ORDER NO. AD9606146C3

Service Manual

Mini Cassette

DOLBY B NR* Stereo Radio Cassette Player

RQ-SX25V

Colour

(K).....Black Type

Area

(GH).....Hong Kong.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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AR10 Mechanism Series

Specifications

General:
Power Requirement:
Battery; DC 1.5V one "AA" size battery (not included)
(Panasonic R6, LR6 or equivalent not included)
Rechargeable Battery; DC1.2V with an included
Panasonic Rechargeable Battery (RP-BP61SYS1)x1
Power Output:
4mW+4mW...RMS (max.)
Output Jack:
Headphones; 32 ohm (stereo mini jack diameter 3.5)
Dimensions: 108.8 (Wide) / 77.0 (High) / 20.3 (Depth) mm
Weight: 164g (with rechargeable battery)
Charger: (RP-BC155AEY) (included)
Input; AC230V, 50Hz, 4VA
Output; DC 340mA, 1.2V
Playing time:
(When used in hold mode, at 25 °C on a flat and stable surface.)
The play time may be shorter depending on the operating conditions.
Panasonic Dry cell battery: R6/About 13h, LR6/About 30h
Rechargeable battery: About 10h
Panasonic Dry cell battery (R6) with rechargeable batteries: About 23 h
Panasonic Dry cell battery (LR6) with rechargeable batteries: About 40 h
Recharging time: About 2 hours

Radio:
Frequency Range:
AM; 522-1629 kHz (9 kHz steps/Japan mode)
520-1710 kHz (10 kHz steps mode)
FM; 87.5-108.0 MHz (AM 9kHz/10kHz steps mode)
76.0-90.0 MHz (Japan mode)
(0.1MHz steps)
TV; 1-12ch (Japan mode only)
Intermediate Frequency: AM; 450 kHz, FM; 10.6 MHz
Sensitivity: AM; 316.2μV/m/0.1mW output
FM; 4.5μV/0.1mW (-3dB Limit sense)
TV; 5.0μV/0.1mW (-3dB Limit sense)

Cassette Player:
Frequency Range (Normal/High/Metal): 40~18,000Hz
Motor: Electrical governor motor
Track System: 4-track 2-channel stereo playback
Tape Speed: 4.8cm/s

Note: Design and specifications are subject to change without notice.
Weight and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

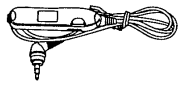
Panasonic®

■Contents

■Accessories

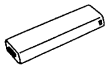
Stereo earphones.....1pc.
(RFEV316P-KS)

Remote controller.....1pc.
(RFEV001PVKS)

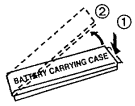


Charger.....1pc.
(RP-BC155AEY)

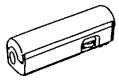
Rechargeable battery.....1pc.
(RP-BP61SYS1)



Rechargeable battery carrying case.....1pc.
(RFA0475-Q)



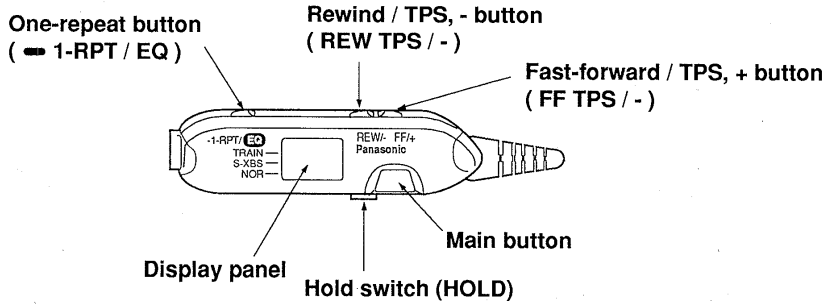
Dry cell battery case.....1pc.
(RFA0617-H)



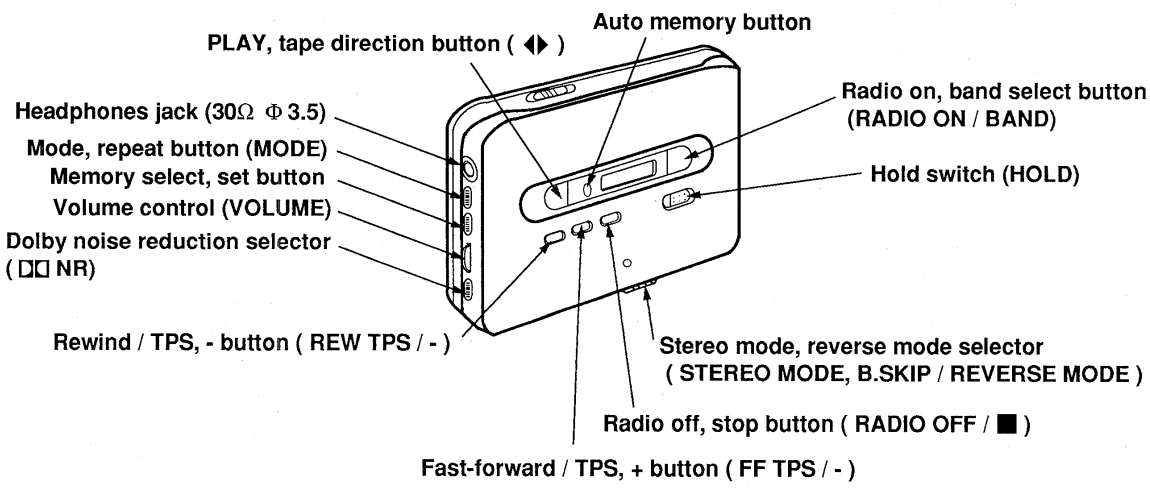
Carrying bag.....1pc.
(RFC0043A-K)

■Location of Controls

• Remote Controller



• Main Unit



■Power Sources

A Rechargeable battery

For its initial use after purchasing or after a long time interval (more than three months), be sure to recharge the rechargeable battery. Normally 2 hours recharging will give approximately 10 hours tape playback (at 25°C).

B Dry cell battery

■ To extend the playback time

Install both types of battery (rechargeable and dry cell battery) in the unit.

C When the battery becomes weak

The OPR/BATT indicator will dim or turn off. Recharge the rechargeable battery or replace the dry cell battery with new one.

■Before Use

D Connecting the stereo earphones and remote controller

Unless the earphones and remote controller are firmly inserted into the ∩ jack, the sound may become intermittent, or operation using the remote controller may become impossible.

■ Illuminated remote controller

Pressing any button on the remote controller or the unit lights the display for approximately 5 seconds, enabling easy use even in dark areas.

E Concerning the hold function

This function prevents the unit from operating even if one of the buttons is pressed in error.

To use the hold function

Set HOLD to the hold position (hold state).

- Both the main unit and remote controller have a HOLD switch, and each of them works individually.

■Preset Tuning

Frequencies of up to 18 radio stations (9 each AM and FM) can be stored in the memory.
Since the cord of the earphones acts as an FM antenna, connect the earphones when storing frequencies of FM stations in the memory.
Preparation: Release the hold state.

■ Auto memory function

Broadcast frequencies are automatically stored in the memory.

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO".
3. Press and hold AUTO.
   The frequencies of the each band are stored in order from small to large numbers of the frequencies in the memory.

When "ERROR" appears on the display:

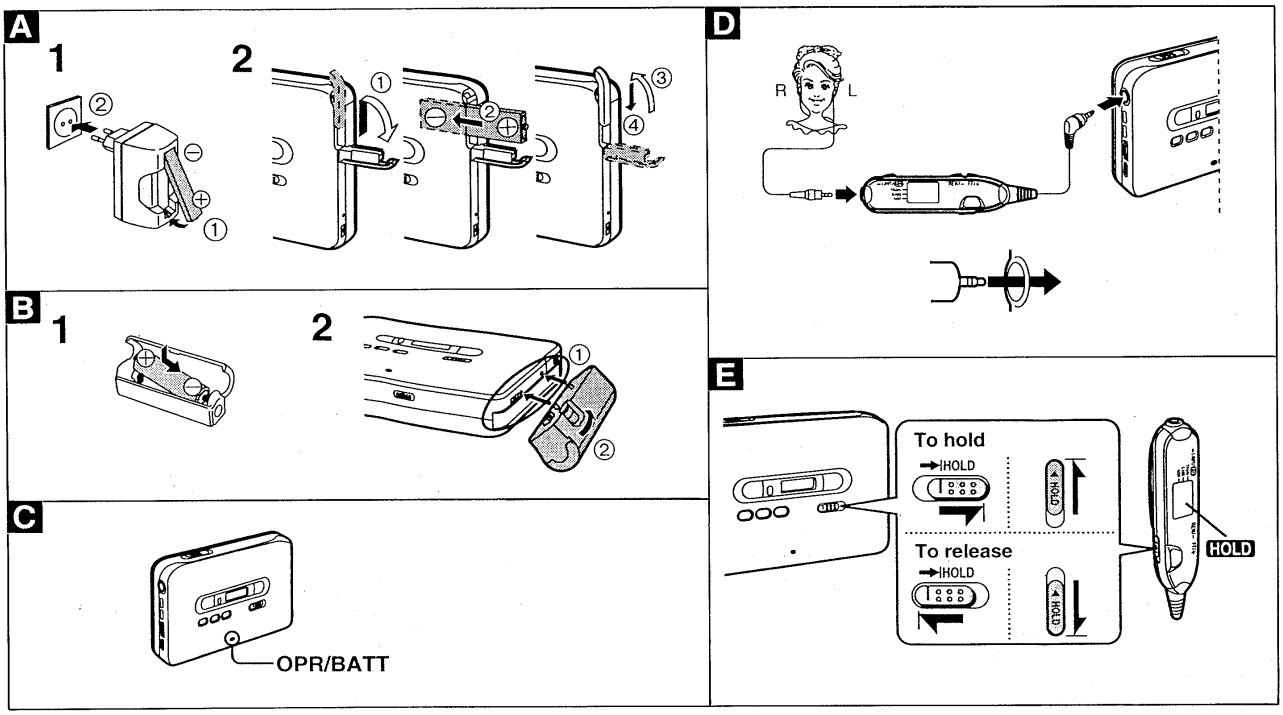
Any frequency could not be stored in the memory.
Preset favorite stations manually. (See below.)

■ Manual memory function

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO".
3. Press RADIO/BAND to select the band.
4. Press and hold MEMORY to have broadcast frequency indicated (flashing), and then press + or – to select the broadcast frequency.
5. Press MEMORY to have "M" and memory number indicated (flashing).
6. Press + or – to select the memory number.
7. Press MEMORY.

■ To erase the unnecessary memory channel

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO", and then press + or – to select the memory number to remove.
3. Press and hold MEMORY to have broadcast frequency indicated (flashing).
4. Press both + and – to display "----" (flashing).
5. Press MEMORY.



■Listening to the Radio(F)

1 Release the hold state.
2 Press RADIO/BAND to switch on the power.
3 Press MODE to display "MEMO" (MEMO mode) or not (free mode).
MEMO mode: To listen to the preset memory channel
Free mode: To listen to the desired station (not have been preset)
4 Press RADIO/BAND to select the band.
Each press changes the indication between AM and FM.
5 Press + or − to select the desired station.
MEMO mode: Preset memory number becomes higher (+) or lower (−).
Free mode: Broadcast frequency becomes higher (+) or lower (−).
6 Adjust the volume.

To stop listening:
Press OFF.

Auto tuning: (except MEMO mode)
Press and hold + or − until the displayed frequency begins to change. The changing will automatically stop if a broadcast frequency is located.
To stop automatic tuning, press + or − again.

■ To select the stereo/monaural of the FM

Set STEREO MODE to ST or MONO.

When there is a noise during FM reception:
Set STEREO MODE to MONO.
Though the sound becomes monaural, noise is reduced.

■ To obtain good reception

When listening to AM broadcast: G
As the built-in ferrite antenna works, try various directions to catch optimum reception.
When listening to FM broadcast:
As the cord of the earphone acts as an antenna, use it as extended as possible, not coiled.

■ To convert the AM frequency step

At the time of purchase, the AM band frequency changes by the step of 9 kHz. It can be converted from 9 to 10 kHz to receive radio stations in a different country or area, which cannot be tuned in with the 9 kHz step.
1. Press RADIO/BAND to switch on the power.
2. Press and hold MODE for more than five seconds.
3. Press + or − to select the step.
   Each press changes the indication among "UAM10", "EAM9" or "J".
   "UAM10": 10 kHz step. For the use in North and South America or part of Southeast Asia.
   "EAM9": 9 kHz step. For the use in Southeast Asia or Europe.
   "J": 9 kHz step. For the use in Japan.
4. Press and hold MEMORY for more than five seconds.

To return to the previous frequency step:
Follow steps 1 through 4 above.

Note:
Converting the frequency step erases the stations previously stored in the memory.

Area bank function (only for Japan mode "J"):
This unit equipped with an area bank function, allowing you to easily listen to previously stored stations in any of the 41 regions and JR (those JR Shinkansen lines equipped with on-board FM broadcasts).
Auto area bank function automatically select the area number according the region where you are.
1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "AREA".
3. Press and hold AUTO.

■Cautions

- To avoid product damage, do not expose this product to rain, water or other liquids.
- Avoid using or placing this unit near sources of heat. Do not leave it in an automobile exposed to direct sunlight for a long period of time with the doors and windows closed, as this may deform the cabinet.

Precautions for Listening with the Headphones
- Do not play your headset at a high volume. Hearing experts advise against continuous extended play.
- If you experience a ringing in your ears, reduce volume or discontinue use.
- Do not use while operating a motorized vehicle. It may create a traffic hazard and is illegal in many areas.
- You should use extreme caution or temporarily discontinue use in potentially hazardous situations.
- Even if your headset is an open-air type designed to let you hear outside sounds, don't turn up the volume so high that you can't hear what's around you.

Rechargeable battery and charger
- Use only the included charger when recharging.
- During recharging, it is normal for the charger and the rechargeable battery to become slightly warm.
- Do not leave the charger turned on for more than 12 hours at one time, otherwise, the rechargeable battery life may be shortened.
- Avoid recharging or placing the rechargeable battery near sources of heat or humidity.
- The included rechargeable battery can be recharged about 300 times. After that, its operation time becomes shortened. That's time for replacing the rechargeable battery.

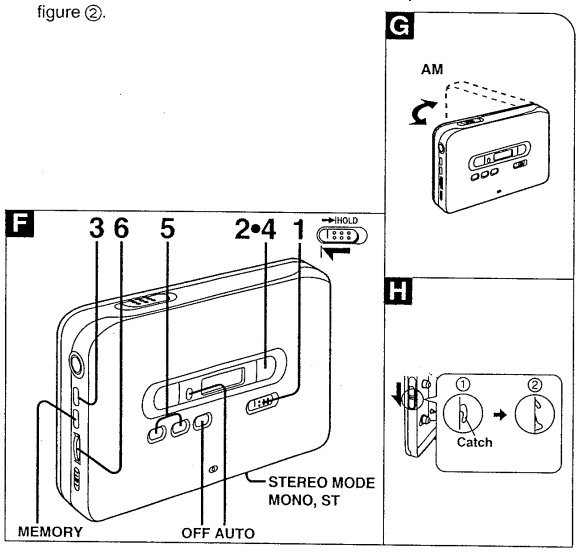
Dry cell battery and rechargeable battery
- Load new battery with their polarities (⊕ and ⊖) aligned correctly.
- Do not apply heat to batteries, or internal shortcircuit may occur.
- If this unit is not to be used for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately.

Do not peel of the plastic covering on the rechargeable battery. Short-circuiting may result which is dangerous.

Carrying batteries around
When putting dry batteries and rechargeable batteries in a pocket or bag ensure that no other metal objects such as a necklace are placed together with them. Contact with metal may cause short-circuiting which, in turn, may cause a fire. The same caution needs to be heeded with the battery case containing a dry battery. When carrying the rechargeable battery around, be absolutely sure to place it inside the included rechargeable battery case.

Endless tapes
Failure to operate these tapes correctly may cause the tape to wind around the revolving parts. For this unit, it is recommended to use the tape which is appropriate to the auto reverse mechanism.

H Cassette compartment cover
If the catch is in the position shown in the figure ①, the cassette compartment cover won't close. The compartment cover may be bent out of shape if an attempt is made to forcibly close the cover. If this occurs, slide OPEN so that the catch is in the position shown in the figure ②.



■Listening to Tape (I)

This unit is equipped with an auto tape select function, so you can use normal, high or metal position types of tape.

1 Insert a cassette tape.
Closing the cover, the tape slack will be wound automatically and playback will be expected to start from the side A.

2 Release the hold state.

3 Press ◄ ►.

4 Adjust the volume.

To stop playback:
Press ■.

To change the tape direction
Press ◄ ► during playback.

