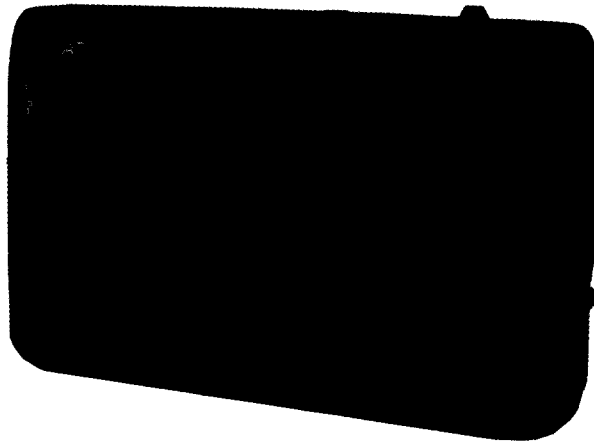


ICF-C620

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model
Australian Model



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

SPECIFICATIONS

Radio section

Frequency range :

FM : 87.5 – 108.0 MHz

AM : 526.5 – 1606.5 kHz (Italian model)

530 – 1605 kHz (Except Italian model)

Tape player section and general

Time display

Except AEP, Italian model	12 hour
AEP, Italian 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 (3 1/32 inches) dia. 8 ohms.

Power output :

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

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

Power requirements :

120 V AC, 60 Hz (US, Canadian, E model)

220 V – 230 V AC, 50 Hz (AEP, Italian, Australian model)

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 (9 7/16 × 4 7/8 × 3 15/16 inches) (w/h/d) incl. projecting parts and controls

Mass : Approx. 870 g (1.9 lb. 30 oz.) not incl. battery

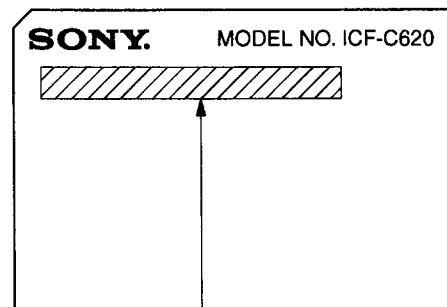
Design and specifications are subject to change without notice.

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.

MODEL IDENTIFICATION

– Model Number Label –



US, Canadian, E model : AC : 120V ~ 60Hz 5W
AEP, Italian, Australian model : AC : 220 – 230V ~ 50Hz 5W

FM/AM CASSETTE PLAYER CLOCK RADIO

SONY®



SAFETY CHECK-OUT (US MODEL)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use three instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

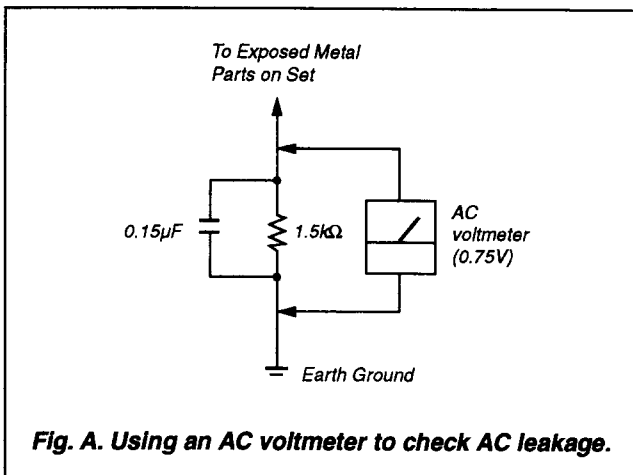


Fig. A. Using an AC voltmeter to check AC leakage.

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

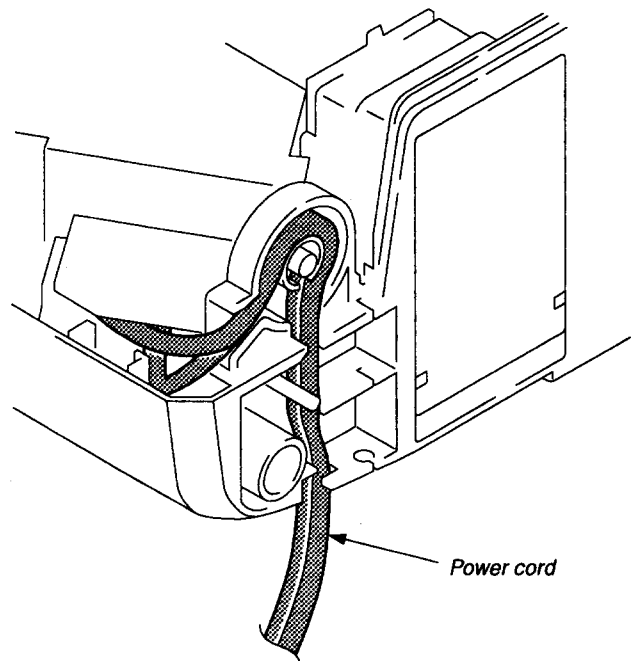
TABLE OF CONTENTS

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 Recorder 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

