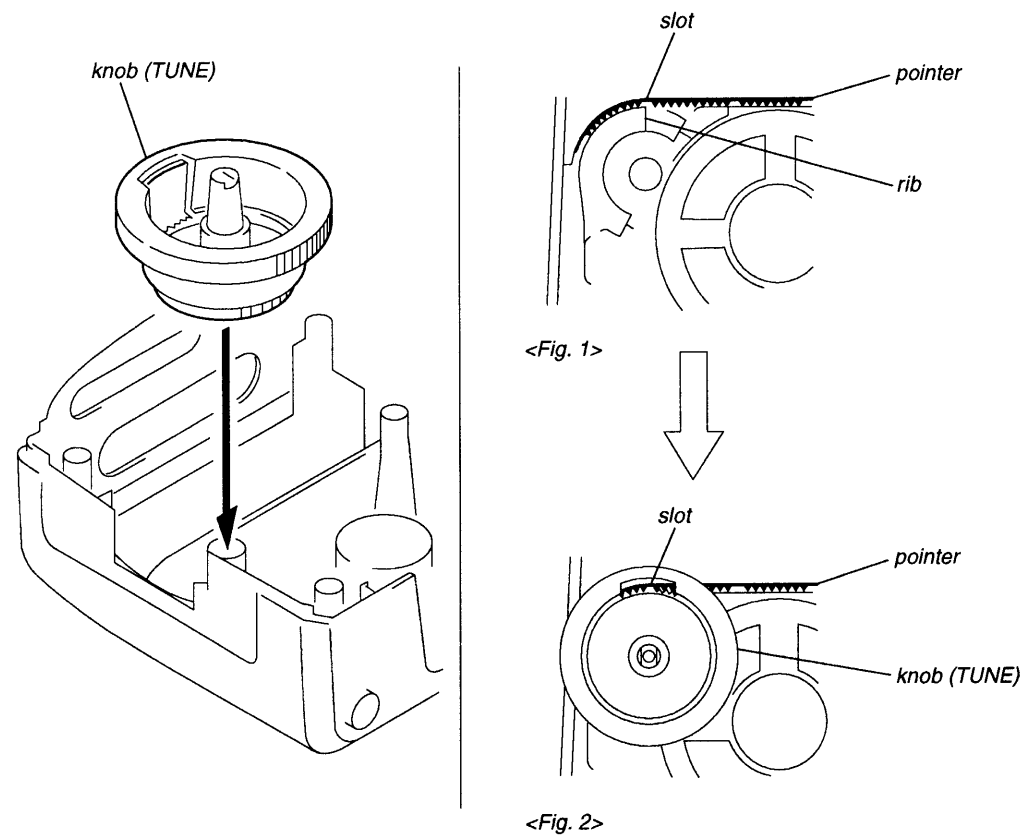
3-5. MECHANISM DECK ASSY



SECTION 4 MECHANICAL ADJUSTMENTS

3-6. POINTER SETTING

- Align the first slot on the pointer with the rib of the cabinet (front). <Fig. 1>
- Align the slot on the knob (TUNE) with the slot on the pointer and install the knob. <Fig. 2>



PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:

playback head	pinch roller
capstan	rubber belts
idlers	
- Demagnetize the playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustment apply suitable locking compound to the parts adjusted.
- The adjustment should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	30 - 60 g • cm (0.42 - 0.83 oz • inch)
Fast Forward and Rewind	CQ-201B	55 - 140 g • cm (0.76 - 1.94 oz • inch)
Back	CQ-102C	1 - 5 g • cm
Tension	CQ-102C	(0.014 - 0.069 oz • inch)

SECTION 5 ELECTRICAL ADJUSTMENTS

5-1. TAPE PLAYER SECTION

• Test Tape

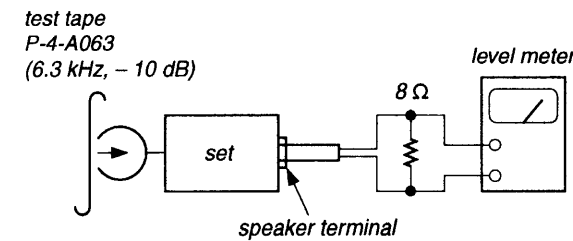
Type	Signal	Used for
P-4-A063	6.3 kHz, -10 dB	head azimuth adjustment
WS-48A	3 kHz, 0 dB	tape speed adjustment

Playback Head Azimuth Adjustment

Setting :
VOLUME control : mechanical mid

Procedure :

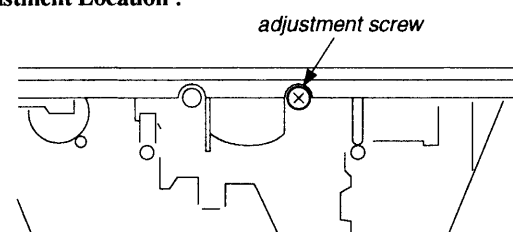
- Mode : playback



- Turn the adjustment screw to obtain the maximum reading on level meter.

Note : Several peaks may appear but take the maximum.
3. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :

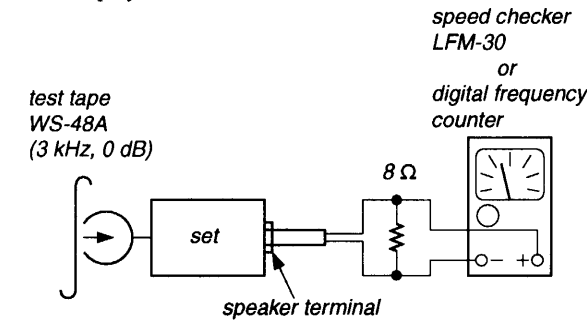


Tape Speed Adjustment

Setting :
VOLUME control : mechanical mid

Procedure :

- Mode : playback

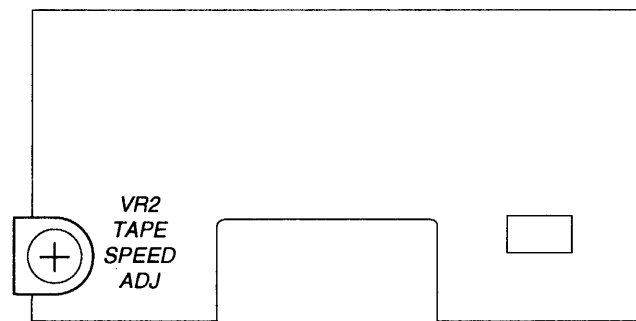


Adjustment Value :

Speed checker	Adjustment point	Digital frequency counter
± 3 %	VR2	2,910 to 3,090 Hz

Frequency difference between the beginning and the end of the tape should be within ± 1% (30 Hz).