Automatic side A/B detection function:
This unit has a function that detects which side is being played, using the cutout screw hole on side A of the cassette. If there is no cutout on the cassette, the cutout is on side B, or depending on other features of certain cassette types, the side may not be correctly detected.

To change the play mode
Select the position of the play mode selector (ON/↻, OFF/⇄).

ON/↻: Both sides of the cassette are played continuously. Blank-skip function works.

OFF/⇄: The forward and reverse sides of the cassette are played once and then the playback stops. Blank-skip function doesn't work.

Blank-skip function (B.S):
When a silent part of more than 13 seconds is detected during playback, fast-forwarding automatically starts and then playback of the opposite side of the cassette starts from the beginning.

- When playback is started at the point close to the end of the last song, it may not work properly.
- When small sound continues for more than 13 seconds, the unit may start fast-forwarding. When you listen to a classical music, set the selector to the OFF/⇄ position to release the Blank-skip function.

To play the tape with Dolby NR
Set DD NR selector to ON.

To fast forward (FF) or rewind (REW)
Press FF or REW in the stop mode.

To find the beginning of a song (TPS: Tape Program Sensor)
Press FF or REW during playback.
You can skip as many songs as the number of times the button is pressed (up to 9 times).
FF: You can skip forward (FF TPS).
REW: You can skip backward (REW TPS).

J To repeat a current song (ONE-REPEAT)
(Available only from the remote controller)
Press and hold ▬ 1-RPT/EQ on the remote controller during playback.

To cancel the ONE-REPEAT:
Press and hold ▬ 1-RPT/EQ once more.
ONE-REPEAT is also cancelled when tape operations are switched.

J To search a song on the cassette (Intro-scan)
(Available only from the remote controller)
Allows you to listen to the beginning portion (intro) of the songs for about 10 seconds each, in order.

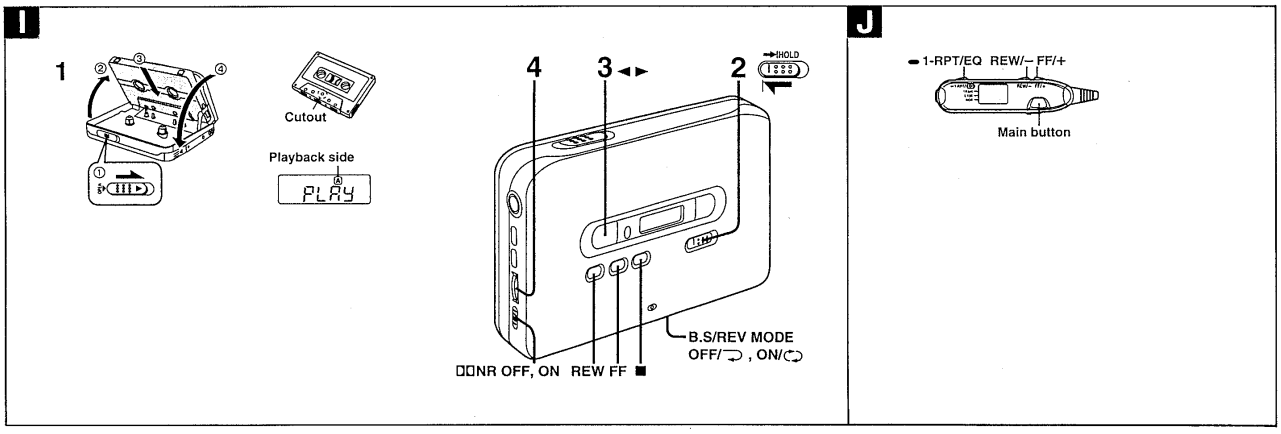
Press and hold FF/+ or REW/− in the stop mode.
FF/+: Fast forward starts.
REW/−: Rewind starts.

To cancel the Intro-scan and resume normal playback:
Press main button once.

Notes:
Since making use of the silent part between songs, the TPS, ONE-REPEAT and the Intro-scan function may fail to function properly in the following situations:

- When the silent part between songs is less than 4 seconds or has noise.
- When the next silent part is less than 10 seconds away.
- When there is a long silent part or particularly low or small sound in the song.

During TPS or Intro-scan, the unit automatically reverses when the end of the cassette tape is reached and operation continues. However, if the end of a cassette tape is detected three times, the tape automatically stops.



■Remote Control Operation

Before using VOL on the remote controller, be sure to adjust the volume control on the main unit. "5–7" is the average volume level.

•: Press.
▬: Press and hold.

Confirmation beep can be heard as shown in the figure.

J K Operating the radio

J L Operating the cassette player

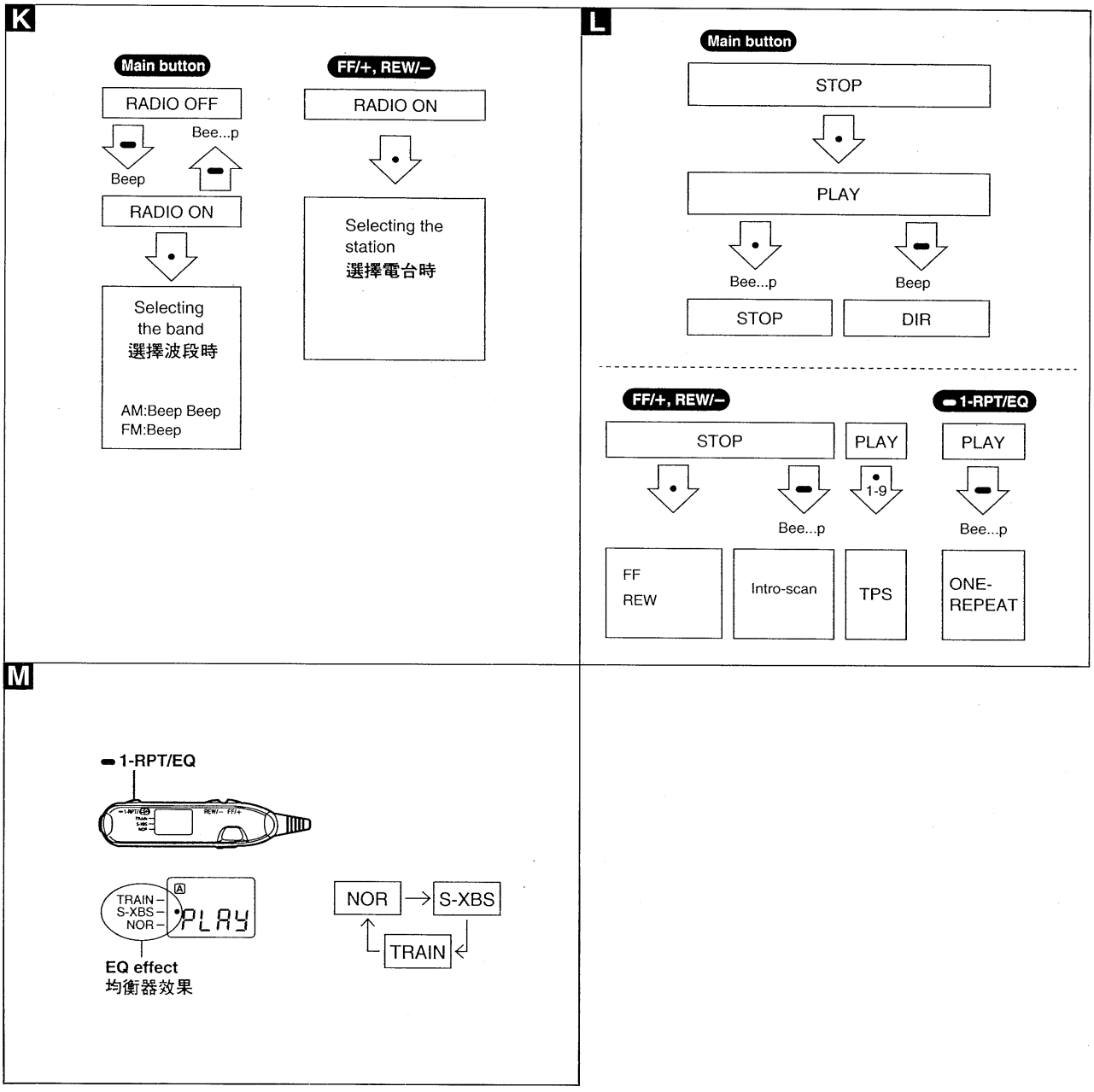
The beep tone, which is emitted when the button is pressed once in the stop mode, indicates that a cassette is not inserted.

■To Change the Tone (M)

(Available only from the remote controller)

Every time you press ▬ 1-RPT/EQ during playback or radio reception, the EQ effect will change as follows in turn.

NOR:
The EQ effect is cancelled.
S-XBS:
Boosts the low frequency range.
•If the sound distortion occurs, turn down the volume.
TRAIN:
Gives a more natural quality to the sound and reduces strain and fatigue when you listen for a long time. It also cuts down the audible level of sound which disturbs people around you.



■Service Mode

This unit and its remote controller have a service mode which can be used to locate errors and faults (the remote controller and stereo earphones are detachable. Refer to this document to provide service and repairs.

Quick reference for service mode errors

The following table shows error identification criteria:

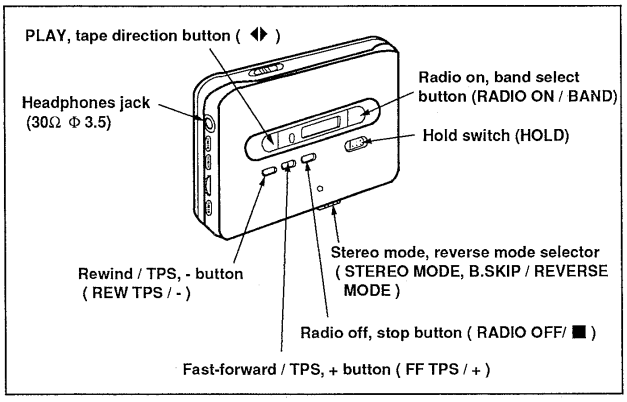
Service mode		Component	Judgment criteria			
(1)	Unit and stereo earphones test	Unit	OK	OK	NG	NG
		Stereo earphones	OK	NG	OK	NG
		Location of fault	No faults	Stereo earphones	Unit	Unit and stereo earphones
(2)	Remote controller and stereo earphones test	Remote controller	OK	OK	NG	NG
		Stereo earphones	OK	NG	OK	NG
		Location of fault	No faults	Stereo earphones	Remote controller	Remote controller and stereo earphones

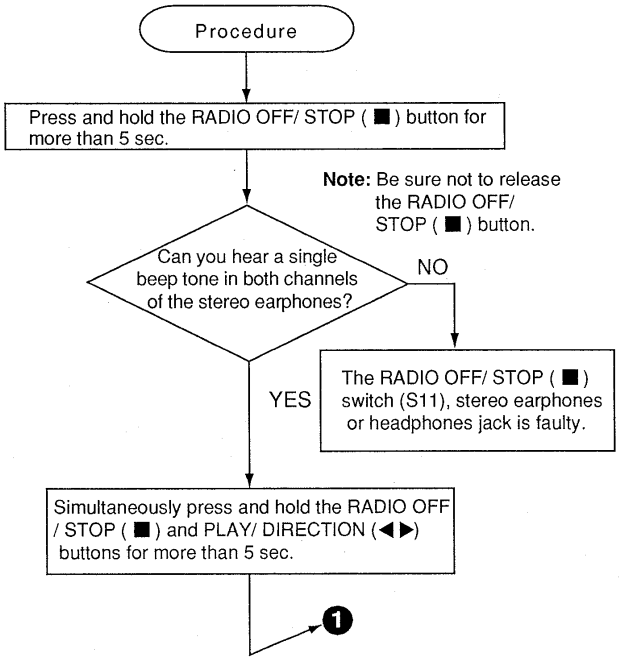
(1) Checking the unit and stereo earphones

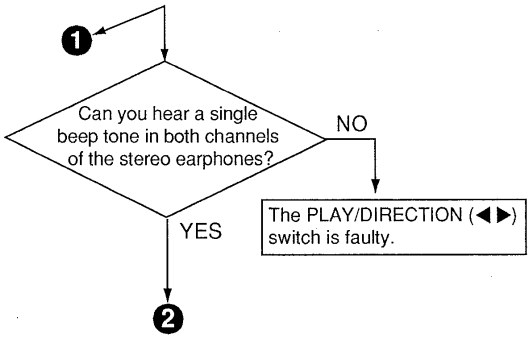
Preparations:

1. Firmly plug the stereo earphones into the headphones jack.
2. Install fully-charged rechargeable or R6/ LR6 dry cell batteries into the battery compartment.
3. Load a music tape into the unit and close the cassette compartment lid.
4. Make sure the HOLD button on the unit is off.
5. Set the Stereo Mode, Blank Skip/Reverse Mode switch to "OFF/ ⊃".

• Location of controls and connections on the unit







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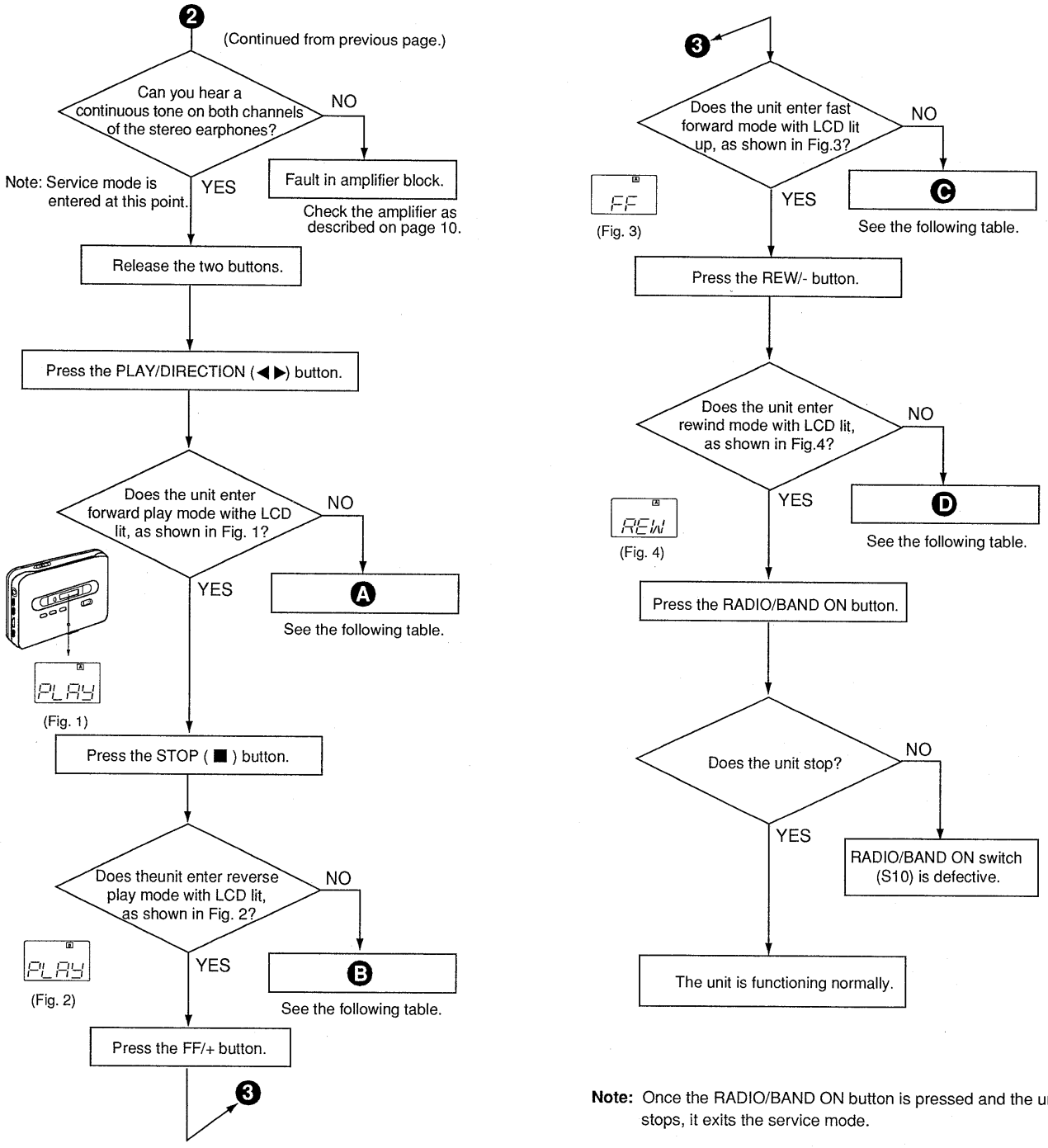


Note: Once the RADIO/BAND ON button is pressed and the unit stops, it exits the service mode.