SECTION 1 SERVICE NOTE

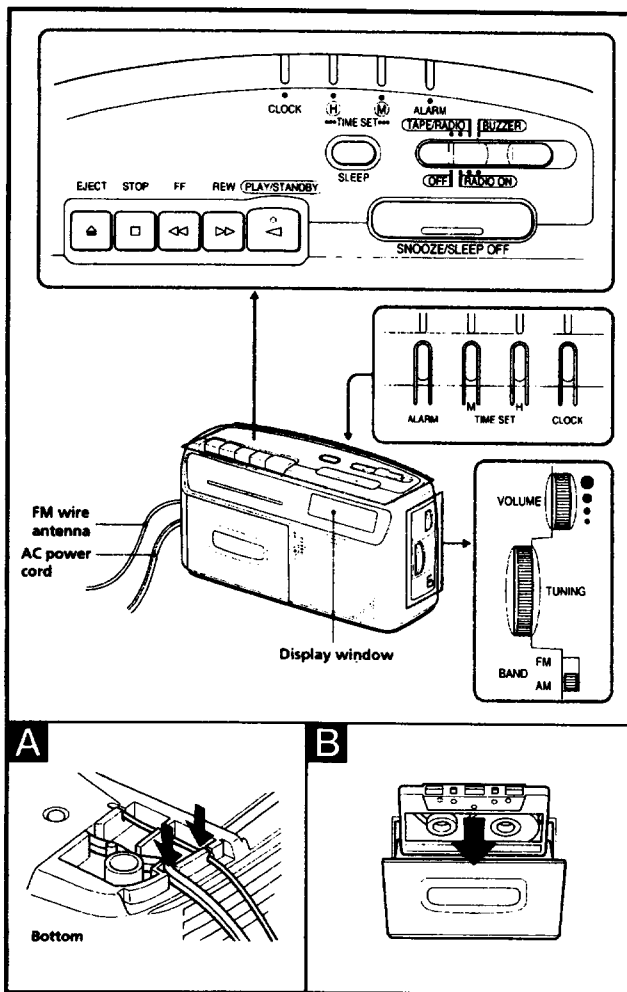
• SETTING THE POWER CORD

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



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".
- 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.

Playing the Radio

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

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

To Improve Radio Reception

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

AM: 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 by turning **VOLUME**.

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

Notes

- In 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 the 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** or 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 on 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.

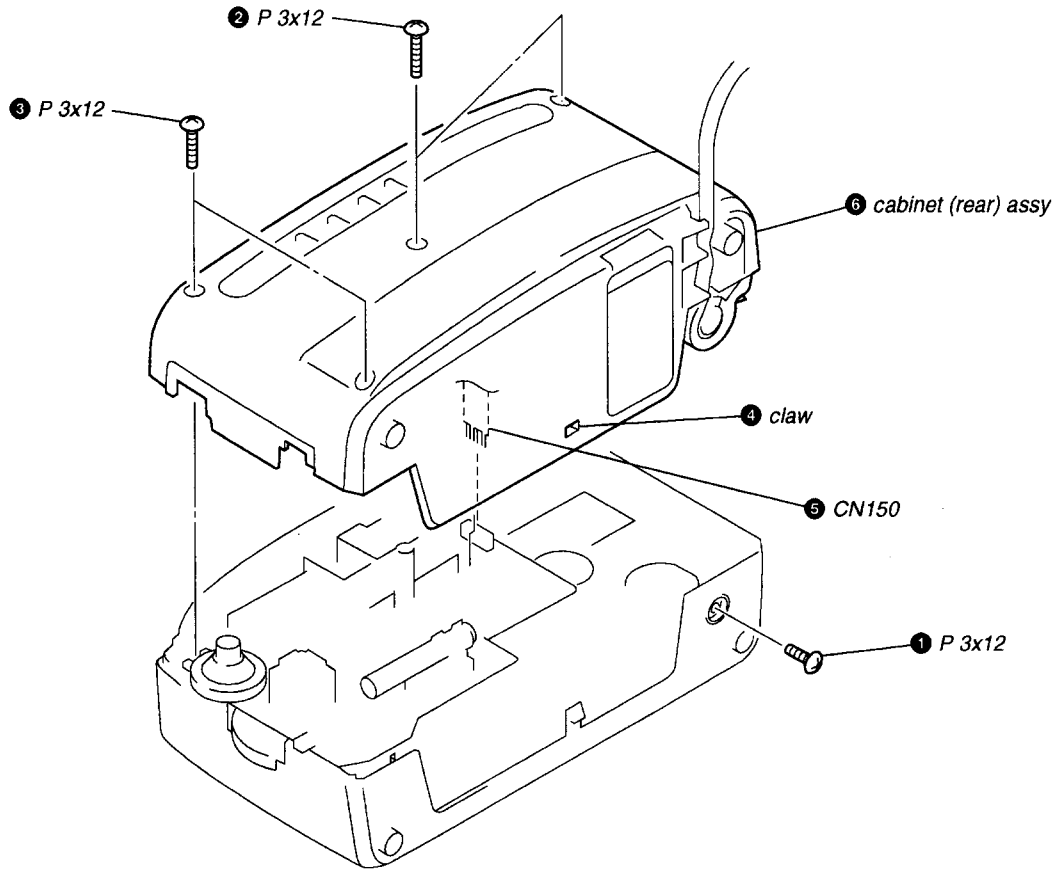
- 1 While listening to the radio, set the function selector to **OFF**.
- 2 Press **SLEEP**. The radio turns on. It will go off after 59 minutes.