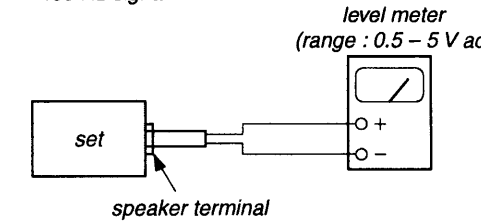
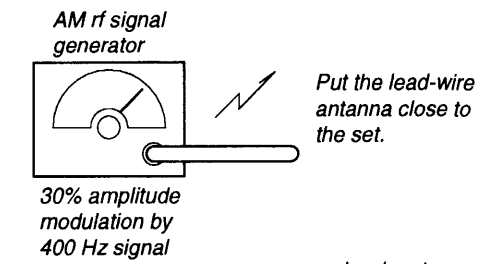
Adjustment Location : servo board (component side)



5-2. RADIO SECTION

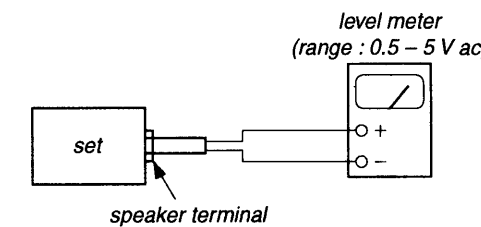
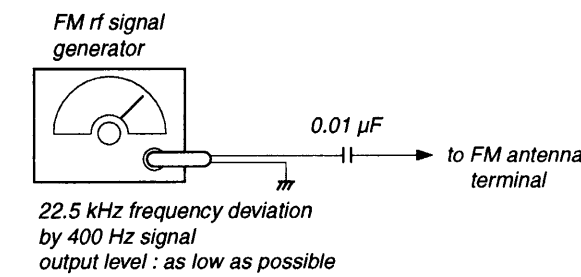
MW/LW

Setting :
Function selector : RADIO ON
BAND switch : MW or LW
VOLUME control : minimum



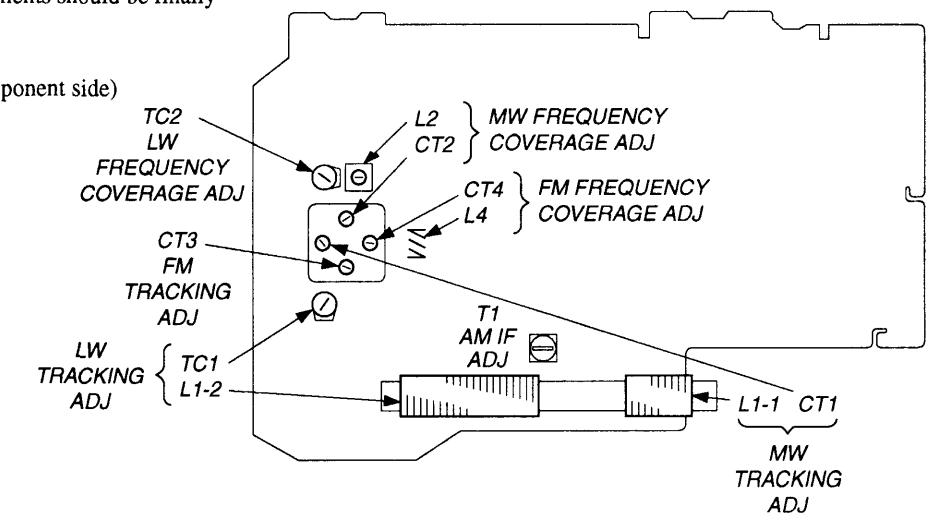
FM

Setting :
Function selector : RADIO ON
BAND switch : FM
VOLUME control : minimum



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

Adjustment Location : main board (component side)



AM IF ADJUSTMENT	
Adjust for a maximum reading on level meter.	
T1	
455 kHz	

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2	CT2
520 kHz	1,650 kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1-1	CT1
600 kHz	1,400 kHz