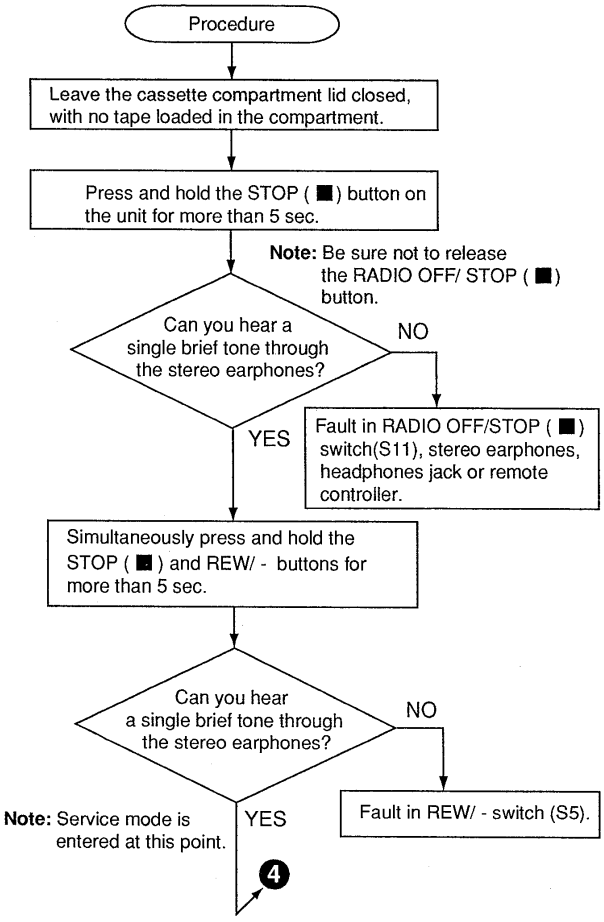
• Troubleshooting

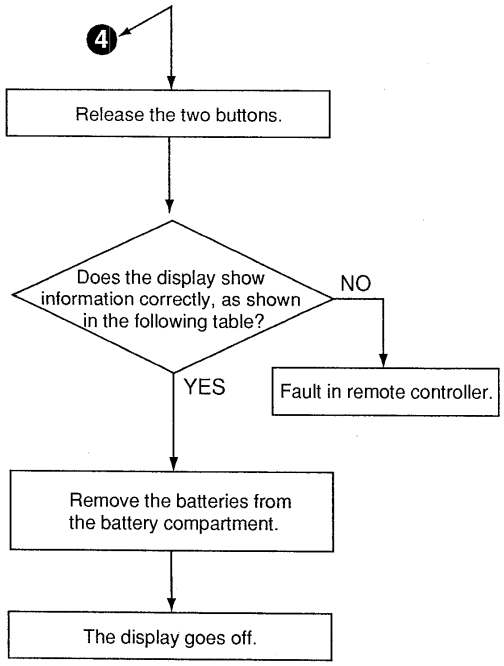
Location of fault	Symptom	Faulty component
A	The unit fails to enter play mode or change the direction of play when the PLAY/DIRECTION (◀▶) button is pressed.	Fault in S7(PLAY/ DIRECTION), S11(RADIO OFF/ STOP) or motor.
B		
C	The unit fails to enter fast forward mode when the FF/+ button is pressed.	Fault in S8(FF/+).
D	The unit fails to enter rewind mode when the REW/- button is pressed.	Fault in S5(REW/ -).

(2) Checking the remote controller and stereo earphones

Preparations:

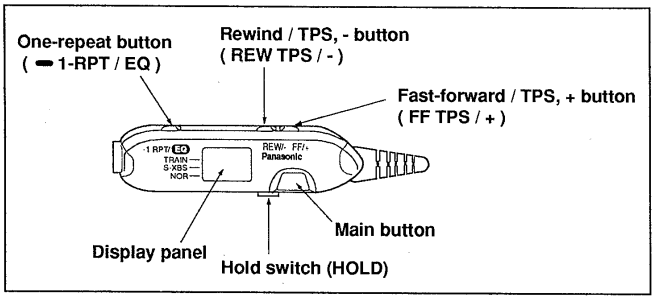
1. Firmly plug the remote controller into the headphones jack.
2. Firmly plug the stereo earphones into the remote controller.
3. Install fully-charged rechargeable or R6/ LR6 dry cell batteries into the battery compartment.
4. Leave the cassette compartment lid closed, with no tape loaded in the compartment.
5. Make sure the HOLD buttons on the unit and remote controller are off.



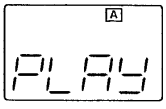
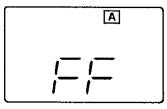
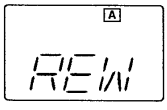
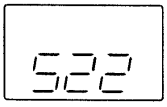


Note: The remote controller will continue to display the information last called up in service mode. Once the batteries are removed from the unit, it exits the service mode.

• Location of controls and connections on the remote controller



• Procedure for testing the remote controller

Remote controller operation	Enters service mode. →	Press main button. →	Press FF button. →	Press REW button. →	Press One-repeat/ EQ button.
Normal information display					
	" PLAY " is displayed on the display panel.	" FF " is displayed on the display panel.	" REW " is displayed on the display panel.	" S22 " is displayed on the display panel.	After a single tone in the both channels of the stereo earphones hear, the display panel glows blue and " OFF " is displayed for about 5 sec.

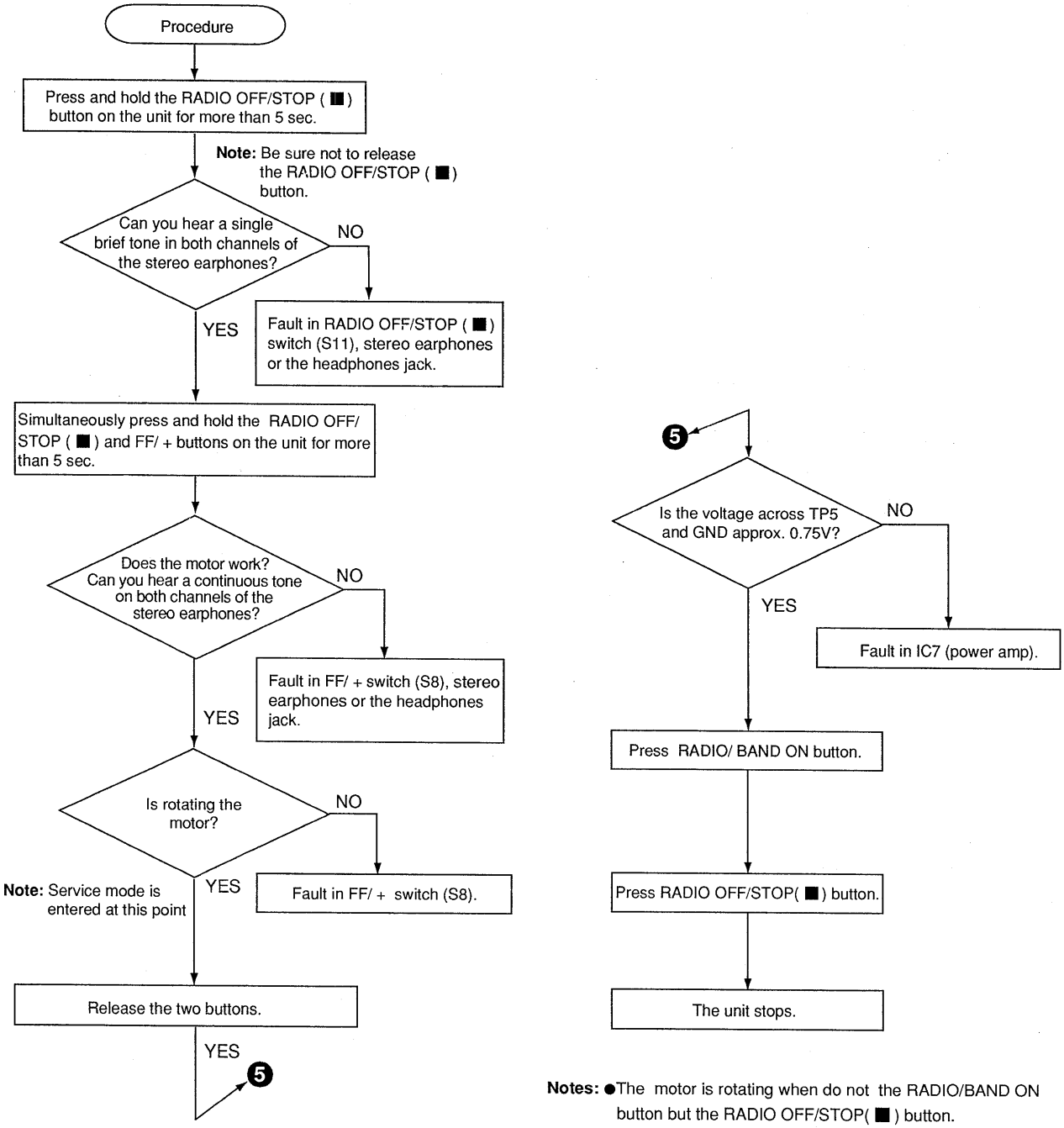
• The remote controller is functioning normally if it displays information as shown in the table above.

(3) Checking the amplifier block

The following procedure is only necessary if a fault in the amplifier block was detected during testing of the unit or stereo earphones.

Preparations:

1. Make sure the HOLD button on the unit is off.
2. Follow the steps described in Step 12 of checking for the main P.C.B. on page 14.
3. Firmly plug the stereo earphones into the headphones jack.



Notes: ●The motor is rotating when do not the RADIO/BAND ON button but the RADIO OFF/STOP(■) button.
●Push the RADIO/BAND ON button after the motor stopped.
●In service mode, the unit stays in fast forward mode until the RADIO OFF/STOP(■) button is pressed, at which time the unit exits service mode.

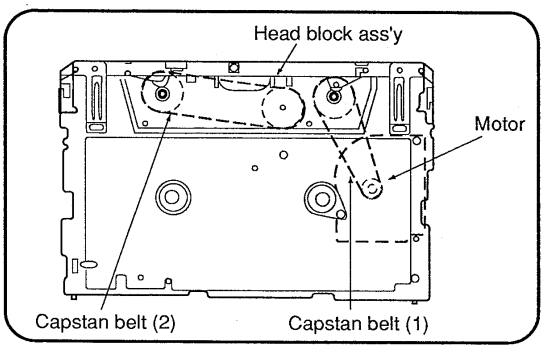
■Mechanism Block Replacement Procedure

• Mechanism block replacement

Repair parts are supplied in the form of a mechanism block ass'y, from which the head block, motor, and capstan belts (1) and (2) are removed.
Before replacing the mechanism block, perform the following steps :

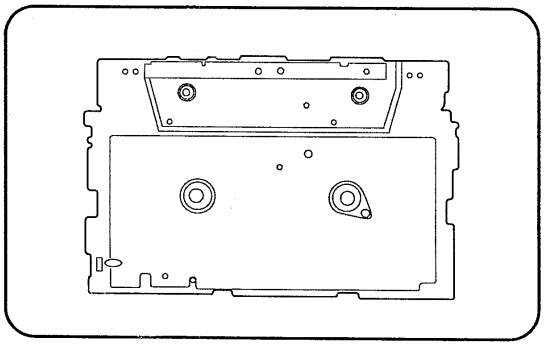
Preparations

Remove the head block, motor, and capstan belts (1) and (2) from the unit, and install them in the mechanism block ass'y (for disassembly, refer to Operation Checks and Main Component Replacement Procedure).



Mechanism block

Fig.1



Mechanism block ass'y

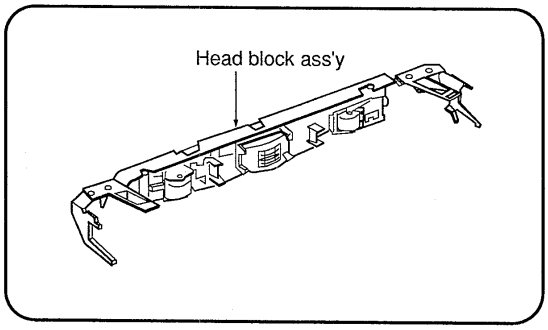
Fig.2

※ No adjustment is needed after replacement.

• Head block replacement

Repair parts are supplied in the form of a complete head block ass'y, which includes the head, head arm spring, and pinch roller arms (F) and (R) .
The head arm spring and pinch roller arms can also be supplied separately on request.

※No head azimuth adjustment is needed.



Head block ass'y

Fig.3

■ Operation Checks and Main Component Replacement Procedures

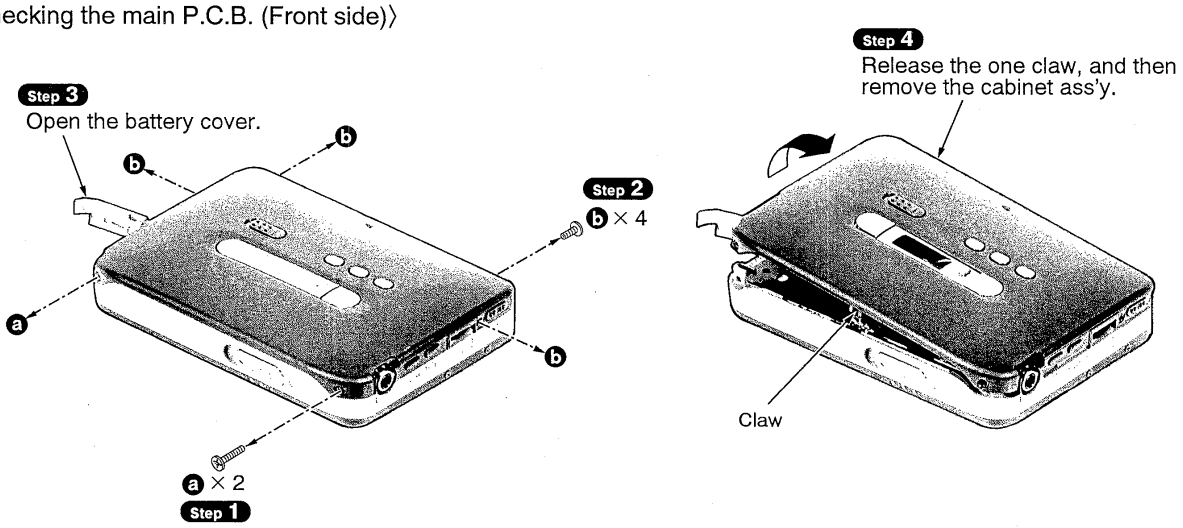
NOTE

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Illustrated screws are equivalent to actual size.**
4. **[ ] indicates parts No.**

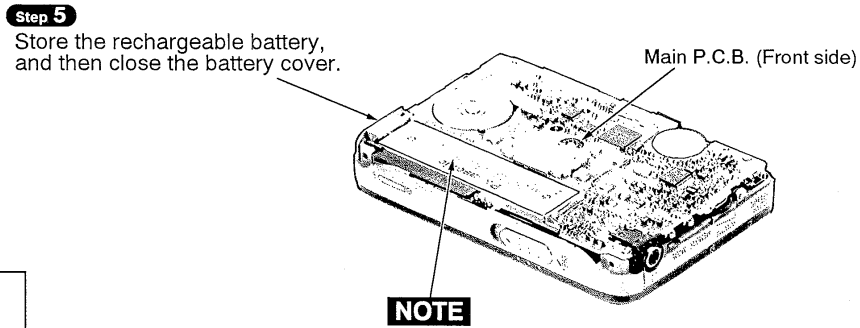
• Contents

1. Checking for the main P.C.B.

〈Checking the main P.C.B. (Front side)〉



• Check the main P.C.B. (Front side) as shown below.



NOTE

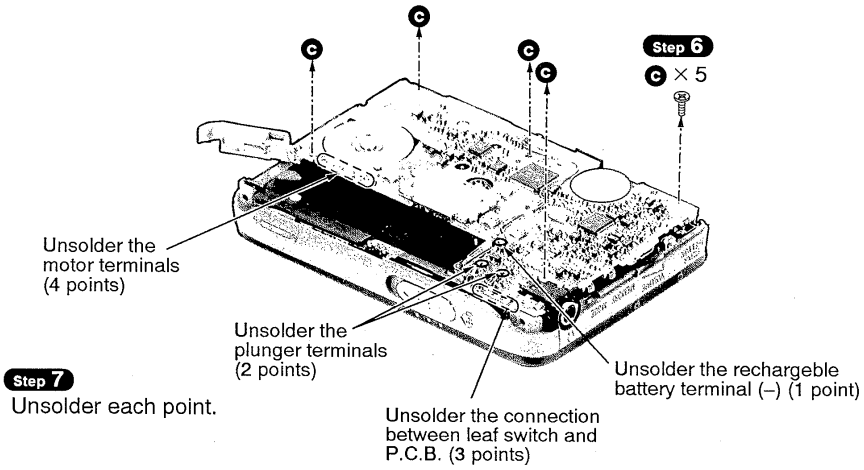
The rechargeable battery should be recharged fully.