- 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, turn the radio off and 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

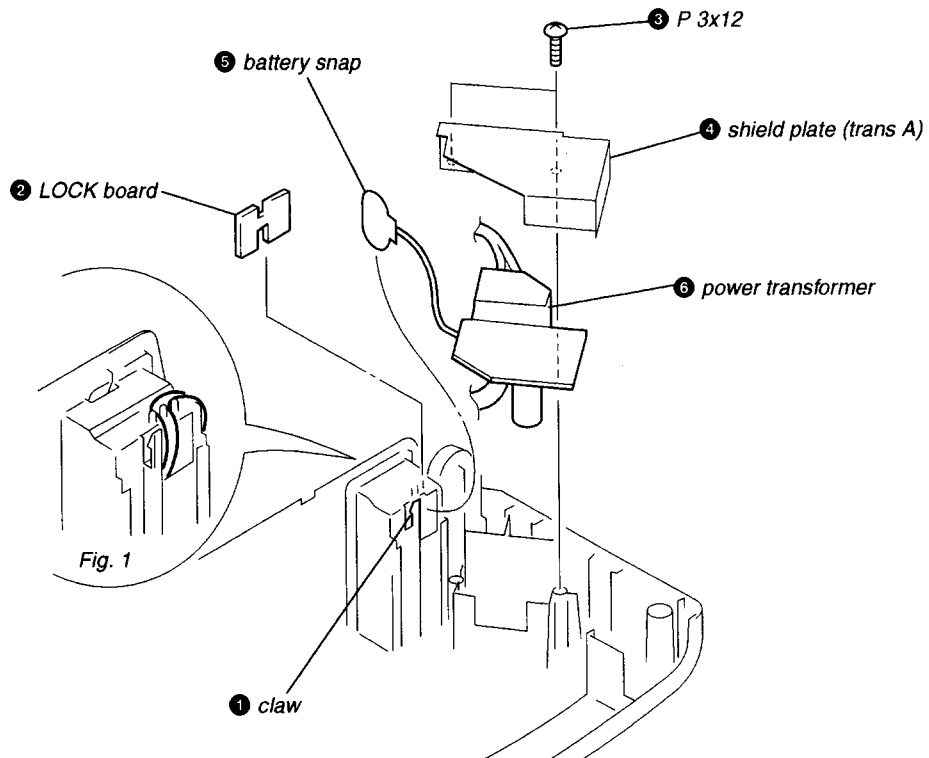
Note : Follow the disassembly procedure in the numerical order given.

3-1. CABINET (REAR) ASSY

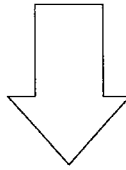
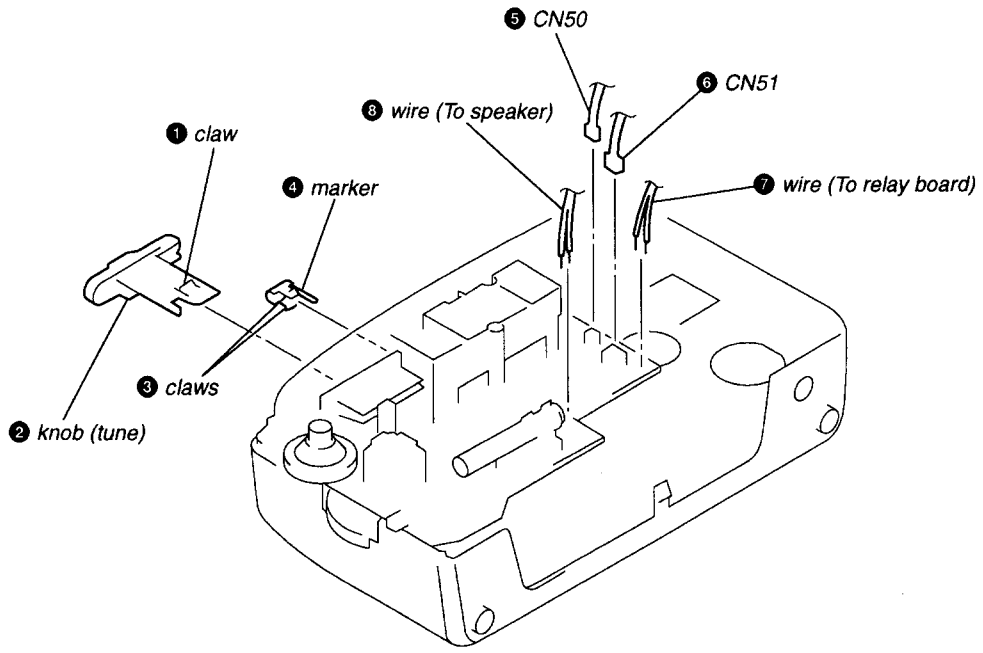