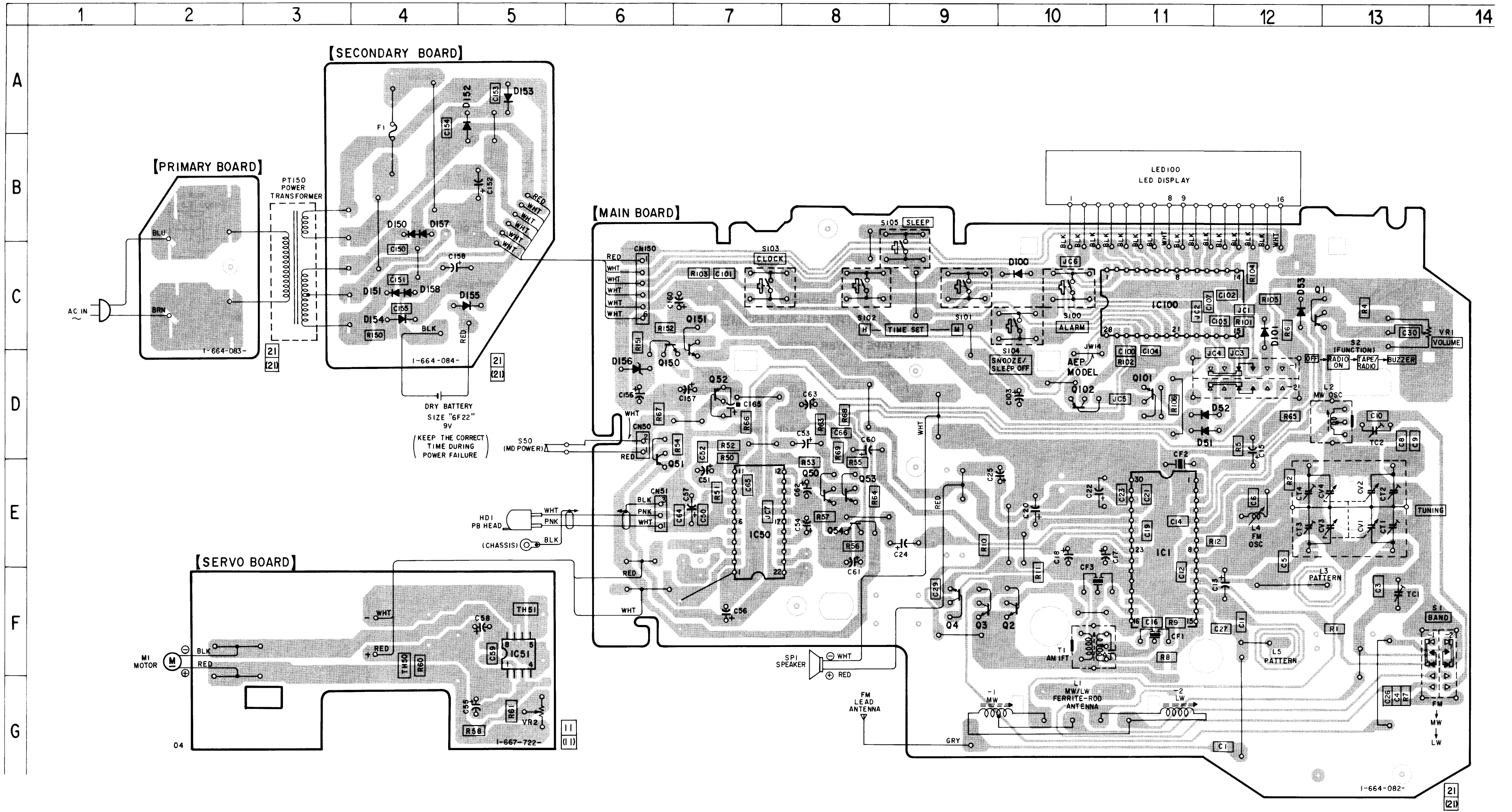
LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
(confirmation)	
TC2	
145 kHz	261 kHz

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1-2	TC1
160 kHz	240 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	CT4
86.5 MHz	109.5 MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
(confirmation)	
CT3	
86.5 MHz	109.5 MHz

6-1. PRINTED WIRING BOARDS



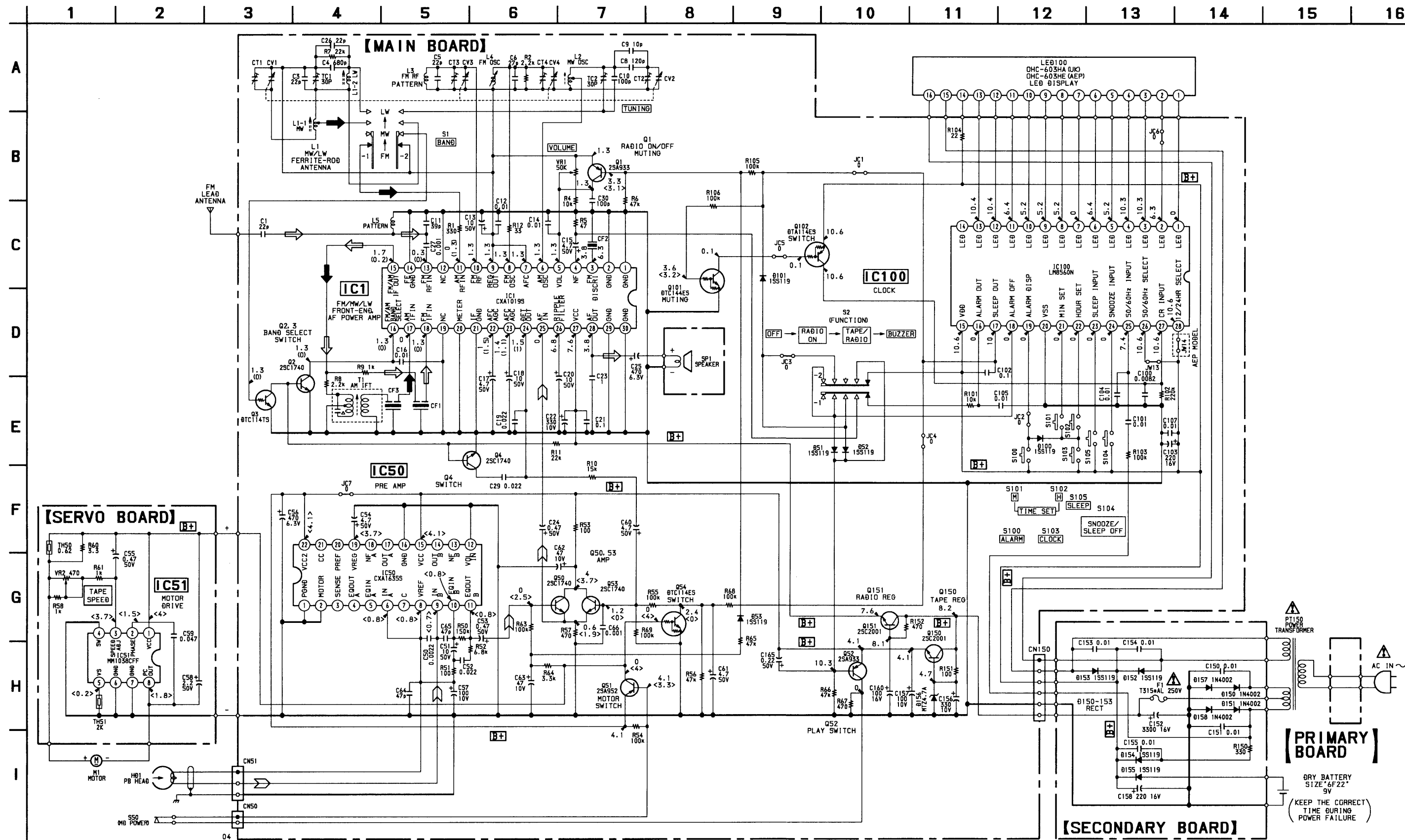
• Semiconductor Location

Ref. No.	Location
D51	D-11
D52	D-11
D53	C-12
D100	C-10
D101	C-12
D150	B-4
D151	C-4
D152	A-5
D153	A-5
D154	C-4
D155	C-5
D156	D-6
D157	B-4
D158	C-4
IC1	E-11
IC50	E-7
IC51	F-5
IC100	C-11
LED100	B-11
Q1	C-12
Q2	F-10
Q3	F-9
Q4	F-9
Q50	E-8
Q51	D-6
Q52	D-7
Q53	E-8
Q54	E-8
Q101	D-11
Q102	D-10
Q150	D-6
Q151	C-7