ⓐ [RHQ0061–K]

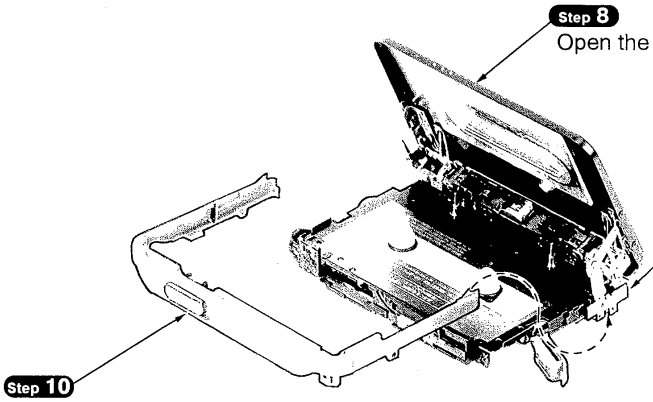
ⓑ [RHQ0059–K]

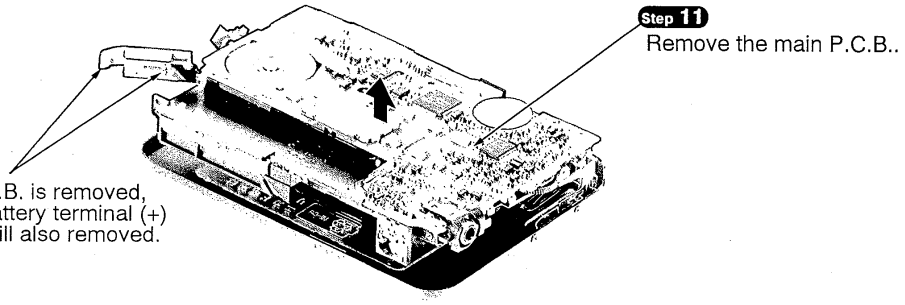
〈Removal for checking the main P.C.B. (Back side)〉

[RHQ0060–N]



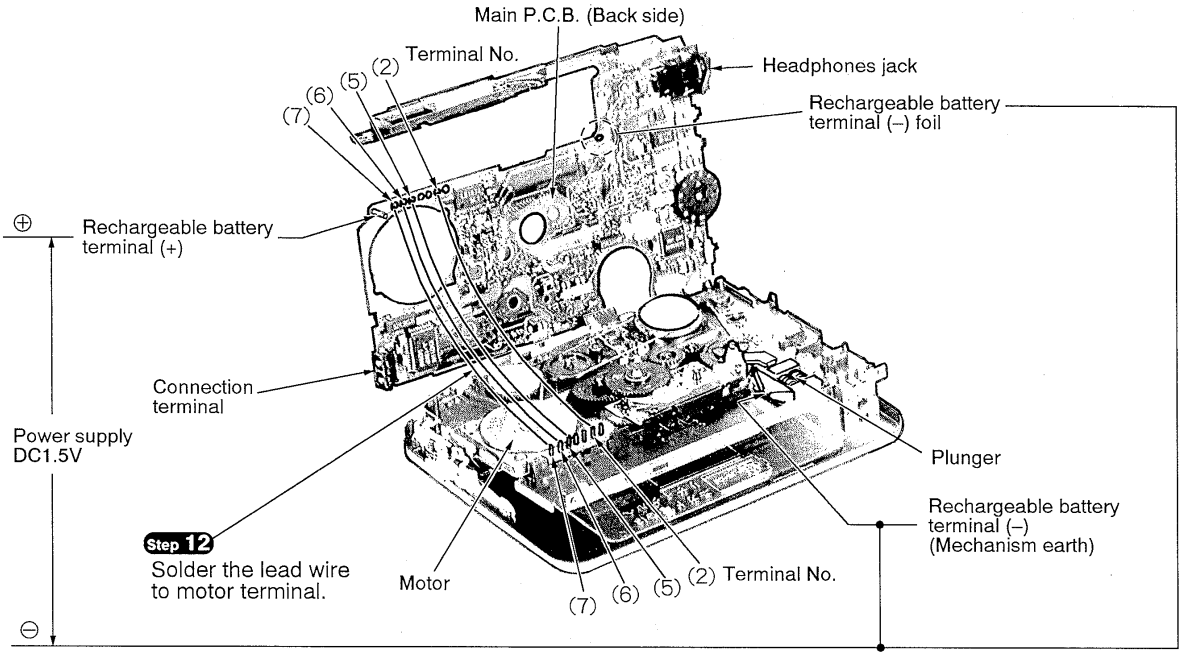
Step 7
Unsolder each point.





NOTE
When the main P.C.B. is removed, the rechargeable battery terminal (+) and battery cover will also removed.

• **Check the main P.C.B. (Back side) as shown below.**

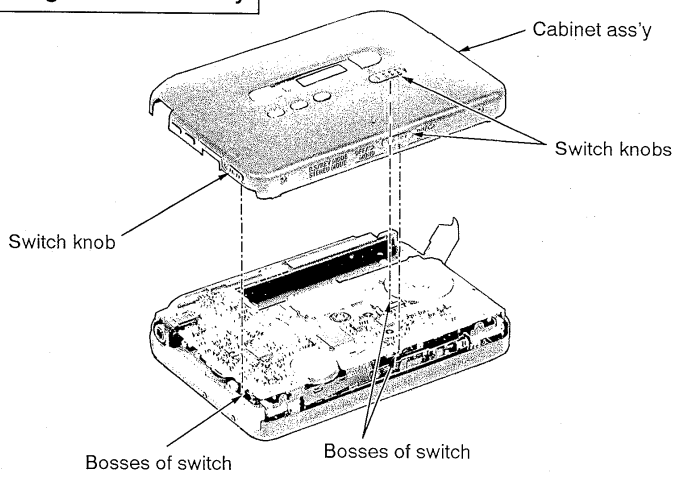


■ Operation Checks

• Confirm that the beeper sounds once by headphones when depressing the RADIO OFF/STOP (■) button more then 5 sec. under above condition, and then depress the RADIO OFF/STOP (■) and FWD (FF) buttons at same time more than 5 sec.. Keep the finger away from those buttons after that, so the FF mode will be operated.
For more information about mode setting, refer to "**(3) Checking the amplifier block**" of service mode on page 10.

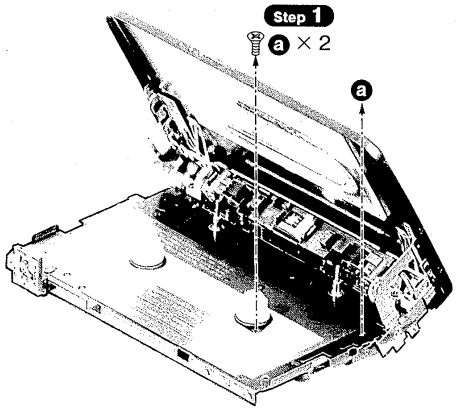
Notice for installing the knobs and assembling the cabinet ass'y

• Make sure the bosses of switch are fit in the switch knobs when assembling.



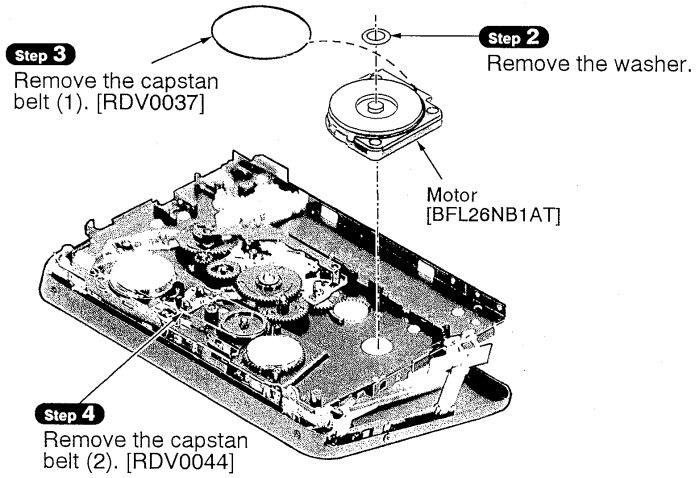
2. Replacement for the motor and capstan belt

• Follow Step 1 ~ Step 4 , Step 6 ~ Step 11 in item 1 on pages 12 and 13.



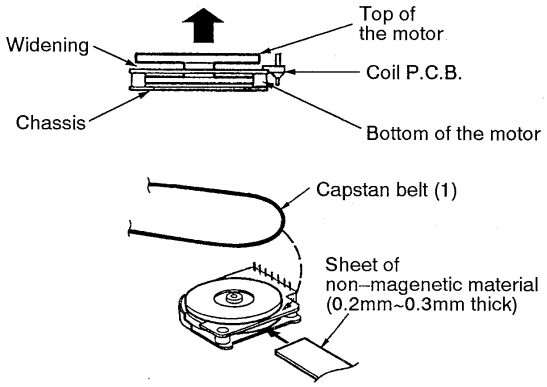
(Upset the unit)

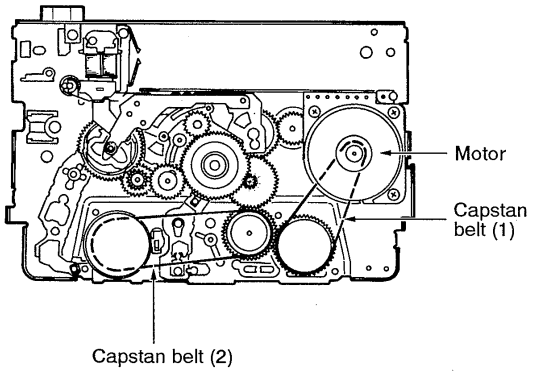
Grease a
[XQS14+A2FZ]



Installing the capstan belt (1)

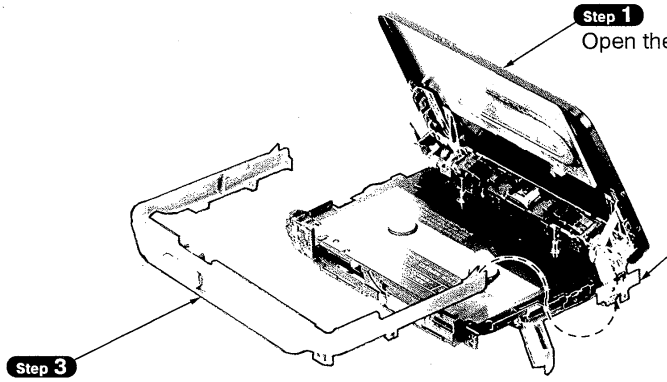
- When install the capstan belt (1) to motor, push up the motor by insert the non–magnetic material sheet between bottom of the motor and the chassis, and install the capstan belt (1) between top of the motor and the coil P.C.B..

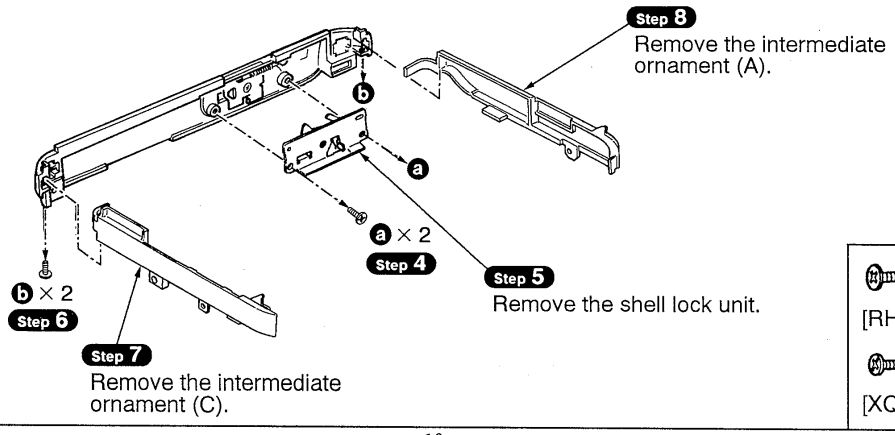




3. Replacement for the intermediate ornament (A), intermediate ornament (B), intermediate ornament (C) and open knob ass'y

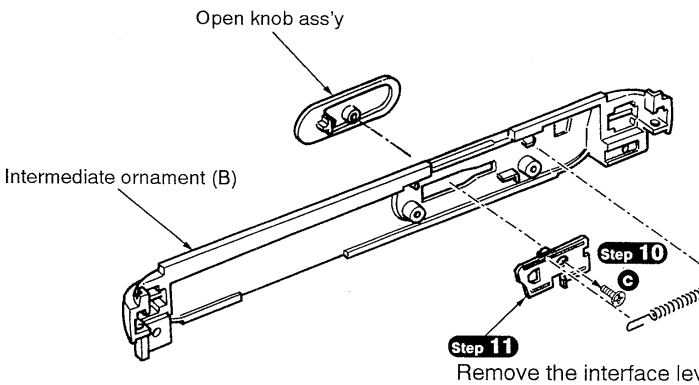
- Follow Step 1 ~ Step 4 in item 1 on page 12.





ⓐ [RHE5119YA]

ⓑ [XQN14+BG4FZ]



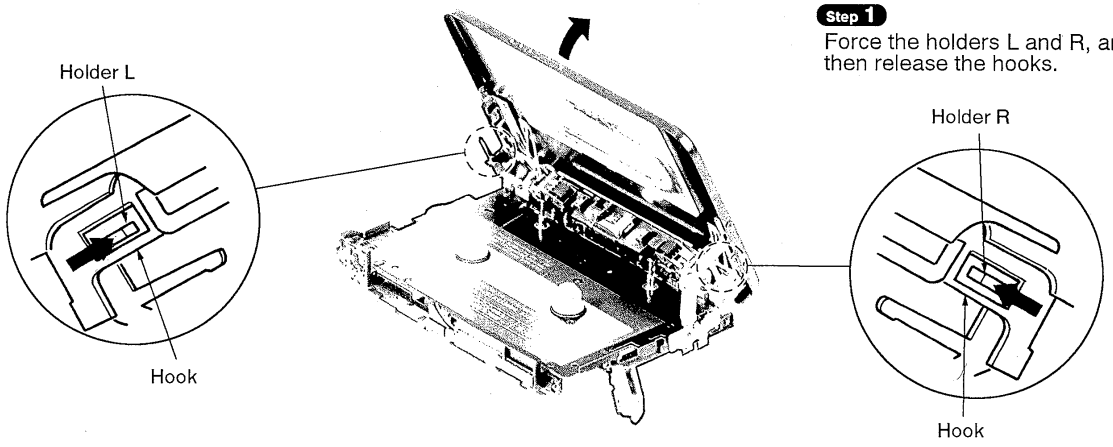
Step 9
Remove the auto return spring.

Step 11
Remove the interface lever.

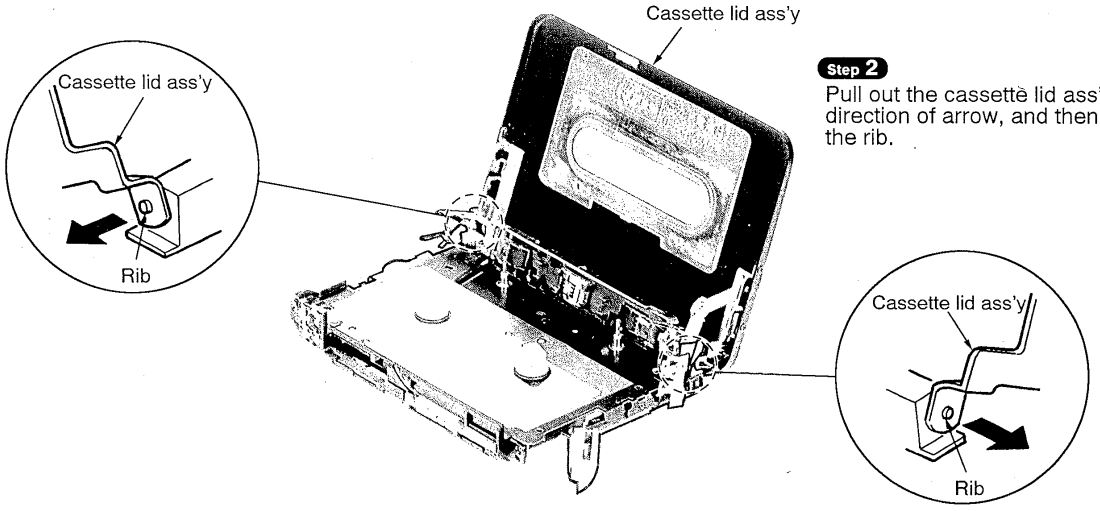
C
[RHQ0032–K]

4. Replacement for the head block ass'y

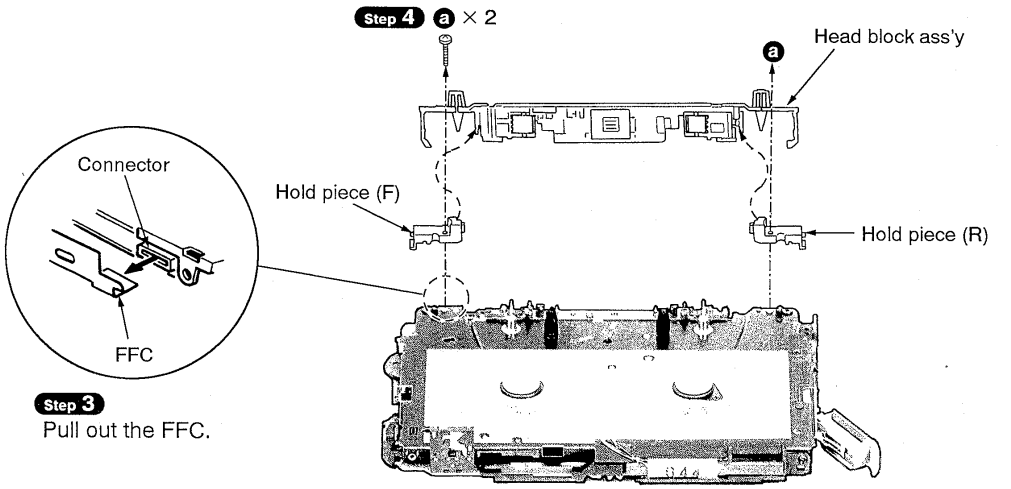
- Follow Step 1 ~ Step 4 in item 1 on page 12.
- Follow Step 1 ~ Step 3 in item 3 on page 16.