3-2. POWER TRANSFORMER

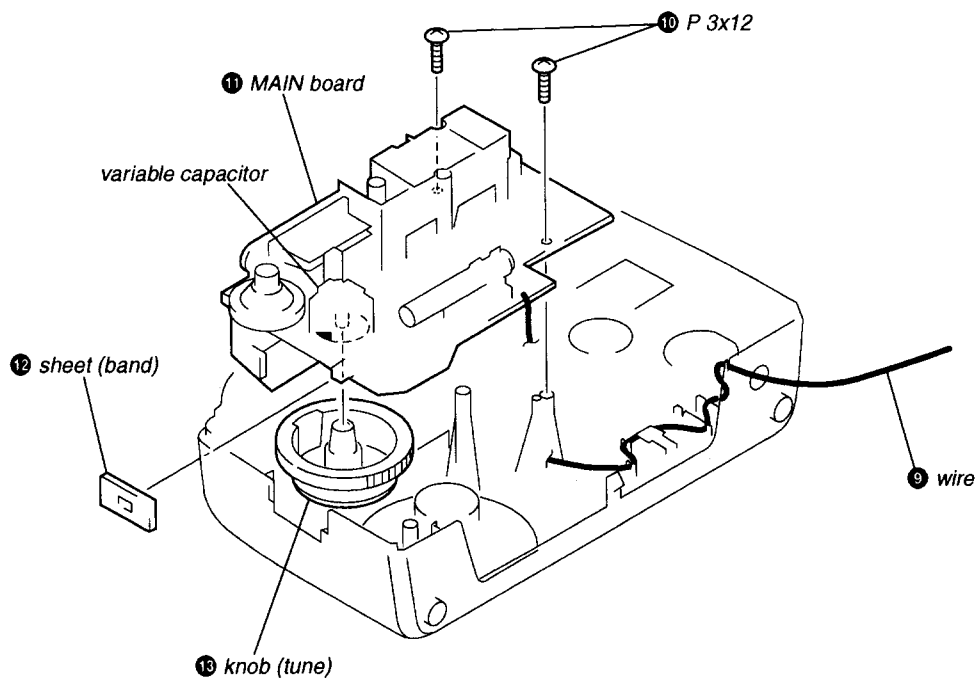
Note : When installing, position the battery snap wire as shown in Fig. 1.