Note:

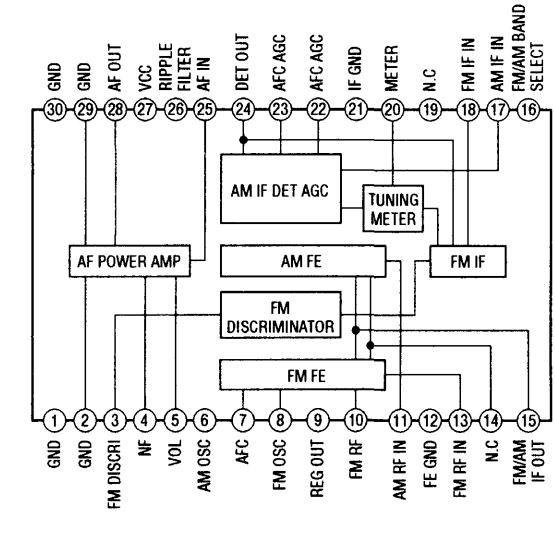
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- ▨ : Pattern on the side which is seen.
- : parts mounted on the conductor side.
- ⊕ : indicates side identified with part number.

6-2. SCHEMATIC DIAGRAM

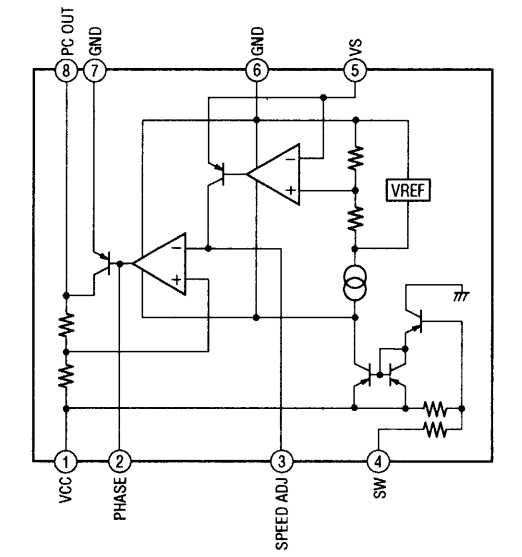


• IC Block Diagrams

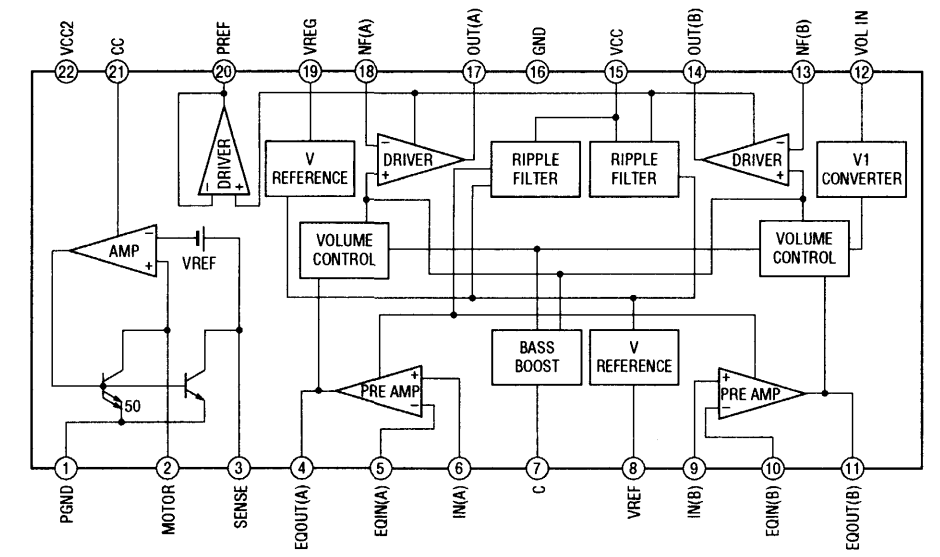
IC1 CXA1019S



IC51 MM1038CFF



IC50 CXA1635S



- Note:**
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in Ω and 1/4 W or less unless otherwise specified.
 - Δ : internal component.
- Note:** The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.
- [B+] : B+ Line.
 - [] : adjustment for repair.
 - Voltage is dc with respect to ground under no-signal (detuned) conditions.

- no mark : FM
- () : MW
- < > : PB
- Voltage are taken with a VOM (Input Impedance 10 M Ω). Voltage variations may be noted due to normal production tolerance.
- Signal path.
- \rightarrow : FM
- \rightarrow : MW
- \rightarrow : PB

SECTION 7 EXPLODED VIEWS

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.