Step 1
Force the holders L and R, and then release the hooks.



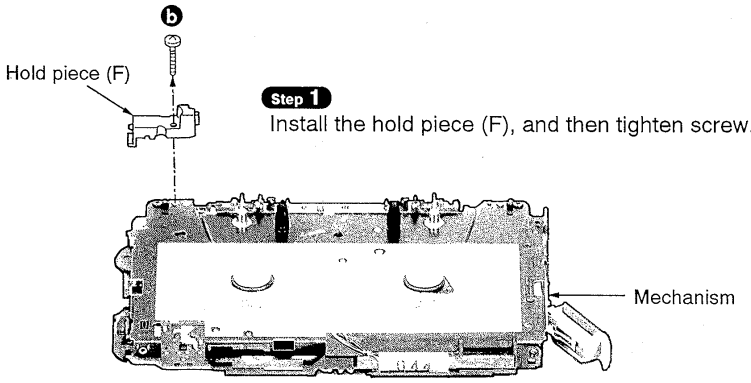
Step 2
Pull out the cassette lid ass'y in the direction of arrow, and then release the rib.



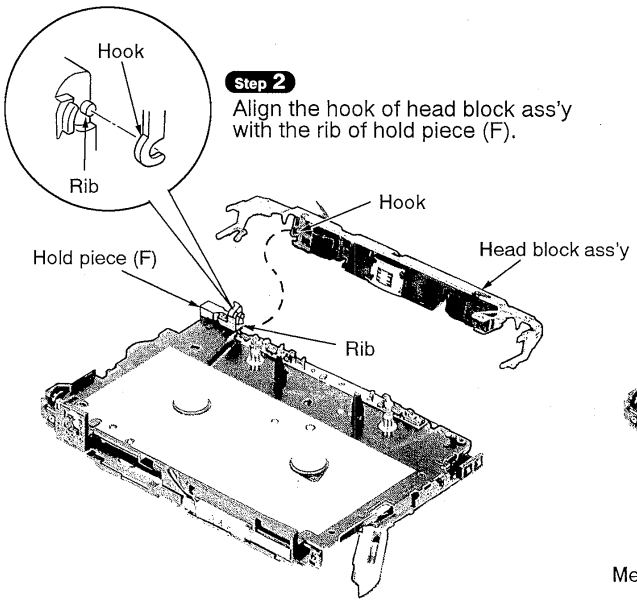
Step 3
Pull out the FFC.

ⓐ, ⓑ, ⓒ
[RHD14047]

Assembly procedures for head block ass'y after replacement



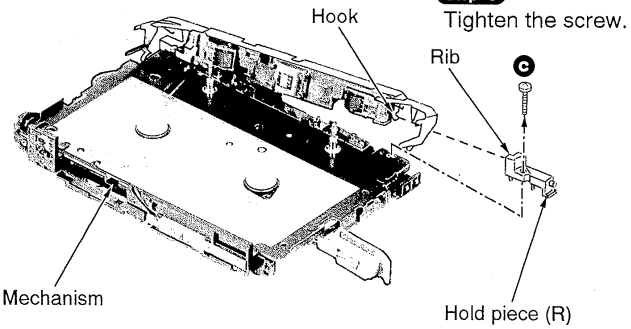
Step 1
Install the hold piece (F), and then tighten screw.



Step 2
Align the hook of head block ass'y with the rib of hold piece (F).

Step 3
Align the hook of head block ass'y with the rib of hold piece (R), and then install the hold piece (R) to the mechanism.

Step 4
Tighten the screw.



■Mesurements and Adjustments

• Preparation for Adjustment

Follow " step 1~ step 5 " in item on page 12.

• Measurement Condition

1. Set volume control to maximum.
2. Set Dolby NR switch to OFF.
3. Set RADIO/BAND switch to ON (FM stereo,AM/FM/TV RF adjustment).
4. Release the hold state.
5. Set power source voltage to 1.5V DC.

• Mesuring Instruments and Special Tools

1. Signal generator (AM, FM, TV)
2. Oscilloscope
3. Frequency counter

• Radio Section

• AM / FM / TV RF Adjustment

Band	Signal Generator		Display Setting	Indicator (Oscilloscope)	Adjustment Point	Remarks
	Connection	Frequency				
AM	Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	594kHz	594kHz	Headphones jack (32Ω) (Refer to **Fig.2**)	**L11** (Refer to **Fig. 3**)	Adjust **L11** for maximum output.
FM	TP28 ... (+) TP27 ... (-) (Refer to **Fig. 1**)	90MHz	90MHz	Headphones jack (32Ω) (Refer to **Fig.2**)	**CT1** (Refer to **Fig. 3**)	Adjust **CT1** for maximum output.
TV	TP28 ... (+) TP27 ... (-) (Refer to **Fig. 1**)	197.75MHz (8ch)	8ch	Headphones jack (32Ω) (Refer to **Fig.2**)	**CT2** (Refer to **Fig. 3**)	Adjust **CT2** for maximum output.

• FM Stereo Adjustment

Item	Input	Output	Adjustment Point	Procedure
FM Stereo adjustment	76MHz, 66dB TP28 ... (+) TP27 ... (-) (Refer to **Fig. 1**)	TP202 ... (+) TP27 ... (-) (Connect a 220kΩ~330kΩ resistor between the test points TP202 and TP27 .) (Refer to **Fig. 1**)	**VR3** (Refer to **Fig. 2**)	1. Set STEREO MODE switch to ST. 2. Adjust **VR3** for **19 kHz ± 50 Hz** reading on frequency counter.

• Tape Section

Item	Test Tape	Measurement Point	Adjustment Point	Procedure
Tape speed adjustment	QZZCWAT (3kHz, −10dB)	Connect the frequency counter to Headphones jack (32Ω) (Refer to **Fig.1**)	**VR402** (Refer to **Fig. 3**)	Playback the central part of the tape and adjust **VR402** so that the tape speed is as follows. Forward: **3000±20Hz** Reverse: **2970~3080Hz** Make sure that the frequency range in within **±60Hz** for between "Forward" and "Reverse" mode.

Note: The playback head is supplied on the head arm assembly. (See the "Mechanism Parts Location" on page 39.)
The assembly requires no adjustment.

• Adjustment Point

Note: This printed board diagram shows a view the layer 4 side of pattern drawing (A) as shown in **Fig. 1**..

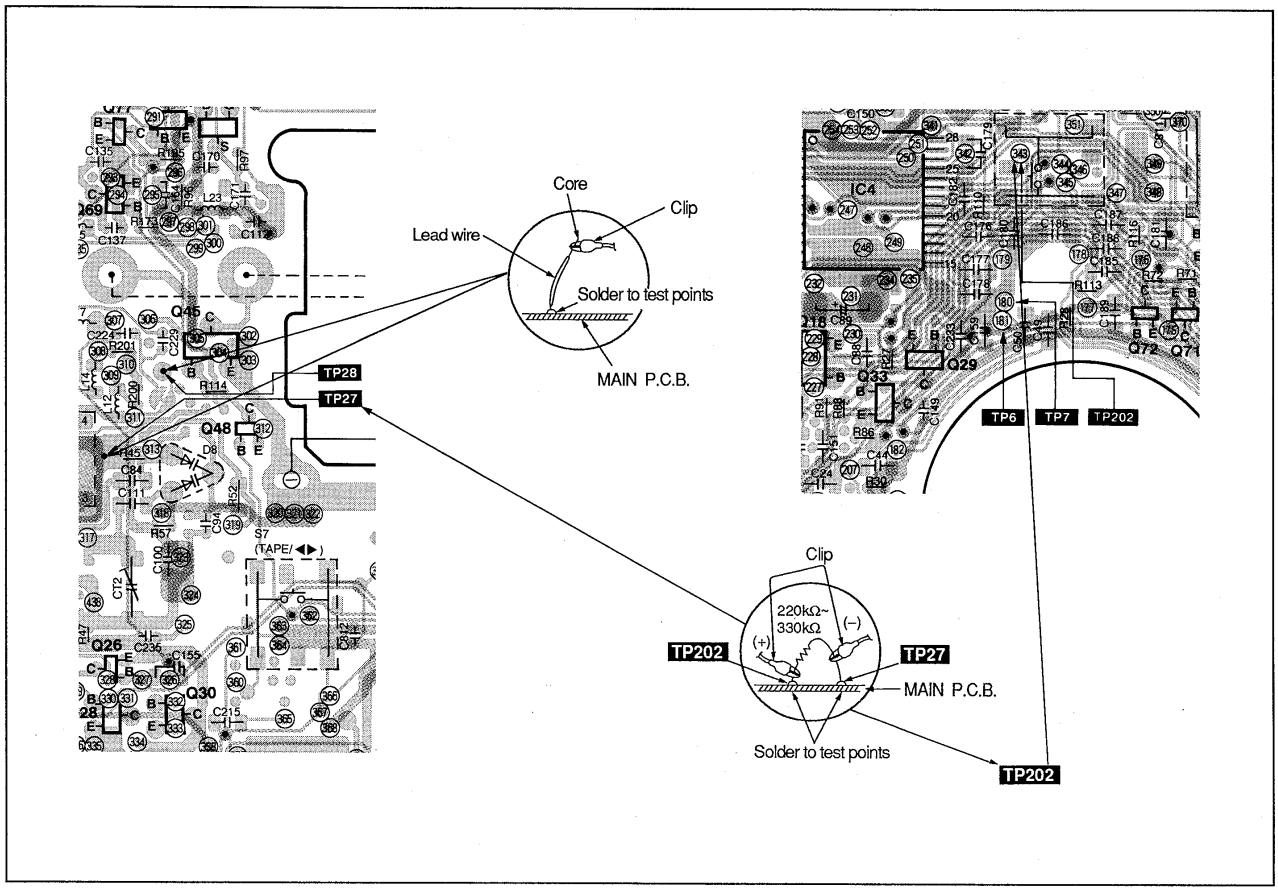


Fig. 1

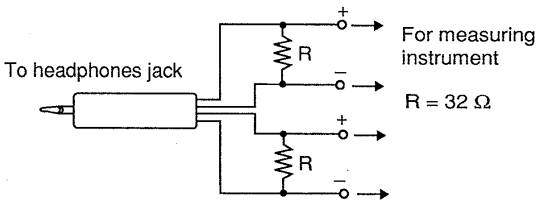


Fig. 2

Note: This adjustment points shown a front view of the IC5 mounting surface as shown in **Fig. 3**.

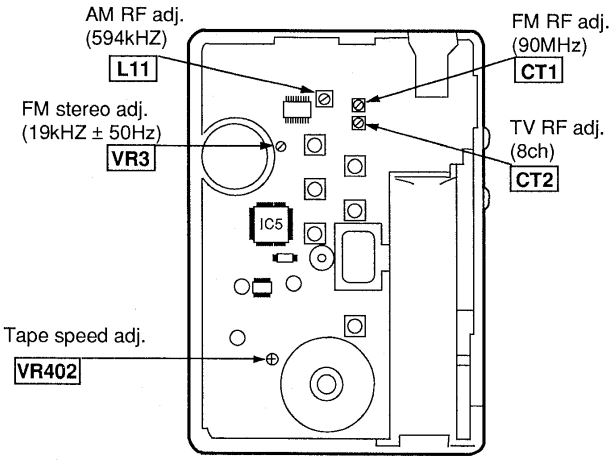


Fig. 3

■Schematic Diagram (See parts list on pages 35~39.)

●This schematic diagram may be modified at any time with development of new technology.)

Notes:

- **S1** : Tape A/B side det. switch.
- **S3** : MODE select switch.
- **S4** : MEMORYswitch.
- **S5** : - / REW switch.
- **S7** : Play (◀▶) switch.
- **S8** : + / FF switch.
- **S9** : AUTO switch.
- **S10** : RADIO ON / BAND select switch.
- **S11** : RADIO OFF/ Stop (■) switch.
- **S12-1** : Tape IN/OUT det. switch in "OUT(OFF)" position. [IN(ON)... Tape in, OUT(OFF)...Tape out]
- **S12-2** : Tape detector (METAL/NORMAL) switch in "OFF (METAL)" position.
- **S15** : Dolby noise reduction (DD NR) switch in "OFF" position.
- **S16** : Mech. det.(FWD/STOP/REV) switch in "REV" position.
- **S17** : B.S./REV MODE/,STEREO MODE switch in " OFF/ ⮌ / MONO " position.
- **S18** : HOLD (HOLD) switch in "OFF" position.
- **VR1** : Volume adjustment.
- **VR3** : FM stereo adjustment.
- **VR402** :Tape speed adjustment.
- DC voltage measurements are taken with electronics voltmeter from negative terminal of battery. No mark...Playback, FM / TV... < > , AM... ( )
- Current consumption of tape playback and radio mode: About 64 mA.

● Signal line

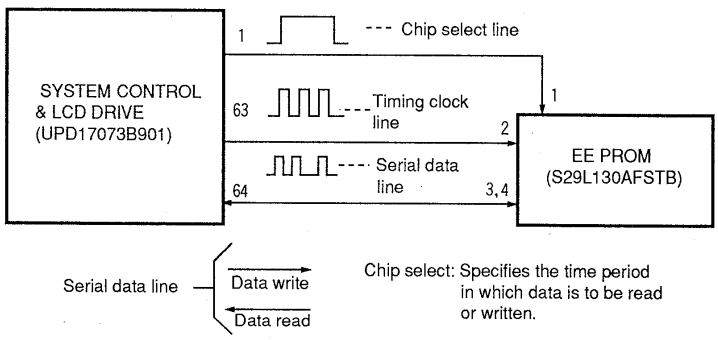
: + B line
: FM signal
: TV/FM OSC signal
: Main (Tape/Radio) signal
: TV signal
: TV/FM/AM Vcap signal
: AM OSC signal
: Playback signal

● Check Point of Signal

Check Item		TEST POINT
Head Input	L ch	TP1 , TP2
	R ch	TP3 , TP4
	VREF	TP5
Dolby Output → VR Input	L ch	TP6
	R ch	TP7
	COM	TP8
VR input → VR Output	L ch	TP9
	R ch	TP10
	COM	TP8
Power amp. Output → Headphones Output	L ch	TP11
	R ch	TP12
	COM	TP13
DC-DC Converter (Booster)	2.4V output	TP14
	GND	TP15
Photo Coupler (End)	Pulse output	TP16