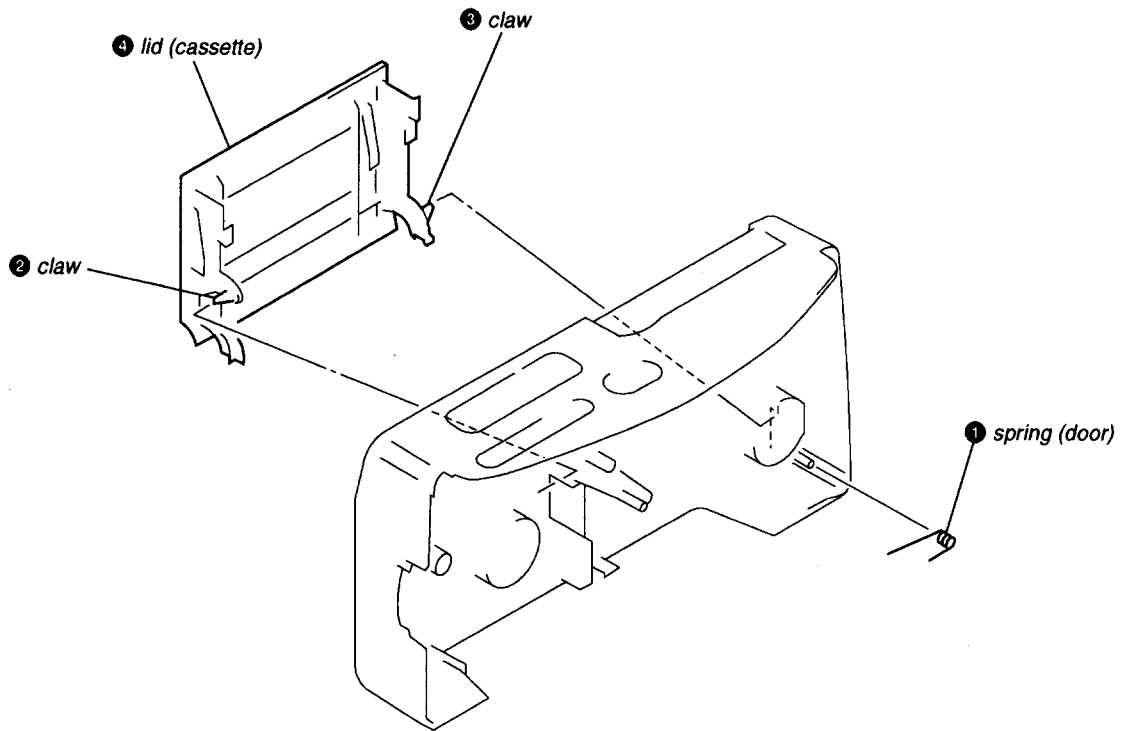
3-3. MAIN BOARD



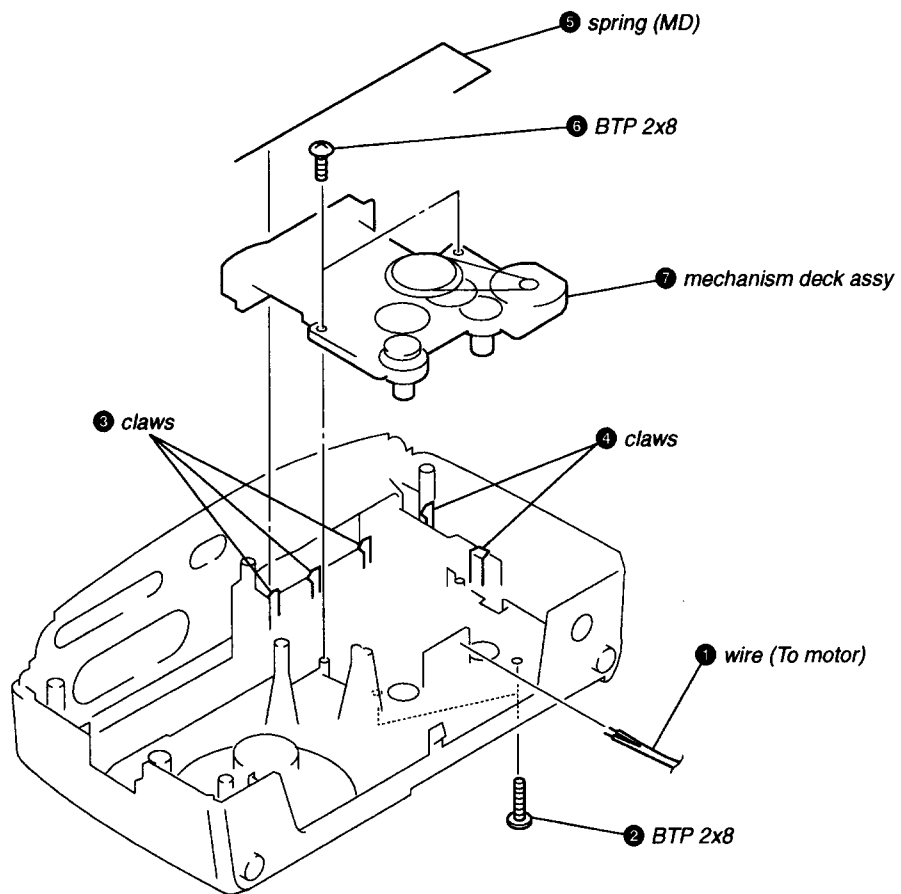
Note : When installing, turn the variable capacitor fully in the direction of the arrow.
Refer to 3-6. POINTER SETTING for installation of the knob (tune).



3-4. LID (CASSETTE)

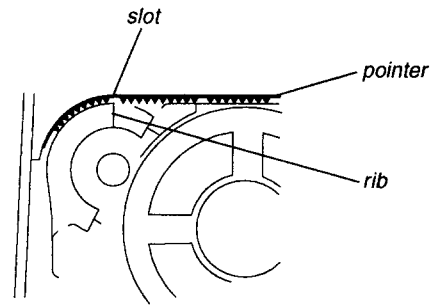
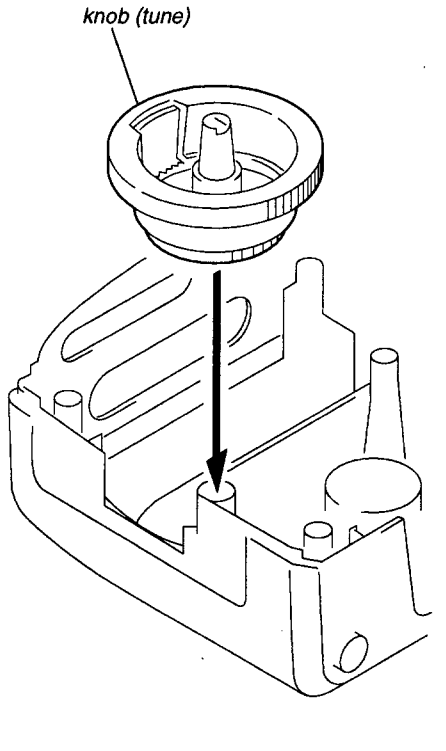