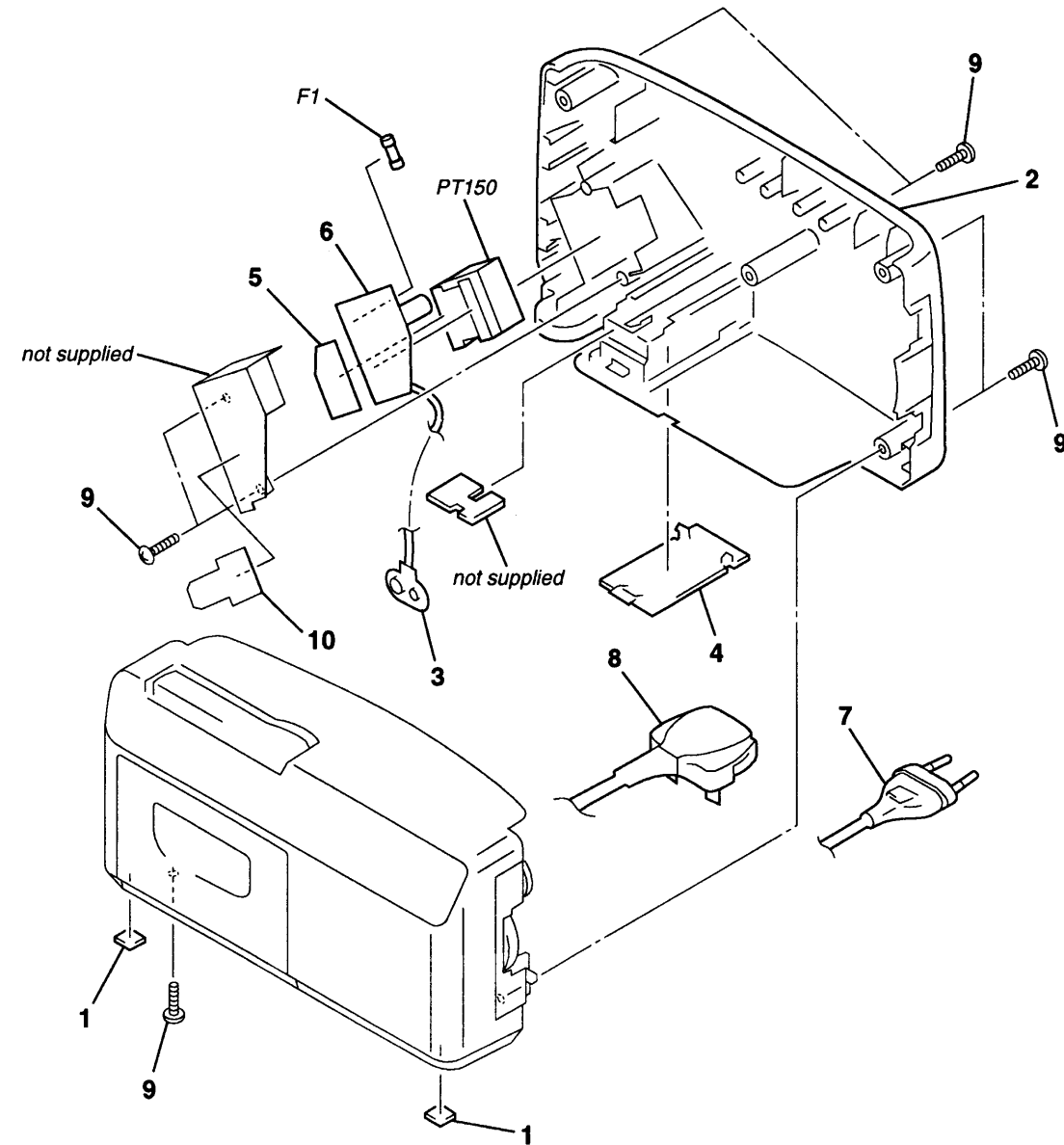
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE) ... (RED)

Parts Color Cabinet's Color

- Accessories and packing materials are given in the last of this parts list.

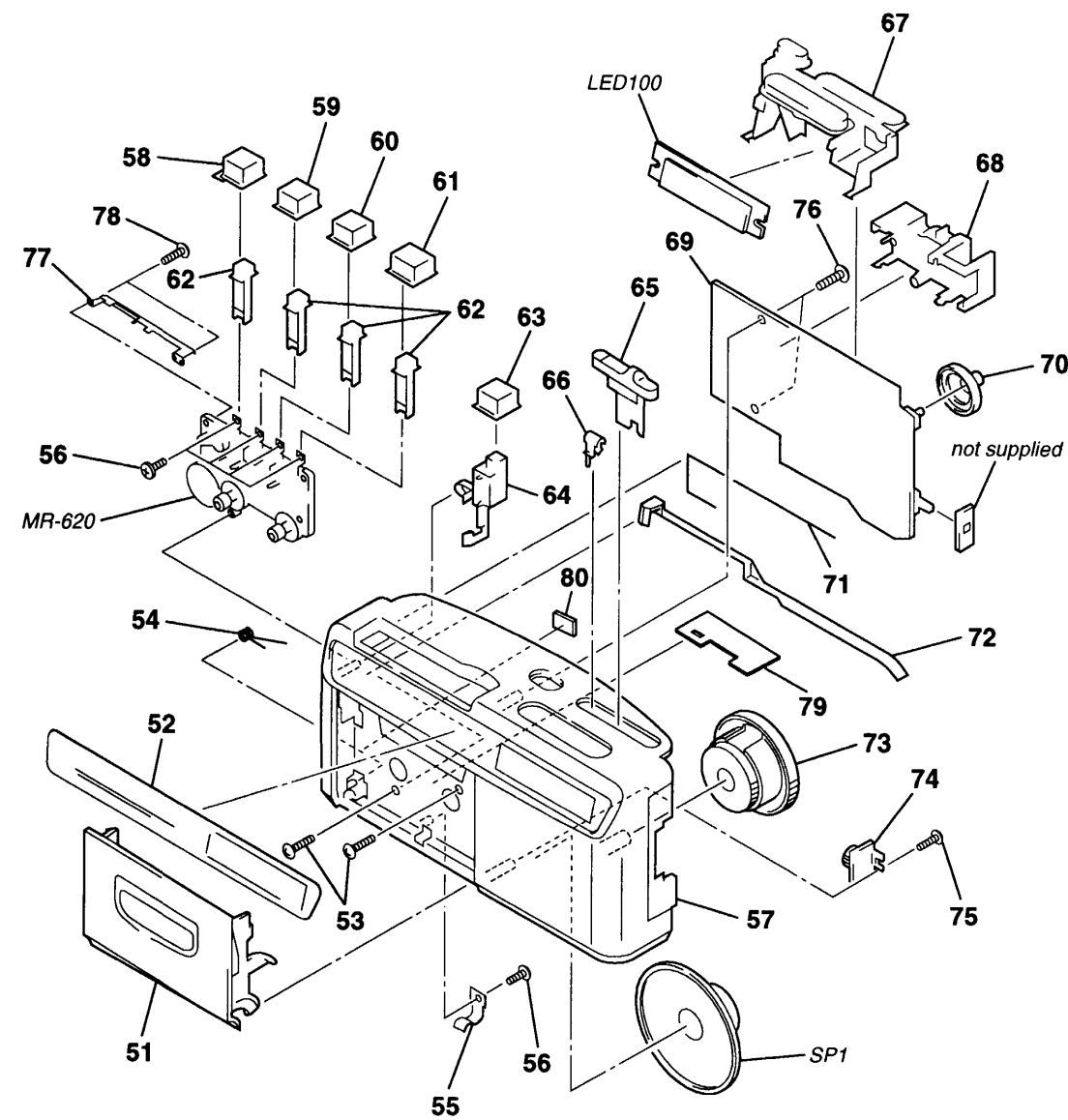
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