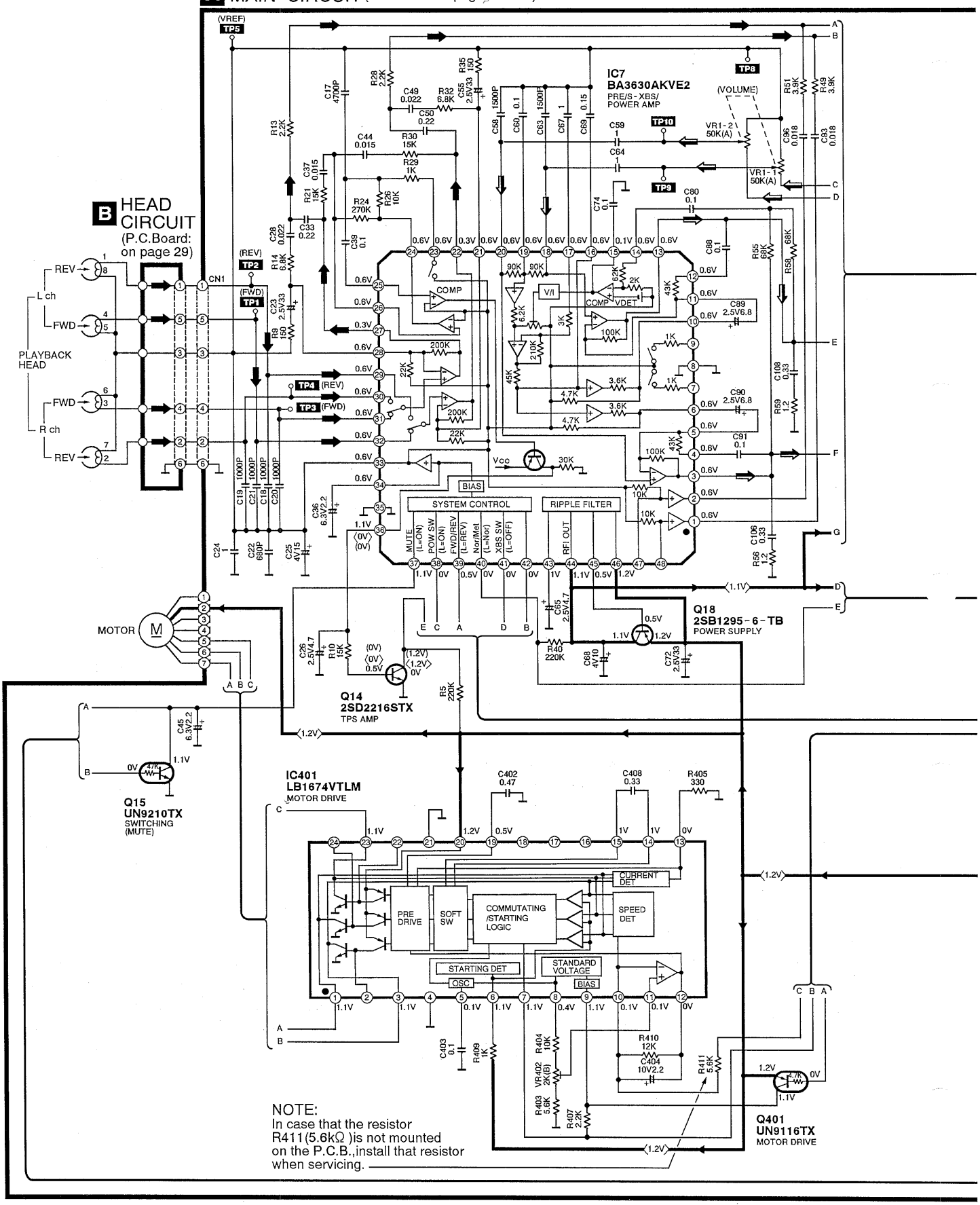
●EEPROM (Electrically Erasable Programmable Read Only Memory)

●The unit contains a rewritable non-volatile EEPROM (Part No. S29L130AFSTB), which retains stored data after the unit power is removed.

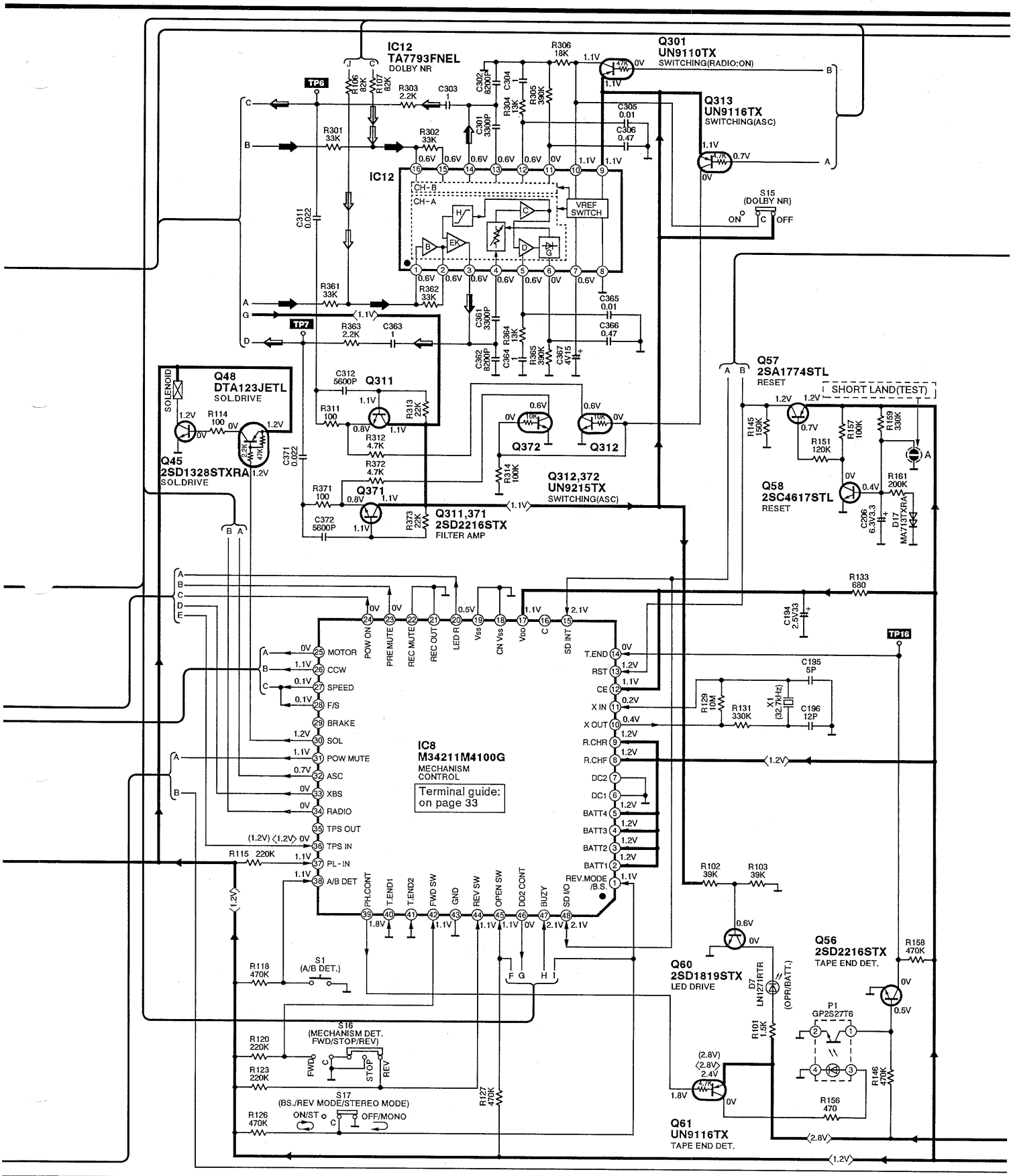


1. The contents of tuner memory (test state band and frequency), tape counter value and so forth are saved to the EEPROM when the free RAM area is full or a power off process has been completed.
2. If the radio is turned on or atape play operation is started subsequently, the PLL processor reads the most recent tuner information from the EEPROM and loads it into its internal RAM.
3. This save/load process retains tuner information after the unit power has been switched off.

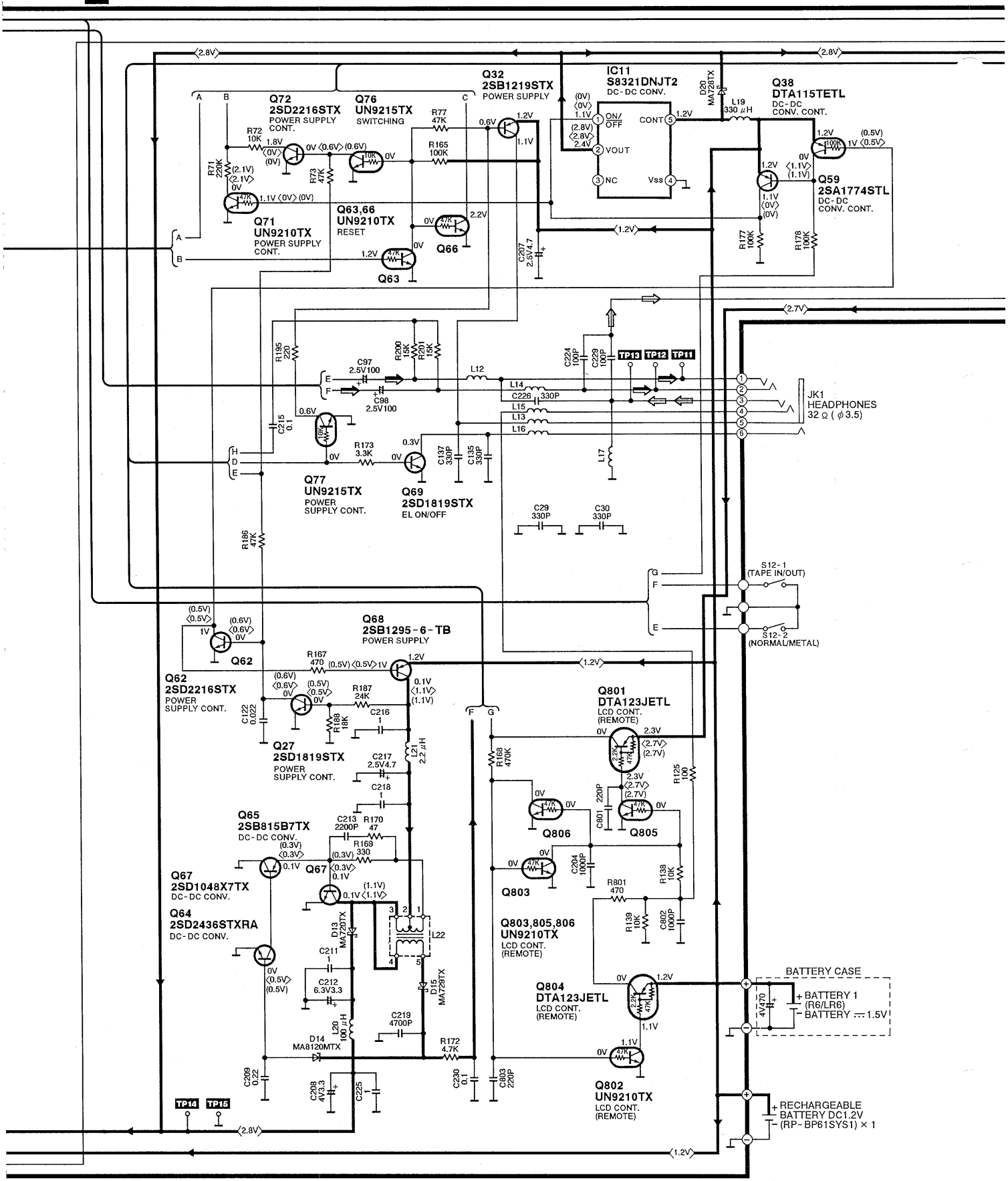
A MAIN CIRCUIT (P.C.Board:on pages 28~31)



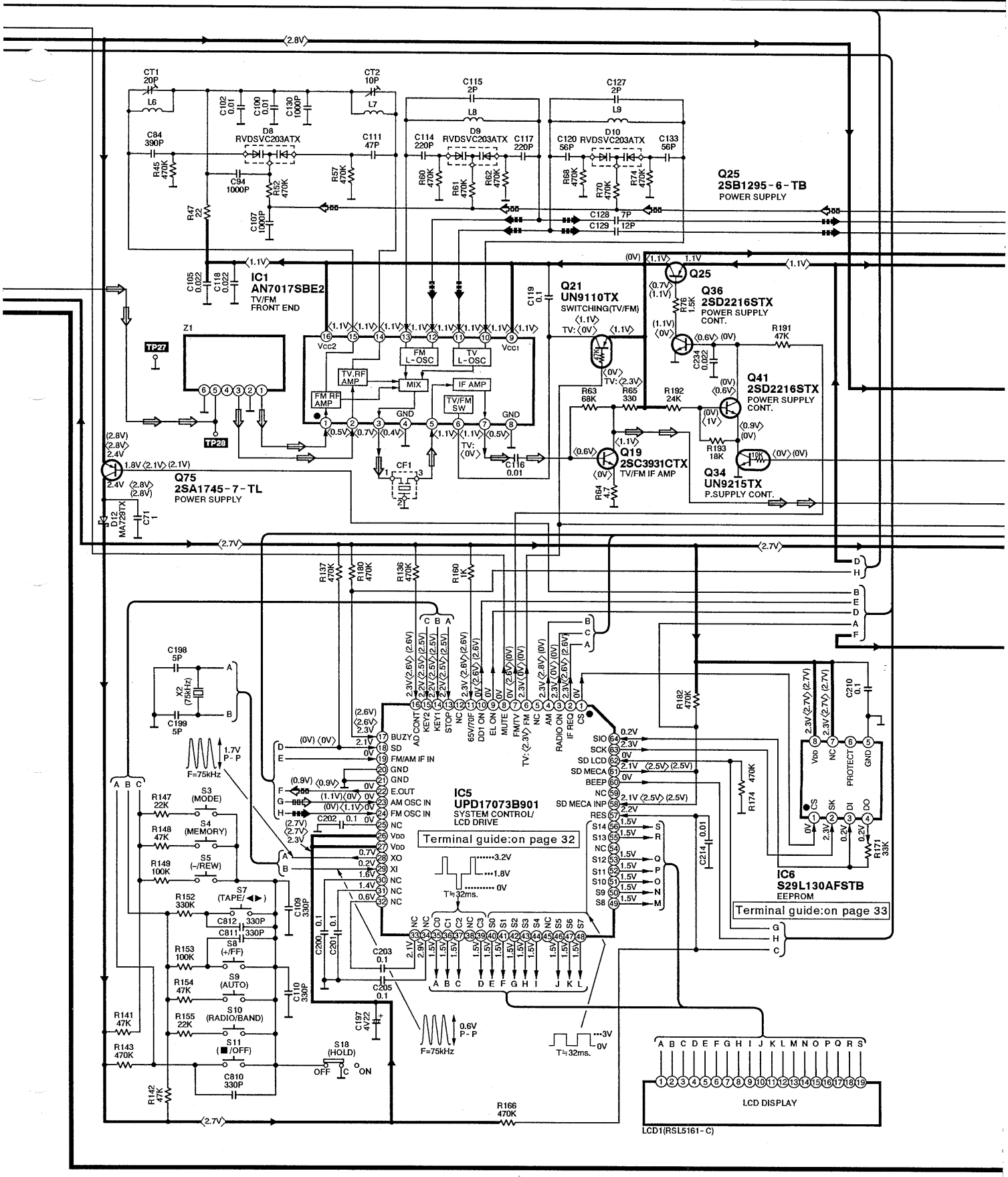
Notes: ● ⟶ : Playback signal ● ⟹ : Main (Tape/Radio) signal



A MAIN CIRCUIT (P.C.Board:on pages 28~31)

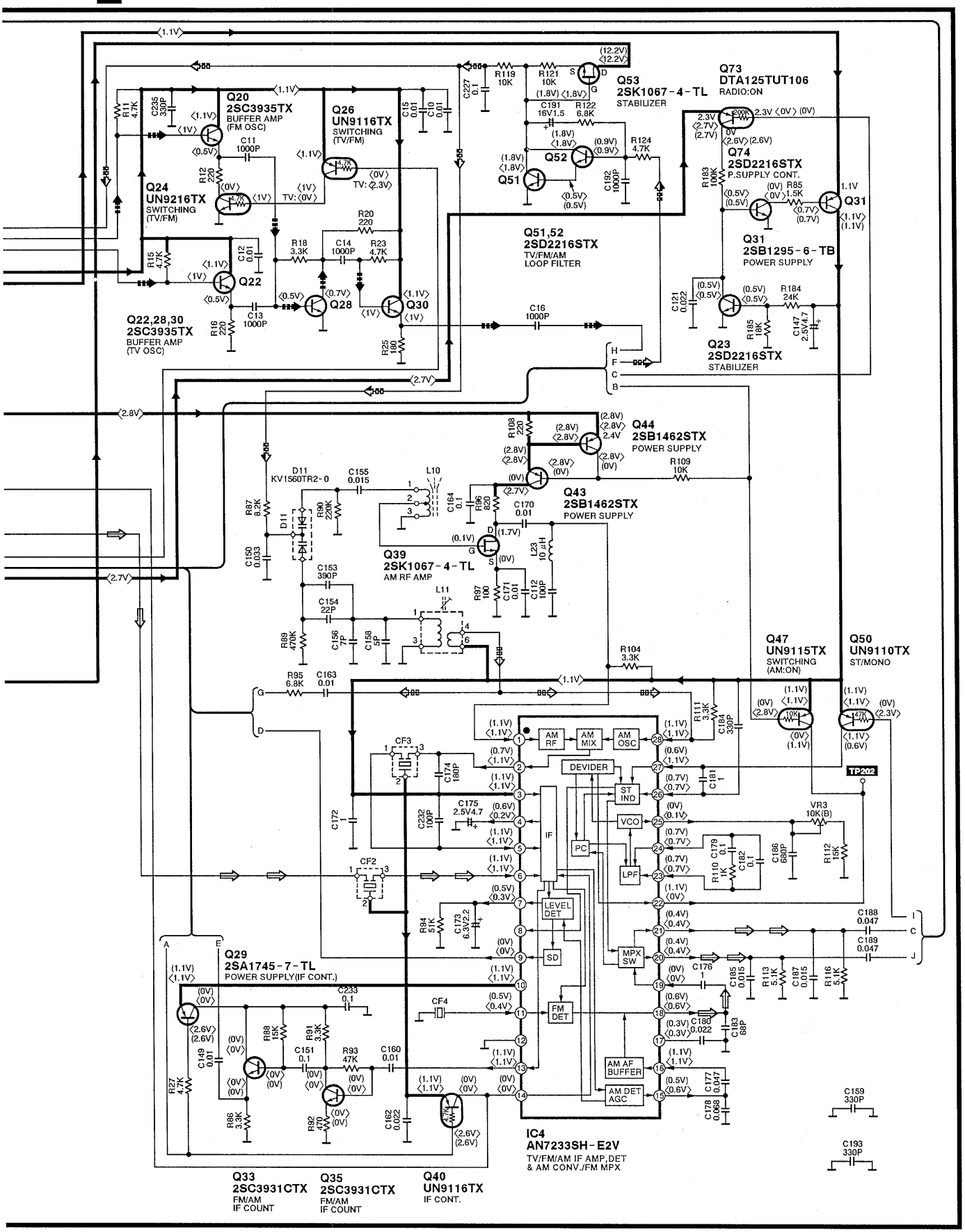


Notes: ● : TV signal ● : FM signal ● : AM OSC signal ● : TV/FM OSC signal ● : TV/FM/AM Vcap signal ● : Main (Tape/Radio) signal