3-5. MECHANISM DECK ASSY

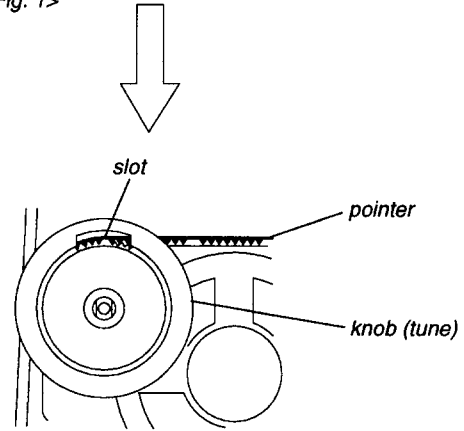


3-6. POINTER SETTING

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



<Fig. 1>



<Fig. 2>

SECTION 4 MECHANICAL ADJUSTMENTS

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 Tension	CQ-102C	1 – 5 g • cm (0.014 – 0.069 oz • inch)

SECTION 5 ELECTRICAL ADJUSTMENTS

5-1. TAPE RECORDER 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

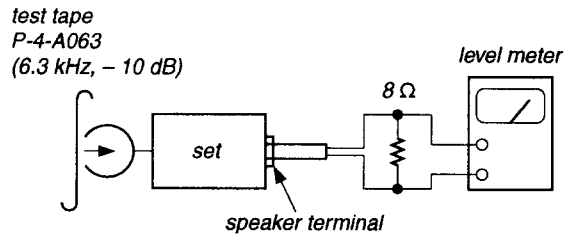
Playback Head Azimuth Adjustment

Setting :

VOLUME control : mechanical mid

Procedure :

- Mode : playback

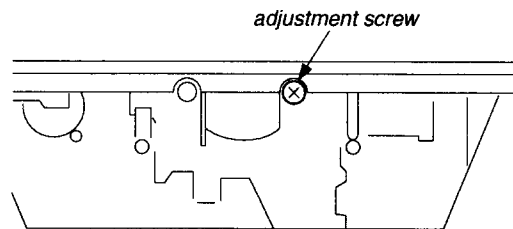


- Turn the adjustment screw to obtain the maximum reading on level meter.

Note : Several peaks may appear but take the maximum.

- After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :



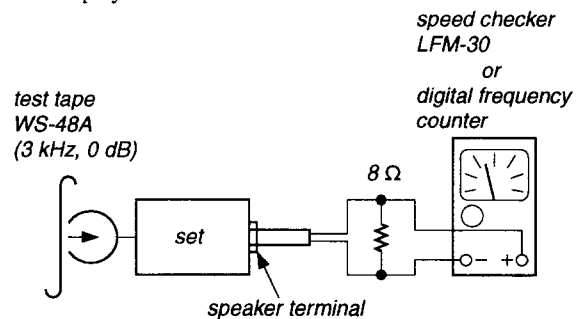
Tape Speed Adjustment

Setting :

VOLUME control : mechanical mid

Procedure :

- Mode : playback



Adjustment Value :

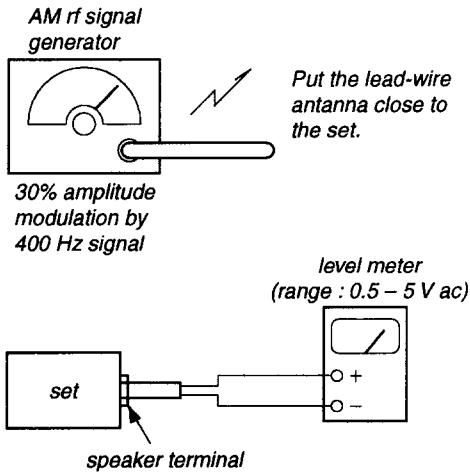
Speed checker	Adjustment point	Digital frequency counter
± 3 %	VR2	2,910 to 3,090 Hz