7-1. REAR CABINET SECTION



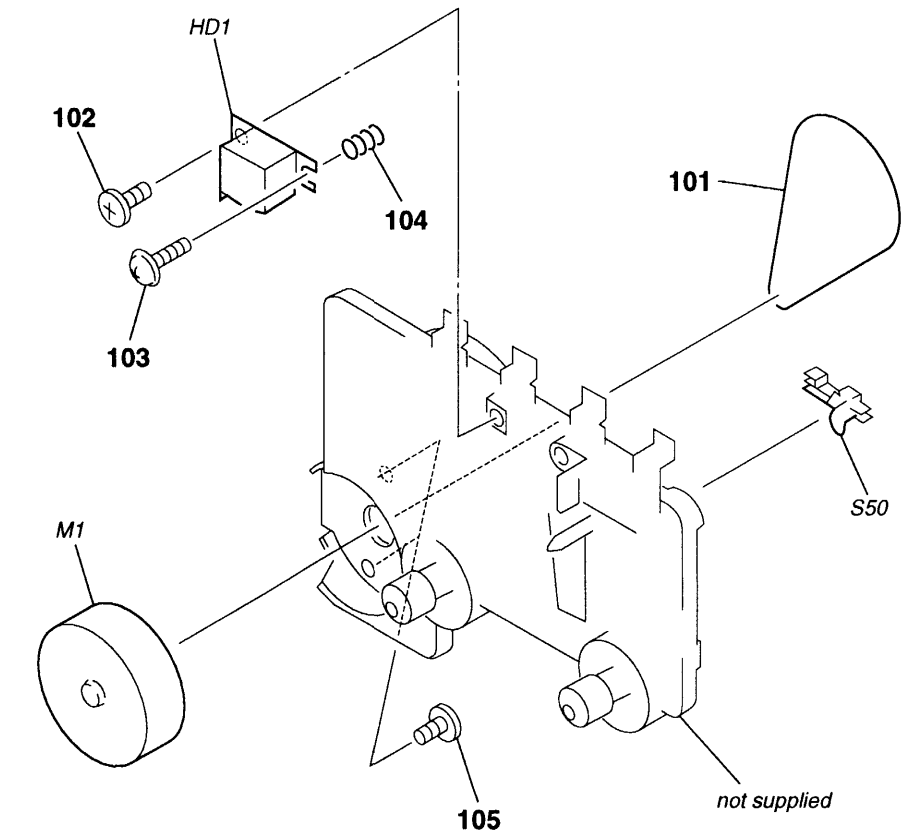
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-368-852-01	FOOT		Δ 7	1-555-795-00	CORD, POWER (AEP)	
2	3-011-136-21	CABINET (REAR)		Δ 8	1-696-572-21	CORD, POWER (UK)	
3	1-535-804-21	SNAP, BATTERY		9	7-685-648-79	SCREW +P 3X12 TYPE2 NON-SLIT	
4	3-369-135-21	LID, BATTERY CASE		10	3-019-648-01	SHEET, INSULATION	
* 5	1-664-083-21	PRIMARY BOARD		Δ F1	1-532-235-00	FUSE (T315mA/250V)	
* 6	1-664-084-21	SECONDARY BOARD		Δ PT150	1-431-200-11	TRANSFORMER, POWER	

7-2. FRONT CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3373-816-1	LID ASSY, CASSETTE		68	3-011-158-01	HOLDER (CLOCK)	
52	3-011-150-31	PLATE, TRANSPARENT (AEP)		* 69	A-3679-884-A	MAIN BOARD, COMPLETE (AEP)	
52	3-011-150-41	PLATE, TRANSPARENT (UK)		* 69	A-3679-886-A	MAIN BOARD, COMPLETE (UK)	
53	3-371-765-11	SCREW (2X8), +BTP		70	3-382-175-21	KNOB (V)	
54	3-011-148-01	SPRING (DOOR)		71	3-011-149-01	SPRING (MD)	
55	3-012-546-01	SPRING (TAPE)		72	3-011-139-01	POINTER	
56	3-318-203-61	SCREW (B1.7X4), TAPPING		73	3-011-145-01	KNOB (TUNE)	
57	3-011-135-11	CABINET (FRONT)		74	3-351-377-01	DAMPER	
58	3-011-143-01	BUTTON (STOP)		75	7-685-547-19	SCREW +BTP 3X10 TYPE2 N-S	
59	3-011-142-01	BUTTON (FF)		76	7-685-648-79	SCREW +P 3X12 TYPE2 NON-SLIT	
60	3-011-141-01	BUTTON (REW)		* 77	3-019-024-01	BRACKET (MD)	
61	3-011-140-01	BUTTON (PLAY)		78	7-685-106-01	SCREW +P 2X10 TYPE1	
62	3-011-156-01	HOLDER (BUTTON MD)		* 79	A-3679-924-A	SERVO BOARD, COMPLETE	
63	3-011-144-01	BUTTON (EJECT)		* 80	3-019-717-01	SPACER	
64	3-011-157-01	HOLDER (EJECT)		LED100	1-809-515-11	LED LTC-6512PDK2 (UK)	
65	3-011-138-01	KNOB (FUNC)		LED100	1-809-515-21	LED LTC-6512PDK4 (AEP)	
66	3-919-270-01	MARKER		SP1	1-544-140-21	SPEAKER	
67	3-011-159-01	BUTTON (SNOOZE)					

7-3. MECHANISM DECK SECTION (MR-620)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-012-742-01	MAIN BELT		105	3-012-746-01	SCREW (M1.7X2)	
102	3-012-733-01	SCREW 2X2, CAMERA		HD1	1-500-450-11	HEAD (MM15R-B08N1) (PLAYBACK)	
103	3-012-734-01	SCREW 2X4.7, +- CUP		M1	1-698-948-11	MOTOR (RF410CA-12250T)	
104	3-012-729-01	SPRING, AZIMUTH		S50	1-771-062-11	SWITCH, LEAF (MSW-1541TA) (MD POWER)	