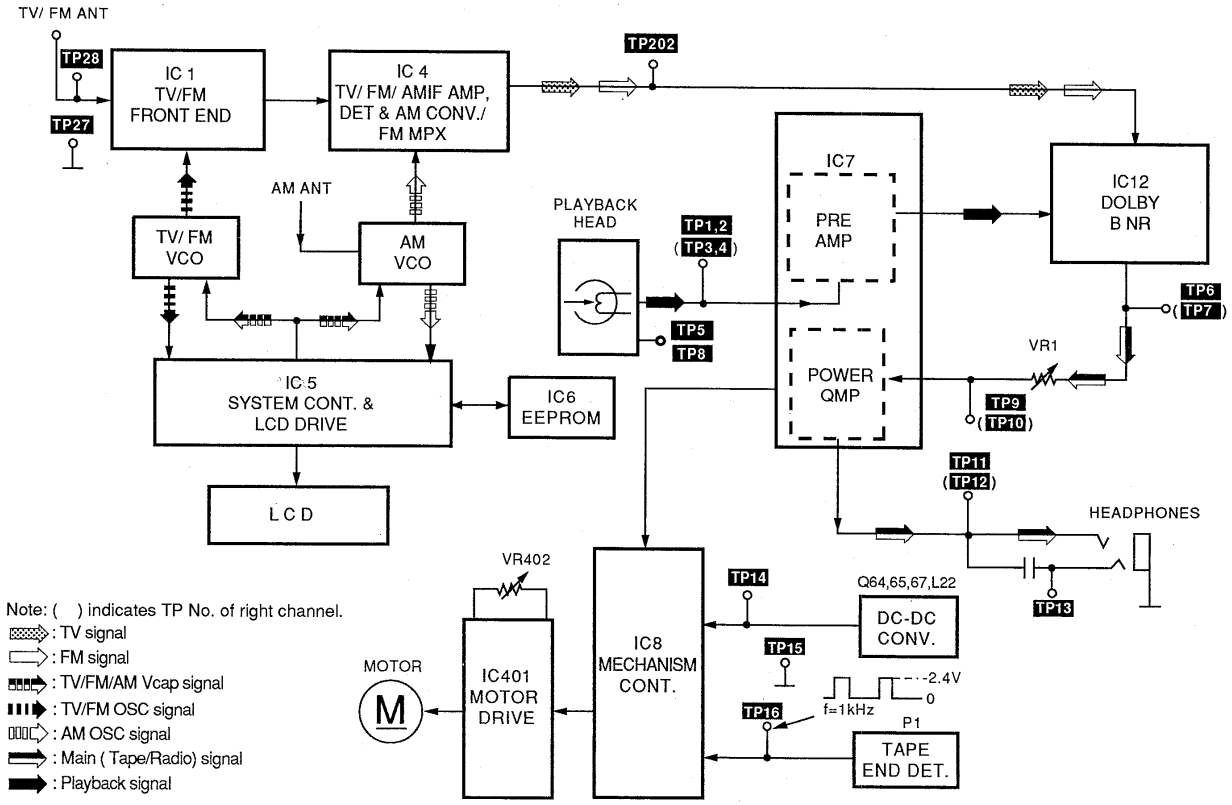


Notes: ● ⇨ : TV signal ● ⇨ : AM OSC signal ● ⇨ : TV/FM/AM Vcap signal
● ⇨ : FM signal ● ⇨ : TV/FM OSC signal

A MAIN CIRCUIT (P.C.Board:on pages 28~31)



■Block Diagram



■Terminal Guide of IC's, Transistors and Diodes

S29L130AFSTB 8PIN AN7017SBE2 16PIN TA7793FNEL 16PIN LB1674VTLM 24PIN AN7233SH-E2V 28PIN No.1	S8321DNJT2	M34211M4100G	BA3630AKVE2 48PIN UPD17073B901 64PIN		
2SA1745-7-TL 2SA1774STL 2SB1219STX 2SB1295-6-TB 2SB1462STX 2SB815B7TX 2SC3931CTX 2SC3935TX	2SC4617STL 2SD1048X7TX 2SD1328STXRA 2SD1819STX 2SD2216STX 2SD2436STXRA DTA115TETL DTA123JETL	DTA125TUT106 UN9110TX UN9115TX UN9116TX UN9210TX UN9215TX UN9216TX	2SK1067-4-TL	LN1271RTR	
MA720TX	MA713TXRA	RVDSVC203ATX KV1560TR2-0	MA728TX	MA729TX	MA8120MTX

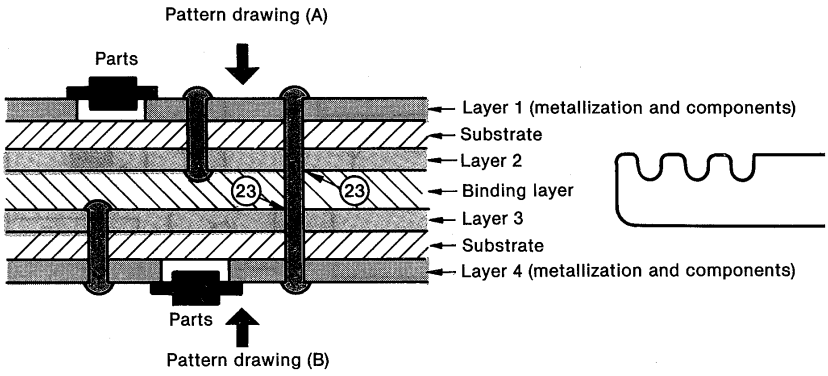
■Printed Circuit Board and Wiring Connection Diagram

●This printed circuit board and wiring connection diagram may be modified at any time with development of new technology.)

● Pattern drawing (A) (layer 1 and 2)

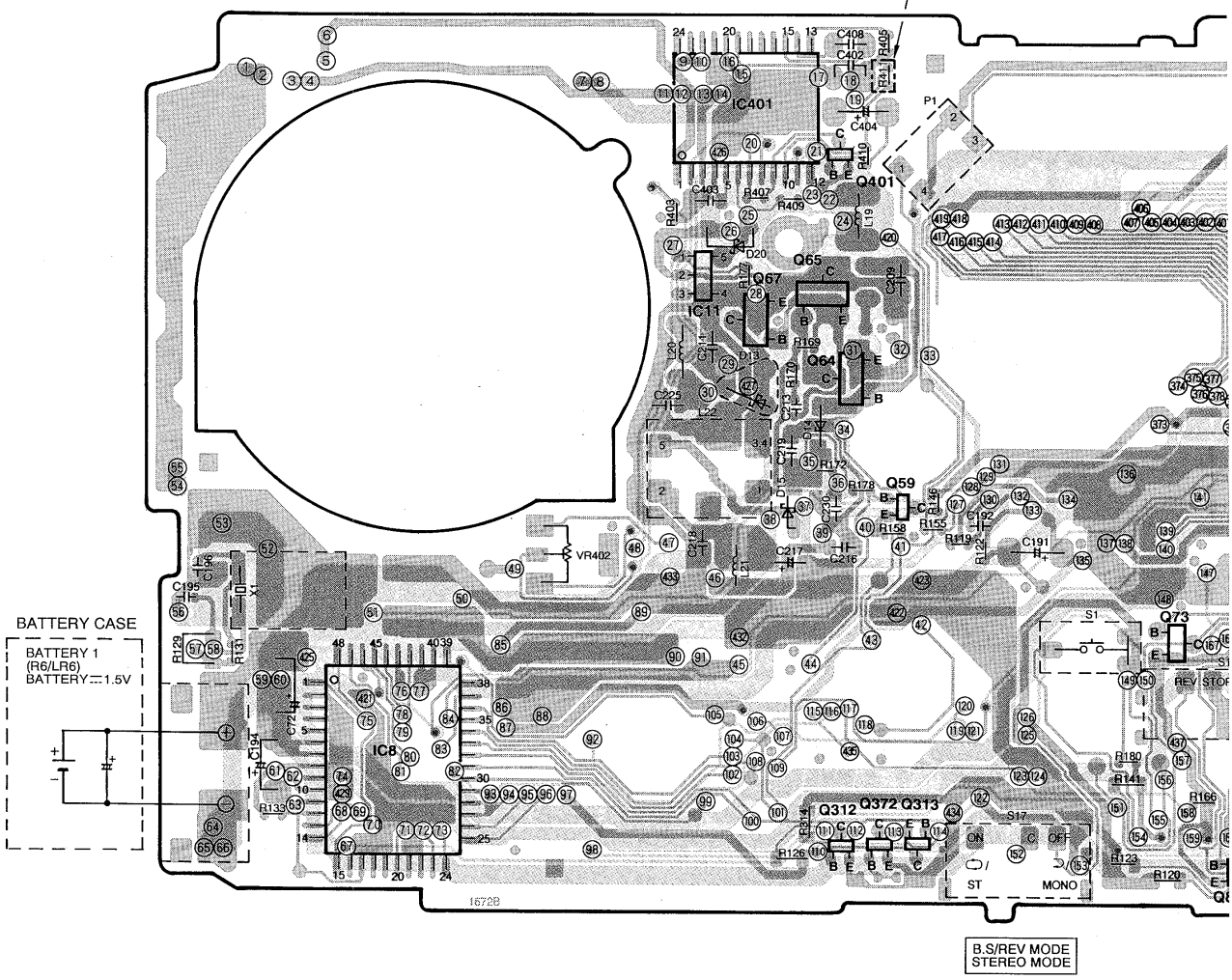
Notes:
The printed circuit board consists of four pattern layers.

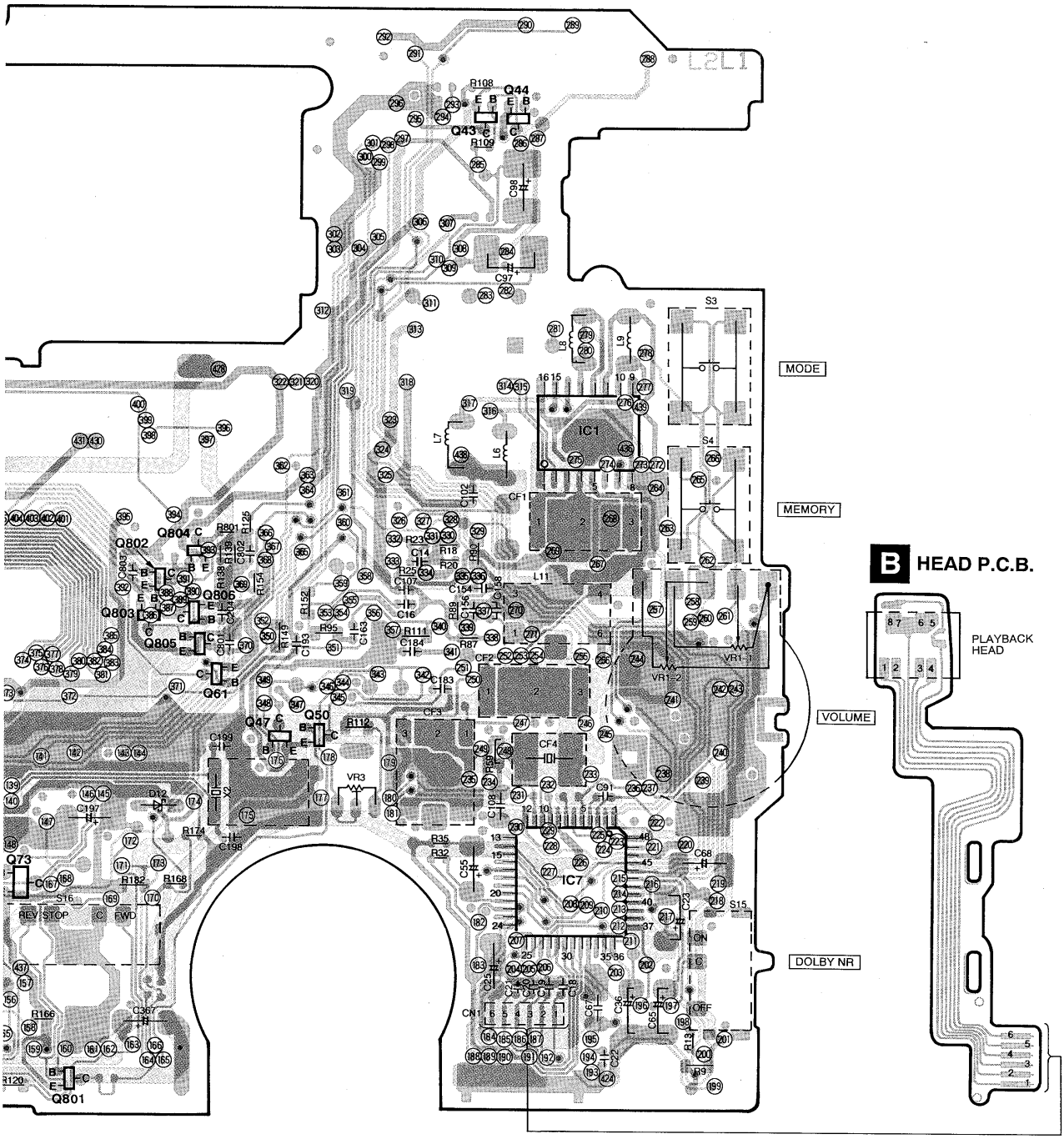
- The metallization patterns in layers 1 and 2 are shown in pattern drawing (A), and those in layers 3 and 4 are shown in patterns drawing (B).
- In drawings (A) and (B), the visible layers (layers 1 and 4) are printed in black. The invisible layers (layer 2 and 3) are printed in blue.
- Blue dots (◉) in the drawings indicate through-hole connections between layers 1 and 2 or layers 3 and 4.
- Encircled numbers in the pattern drawings indicate through-hole connections across layers between patterns (A) and (B).
  [The same number in pattern drawing (A) and (B) indicates the same through-hole connection.]