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

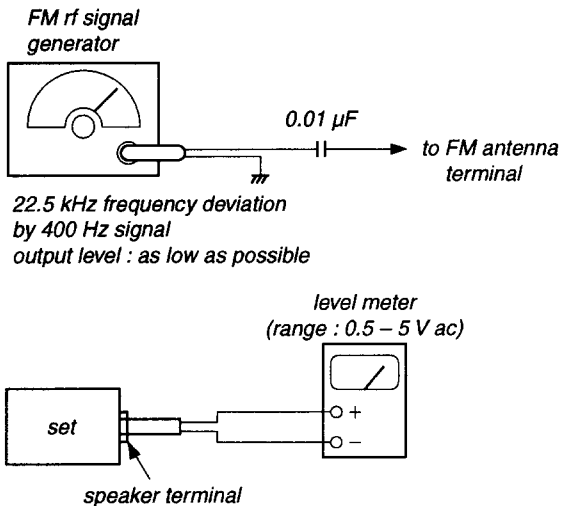
Adjustment Location : main board

5-2. RADIO SECTION

AM

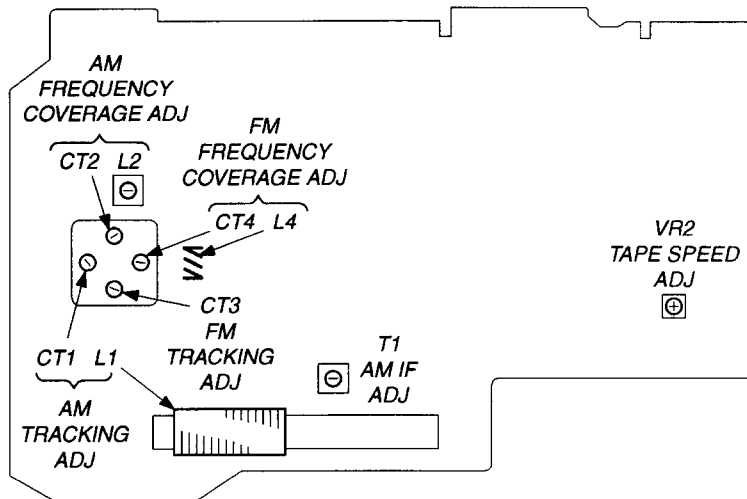


FM



- Repeat the procedures in 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

AM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on level meter.

L2

CT2

520 kHz (516.5 kHz)

1,650 kHz (1,631.5 kHz)

AM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

L1

CT1

600 kHz

1,400 kHz

FM FREQUENCY COVERAGE ADJUSTMENT

Adjust for a maximum reading on level meter.

L4

CT4

86.5 MHz (87.35 MHz)

109.5 MHz (108.25 MHz)

FM TRACKING ADJUSTMENT

Adjust for a maximum reading on level meter.

(confirmation)