SECTION 8 ELECTRICAL PARTS LIST

MAIN

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.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- **SEMICONDUCTORS**
In each case, u : μ , for example:
uA.. : μ A.. uPA.. : μ PA..
uPB.. : μ PB.. uPC.. : μ PC.. uPD.. : μ PD..
- **CAPACITORS**
uF : μ F
- **COILS**
uH : μ H

The components identified by mark Δ or dotted line with mark, Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-3679-884-A	MAIN BOARD, COMPLETE (AEP)		C66	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
*	A-3679-886-A	MAIN BOARD, COMPLETE (UK)		C100	1-163-020-00	CERAMIC CHIP 0.0082uF 10%	50V
		*****		C101	1-164-232-11	CERAMIC CHIP 0.01uF	50V
		< CAPACITOR >		C102	1-163-038-00	CERAMIC CHIP 0.1uF	25V
				C103	1-126-934-11	ELECT 220uF 20%	16V
C1	1-163-235-11	CERAMIC CHIP 22PF 5%	50V	C104	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C3	1-163-235-11	CERAMIC CHIP 22PF 5%	50V	C105	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C4	1-163-137-00	CERAMIC CHIP 680PF 5%	50V	C107	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C5	1-163-235-11	CERAMIC CHIP 22PF 5%	50V	C156	1-126-924-11	ELECT 330uF 20%	10V
C6	1-163-103-00	CERAMIC CHIP 27PF 5%	50V	C157	1-126-933-11	ELECT 100uF 20%	10V
C8	1-163-253-11	CERAMIC CHIP 120PF 5%	50V	C160	1-126-933-11	ELECT 100uF 20%	10V
C9	1-163-093-00	CERAMIC CHIP 10PF 5%	50V	C165	1-126-957-11	ELECT 0.22uF 20%	50V
C10	1-163-251-11	CERAMIC CHIP 100PF 5%	50V			< FILTER >	
C11	1-163-241-11	CERAMIC CHIP 39PF 5%	50V	CF1	1-577-324-11	FILTER, CERAMIC	
C12	1-163-031-11	CERAMIC CHIP 0.01uF	50V	CF2	1-577-324-11	FILTER, CERAMIC	
				CF3	1-578-677-11	FILTER, CERAMIC	
C13	1-126-964-11	ELECT 10uF 20%	50V			< CONNECTOR >	
C14	1-163-031-11	CERAMIC CHIP 0.01uF	50V	* CN50	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
C15	1-126-963-11	ELECT 4.7uF 20%	50V	* CN51	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
C16	1-163-031-11	CERAMIC CHIP 0.01uF	50V	* CN150	1-568-272-11	SOCKET, CONNECTOR 6P	
C17	1-126-963-11	ELECT 4.7uF 20%	50V			< VARIABLE CAPACITOR >	
C18	1-126-964-11	ELECT 10uF 20%	50V	CT1-4	1-141-566-11	CAP, VAR	
C19	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V	CV1-4	1-141-566-11	CAP, VAR (TUNING)	
C20	1-126-964-11	ELECT 10uF 20%	50V			< DIODE >	
C21	1-163-038-00	CERAMIC CHIP 0.1uF	25V	D51	8-719-911-19	DIODE 1SS119-25	
C22	1-126-924-11	ELECT 330uF 20%	10V	D52	8-719-911-19	DIODE 1SS119-25	
C23	1-164-346-11	CERAMIC CHIP 1uF	16V	D53	8-719-911-19	DIODE 1SS119-25	
C24	1-126-959-11	ELECT 0.47uF 20%	50V	D100	8-719-911-19	DIODE 1SS119-25	
C25	1-126-935-11	ELECT 470uF 20%	6.3V	D101	8-719-911-19	DIODE 1SS119-25	
C26	1-163-235-11	CERAMIC CHIP 22PF 5%	50V			< IC >	
C27	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V	D156	8-719-010-34	DIODE UZ-4.7BSC	
C29	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V			< JUMPER RESISTOR >	
C30	1-163-251-11	CERAMIC CHIP 100PF 5%	50V	IC1	8-752-037-02	IC CXA1019S	
C50	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	50V	IC50	8-752-057-97	IC CXA1635S	
C51	1-126-964-11	ELECT 10uF 20%	50V	IC100	8-759-821-46	IC LM8560N	
C52	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V				
C53	1-126-959-11	ELECT 0.47uF 20%	50V	JC1	1-216-295-00	CONDUCTOR, CHIP (2012)	
C54	1-126-963-11	ELECT 4.7uF 20%	50V	JC2	1-216-295-00	CONDUCTOR, CHIP (2012)	
C56	1-126-935-11	ELECT 470uF 20%	6.3V	JC3	1-216-295-00	CONDUCTOR, CHIP (2012)	
C57	1-126-933-11	ELECT 100uF 20%	10V				
C60	1-126-963-11	ELECT 4.7uF 20%	50V				
C61	1-126-963-11	ELECT 4.7uF 20%	50V				
C62	1-126-967-11	ELECT 47uF 20%	10V				
C63	1-126-967-11	ELECT 47uF 20%	10V				
C64	1-163-243-11	CERAMIC CHIP 47PF 5%	50V				
C65	1-163-243-11	CERAMIC CHIP 47PF 5%	50V				