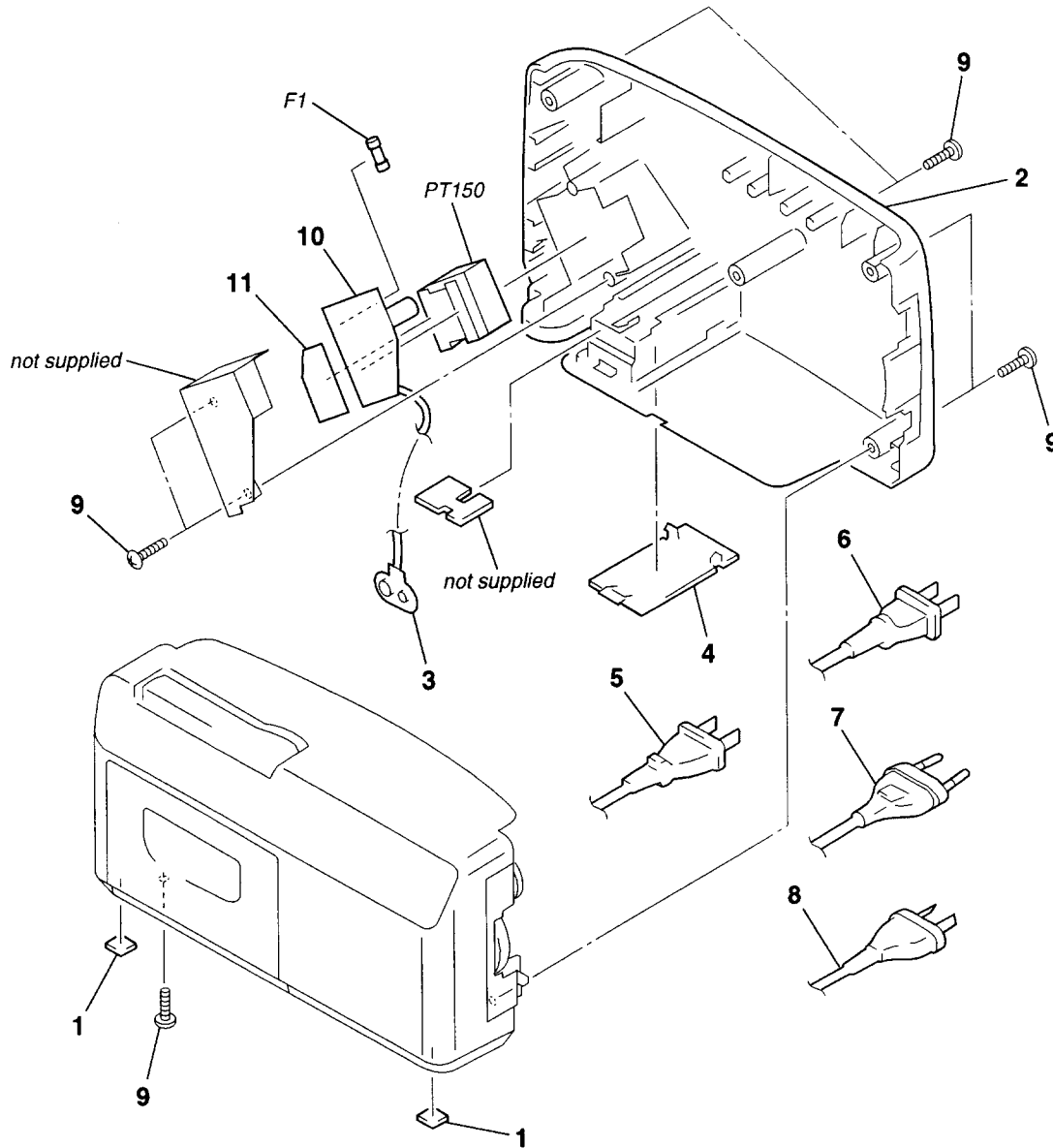
CT3

86.5 MHz (87.35 MHz)

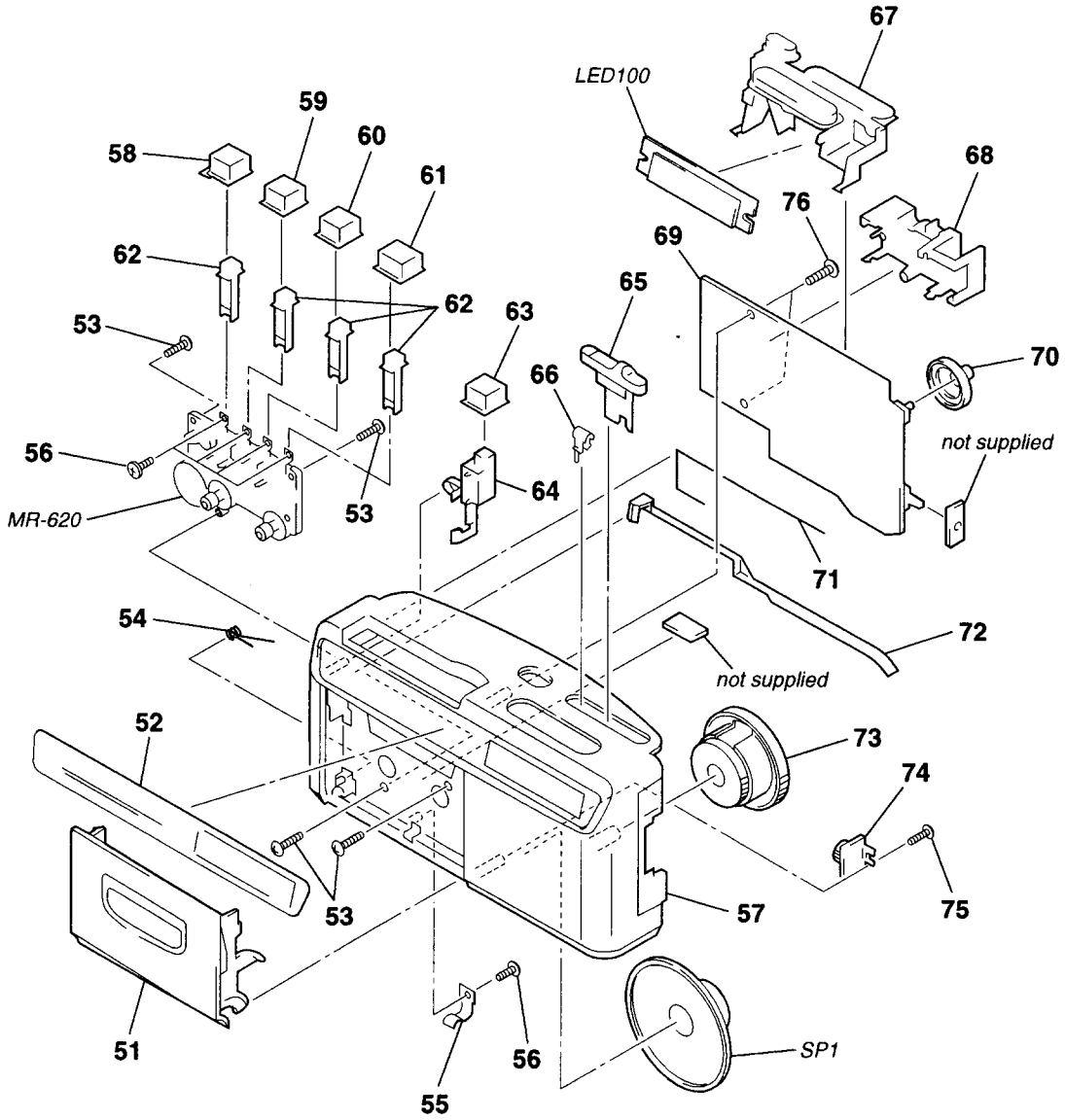
109.5 MHz (108.25 MHz)

() : Italian model

7-1. REAR CABINET SECTION



7-2. FRONT CABINET SECTION



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