MAIN**PRIMARY****SECONDARY**

Ref. No.	Part No.	Description	Remark
JC4	1-216-295-00	CONDUCTOR, CHIP	(2012)
JC5	1-216-296-00	CONDUCTOR, CHIP	(3216)
JC6	1-216-295-00	CONDUCTOR, CHIP	(2012)
JC7	1-216-296-00	CONDUCTOR, CHIP	(3216)
< COIL >			
L1	1-501-902-11	ANTENNA, FERRITE-ROD (MW/LW)	
L2	1-411-175-11	COIL (MW OSC)	
L4	1-428-163-11	COIL, AIR-CORE	
< LED >			
LED100	1-809-515-11	LED LTC-6512PDK2 (UK)	
LED100	1-809-515-21	LED LTC-6512PDK4 (AEP)	
< TRANSISTOR >			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-029-68	TRANSISTOR DTC114TSA	
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q50	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q51	8-729-195-23	TRANSISTOR 2SA952	
Q52	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q53	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q54	8-729-029-66	TRANSISTOR DTC114ESA	
Q101	8-729-030-02	TRANSISTOR DTC144ESA	
Q102	8-729-422-57	TRANSISTOR UN4111	
Q150	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
Q151	8-729-011-92	TRANSISTOR 2SC2001TP-K1K2	
< RESISTOR >			
R1	1-216-037-00	METAL CHIP 330	5% 1/10W
R2	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R4	1-216-073-00	METAL CHIP 10K	5% 1/10W
R5	1-216-017-00	METAL GLAZE 47	5% 1/10W
R6	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R7	1-216-081-00	METAL CHIP 22K	5% 1/10W
R8	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R9	1-216-049-11	METAL GLAZE 1K	5% 1/10W
R10	1-216-077-00	METAL CHIP 15K	5% 1/10W
R11	1-216-081-00	METAL CHIP 22K	5% 1/10W
R12	1-216-013-00	METAL CHIP 33	5% 1/10W
R50	1-216-101-00	METAL CHIP 150K	5% 1/10W
R51	1-216-025-00	METAL GLAZE 100	5% 1/10W
R52	1-216-069-00	METAL CHIP 6.8K	5% 1/10W
R53	1-216-025-00	METAL GLAZE 100	5% 1/10W
R54	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R55	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R56	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R57	1-216-041-00	METAL CHIP 470	5% 1/10W
R63	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R64	1-216-061-00	METAL CHIP 3.3K	5% 1/10W
R65	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R66	1-216-089-00	METAL GLAZE 47K	5% 1/10W

Ref. No.	Part No.	Description	Remark
R67	1-216-041-00	METAL CHIP 470	5% 1/10W
R68	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R69	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R101	1-216-073-00	METAL CHIP 10K	5% 1/10W
R102	1-216-105-00	METAL GLAZE 220K	5% 1/10W
R103	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R104	1-216-009-00	METAL CHIP 22	5% 1/10W
R105	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R106	1-216-097-00	METAL GLAZE 100K	5% 1/10W
R151	1-216-025-00	METAL GLAZE 100	5% 1/10W
R152	1-216-041-00	METAL CHIP 470	5% 1/10W
< SWITCH >			
S1	1-572-633-31	SWITCH, SLIDE (BAND)	
S2	1-762-232-11	SWITCH, SLIDE (FUNCTION)	
S100	1-554-303-21	SWITCH, TACTILE (ALARM)	
S101	1-554-303-21	SWITCH, TACTILE (M (TIME SET))	
S102	1-554-303-21	SWITCH, TACTILE (H (TIME SET))	
S103	1-554-303-21	SWITCH, TACTILE (CLOCK)	
S104	1-554-303-21	SWITCH, TACTILE (SNOOZE/SLEEP OFF)	
S105	1-554-303-21	SWITCH, TACTILE (SLEEP)	
< TRANSFORMER >			
T1	1-404-902-21	TRANSFORMER, IF	
< TRIMMER >			
TC1	1-141-245-00	CAP, TRIMMER 30PF	
TC2	1-141-245-00	CAP, TRIMMER 30PF	
< VARIABLE RESISTOR >			
VR1	1-225-441-11	RES, VAR, CARBON 50K (VOLUME)	

*	1-664-083-21	PRIMARY BOARD	*****
*	1-535-771-11	TERMINAL	*****
*	1-664-084-21	SECONDARY BOARD	*****
	1-533-217-31	HOLDER, FUSE	
	1-535-804-21	SNAP, BATTERY	
< CAPACITOR >			
C150	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C151	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C152	1-126-936-11	ELECT 3300uF	20% 16V
C153	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C154	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C155	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C158	1-126-934-11	ELECT 220uF	20% 16V

SECONDARY

SERVO

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D150	8-719-052-88	DIODE 1N4002	
D151	8-719-052-88	DIODE 1N4002	
D152	8-719-911-19	DIODE 1SS119-25	
D153	8-719-911-19	DIODE 1SS119-25	
D154	8-719-911-19	DIODE 1SS119-25	
D155	8-719-911-19	DIODE 1SS119-25	
D157	8-719-052-88	DIODE 1N4002	
D158	8-719-052-88	DIODE 1N4002	
		< FUSE >	
△ F1	1-532-235-00	FUSE (T315mAL/250V)	
		< TRANSFORMER >	
△ PT150	1-431-200-11	TRANSFORMER, POWER	
		< RESISTOR >	
R150	1-216-037-00	METAL CHIP 330 5% 1/10W	

*	A-3679-924-A	SERVO BOARD, COMPLETE	

		< CAPACITOR >	
C55	1-126-959-11	ELECT 0.47uF 20% 50V	
C58	1-126-961-11	ELECT 2.2uF 20% 50V	
C59	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
		< IC >	
IC51	8-759-334-24	IC MM1038CFF	
		< RESISTOR >	
R58	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
R60	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
R61	1-216-049-11	METAL GLAZE 1K 5% 1/10W	
		< THERMISTOR(POSITIVE) >	
TH50	1-809-279-11	THERMISTOR, POSITIVE	
TH51	1-810-764-11	THERMISTOR, POSITIVE	
		< VARIABLE RESISTOR >	
VR2	1-241-760-11	RES, ADJ, CARBON 470	

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	

△ 7	1-555-795-00	CORD, POWER (AEP)	
△ 8	1-696-572-21	CORD, POWER (UK)	
△ F1	1-532-235-00	FUSE (T315mAL/250V)	
HD1	1-500-450-11	HEAD (MM15R-B08N1) (PLAYBACK)	
M1	1-698-948-11	MOTOR (RF410CA-12250T)	
△ PT150	1-431-200-11	TRANSFORMER, POWER	
S50	1-771-062-11	SWITCH, LEAF (MSW-1541TA) (MD POWER)	
SP1	1-544-140-21	SPEAKER	

		ACCESSORIES & PACKING MATERIALS	

3-859-470-11		MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,DUTCH,ITALIAN)	

The components identified by mark △ or dotted line with mark. △ are critical for safety. Replace only with part number specified.