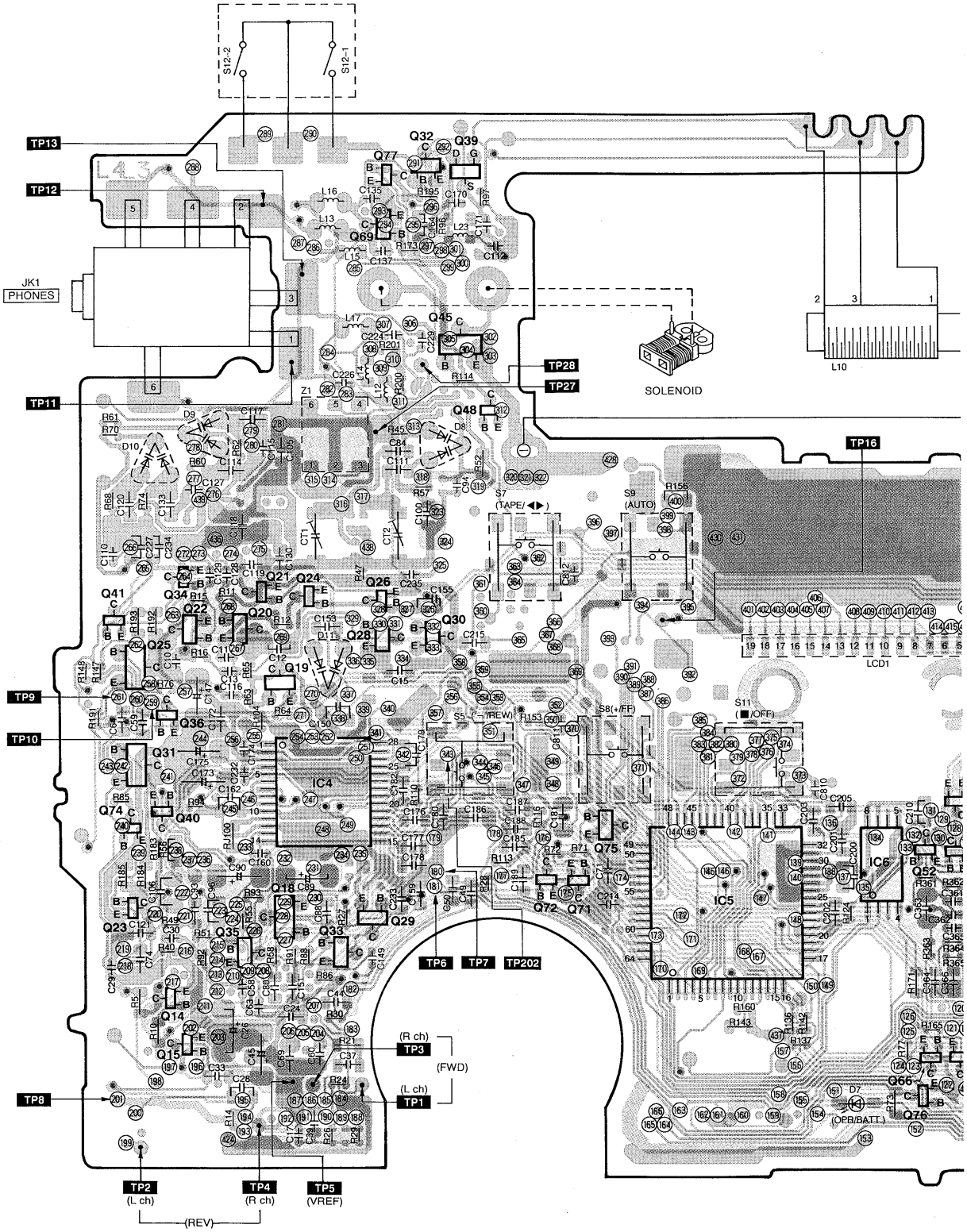


NOTE:
In case that the resistor R411(5.6kΩ) is not mounted on the P.C.B., install that resistor when servicing.

A MAIN P.C.B. (REP2401A)



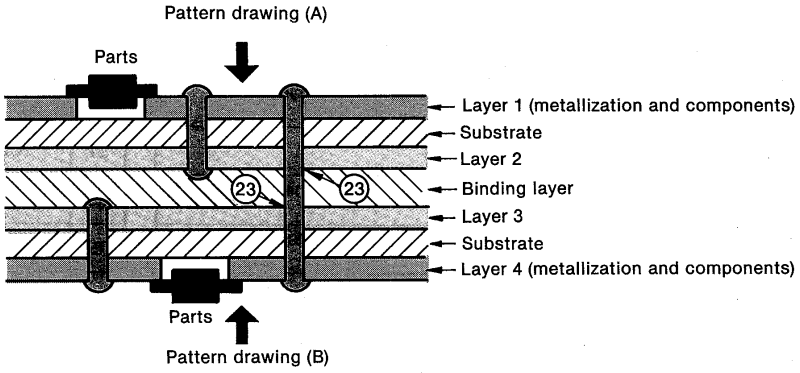

B HEAD P.C.B.
PLAYBACK HEAD
MODE
MEMORY
VOLUME
DOLBY NR
IC1
IC7
Q44
Q43
Q802
Q804
Q803
Q806
Q805
Q61
Q47
Q50
Q73
Q801
S3
S4
S15
S16
VR1
VR3
CF1
CF2
CF3
CF4
CN1
REV
STOP
FWD
ON
OFF

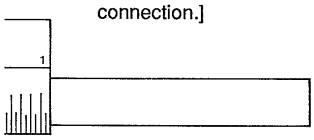

S12-2
S12-1
TP13
TP12
TP11
TP9
TP10
TP8
TP28
TP27
TP16
TP6
TP7
TP202
TP3
TP1
TP2
TP4
TP5
(R ch)
(FWD)
(L ch)
(L ch)
(REV)
(R ch)
(VREF)
JK1
PHONES
SOLENOID
L10
LCD1
S7
(TAPE/◀▶)
S9
(AUTO)
S11
(■/OFF)
S5 (→/REW)
S8(+/FF)
IC4
IC5
IC6
Q32
Q39
Q77
Q69
Q45
Q48
Q21
Q24
Q26
Q34
Q22
Q20
Q28
Q30
Q41
Q25
Q19
Q36
Q31
Q74
Q40
Q18
Q29
Q23
Q35
Q33
Q14
Q15
Q75
Q72
Q71
Q52
Q66
Q76
D7
(OPR/BATT.)

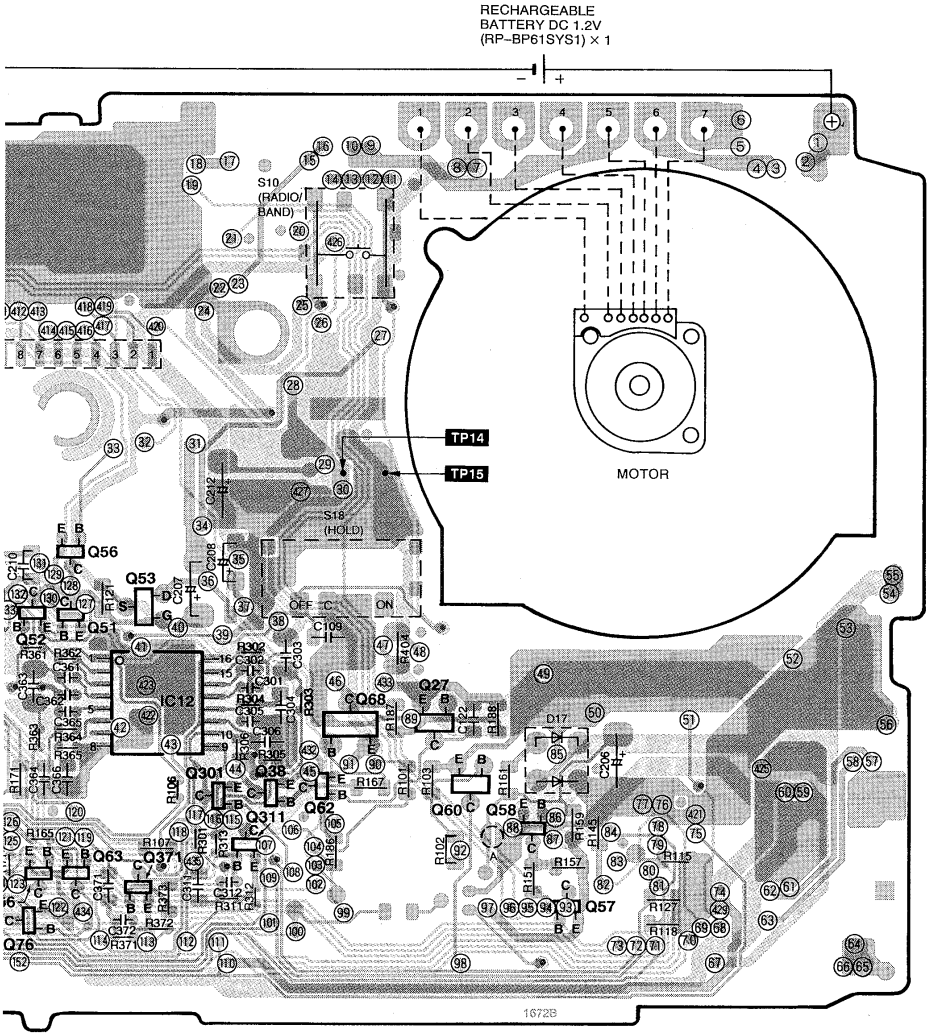
• Pattern drawing (B) (layer 3 and 4)

Notes:
The printed circuit board consists of four pattern layers.

- The metallization patterns in layers 1 and 2 are shown in pattern drawing (A), and those in layers 3 and 4 are shown in patterns drawing (B).
- In drawings (A) and (B), the visible layers (layers 1 and 4) are printed in black. The invisible layers (layer 2 and 3) are printed in blue.
- Blue dots (●) in the drawings indicate through-hole connections between layers 1 and 2 or layers 3 and 4.
- Encircled numbers in the pattern drawings indicate through-hole connections across layers between patterns (A) and (B).
  [The same number in pattern drawing (A) and (B) indicates the same through-hole connection.]







■Terminal Guide

• IC5(UPD17073B901): System control & LCD drive

Pin No.	Mark	I/O	Function
1	CS	O	Chip select signal output terminal.
2	IF REQ	O	IF count control output terminal.
3	RADIO ON	O	Radio power ON output terminal. (RADIO ON: "L")
4	AM	O	Band select (AM) output terminal. (AM: "L")
5	NC	—	Not connected
6	TV:FM	O	Band select (FM) output terminal. (FM: "L")
7	FM/TV	O	Band select (FM/TV) output terminal. (FM/TV: "L")
8	MUTE	O	Muting signal output terminal.
9	EL ON	O	Power control output terminal.
10	DD1 ON	O	DC-DC converter control (ON) output terminal.
11	65V/70F	I	Not used, connected to bias line through resistor.
12	NC	—	Not connected.
13	STOP	I	Key switch (STOP) det. terminal.
14	KEY1	I	Key switch (PLAY, + ,AUTO,RADIO) det. terminal.
15	KEY2	I	Key switch (MODE,MEMO, -) det. terminal.
16	AD CONT	I	Not used, connected to bias line through resistor.
17	BUZY	I	Beep control input terminal.
18	SD	I	Received signal level det. input terminal.
19	FM/AM IF IN	I	FM/AM IF count signal input terminal.
20	GND	I	GND terminal.
21	GND	I	GND terminal.
22	E.OUT	O	TV/FM/AM Vcap signal output terminal.
23	AM OSC IN	I	AM OSC signal input terminal.
24	FM OSC IN	I	FM OSC signal input terminal.
25	NC	—	Not used, connected to capacitor.
26	VDD	I	Power supply terminal.
27	VDD	I	Power supply terminal.
28	XO	O	Crystal OSC terminal. (F=75kHz)
29	XI	I	
30	NC	O	Not used, connected to capacitor.
31	NC	O	Not used, connected to capacitor.
32	NC	O	Not used, connected to capacitor.

Pin No.	Mark	I/O	Function
33	NC	—	Not used, connected to capacitor.
34	NC	—	Not used, connected to capacitor.
35	C0	O	LCD common signal output terminal.
∫	∫		
37	C2		
38	NC	—	Not connected.
39	C3	O	LCD common signal output terminal.
40	S0	O	LCD segment signal output terminal.
∫	∫		
44	S4		
45	NC	—	Not connected.
46	S5	O	LCD segment signal output terminal.
∫	∫		
53	S12		
54	NC	—	Not connected.
55	S13	O	LCD segment signal output terminal.
56	S14		
57	RES	I	Reset signal input terminal.
58	SD MECA INP	I	Mechanism select signal input terminal.
59	NC	—	Not connected.
60	BEEP	O	Beep control input terminal.
61	SD MECA	O	Mechanism select signal output terminal.
62	SD LCD	I	Remote controller (LCD) control input terminal.
63	SCK	O	Serial clock output terminal.
64	SIO	I/O	Serial data input/output terminal.

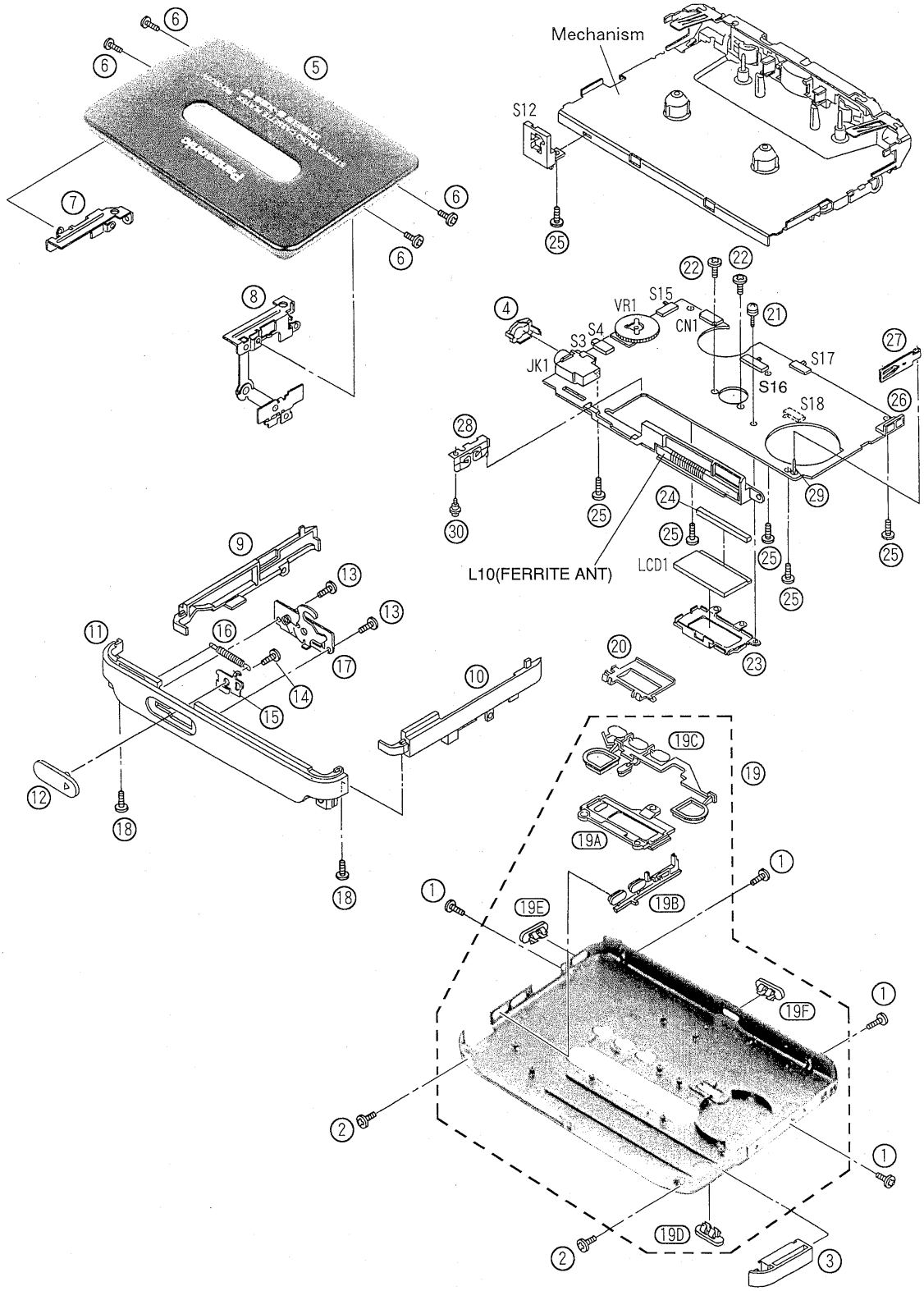
• IC6 (S29L130AFSTB): EEPROM

Pin No.	Mark	I/O	Function
1	CS	I	Chip select input terminal.
2	SK	I	Serial clock input terminal.
3	DI	I	Serial data input terminal.
4	DO	O	Serial data output terminal.
5	GND	—	GND terminal.
6	PROTECT	—	Not used, open.
7	NC	—	Not used, connected to bias line.
8	VDD	I	Power supply terminal.

• IC8 (M34211M4100G): Mechanism control

Pin No.	Mark	I/O	Function
1	REV. MODE /B.S	I	B.S/reverse mode select signal input terminal. "L": OFF/ ⮌ , "H": ON/ ⟲
2 ∫ 5	BATT1 ∫ BATT4	I	Battery check det. input terminal.
6	DC1	O	Not used, connected to GND.
7	DC2		
8	R. CH-F	O	Radio frequency select signal (+) output terminal.
9	R. CH-R	O	Radio frequency select signal (-) output terminal.
10	X OUT	O	Crystal OSC terminal. (F=32.7kHz)
11	X IN	I	
12	CE	I	Chip select terminal. (Connected to bias line.)
13	RST	—	Reset control input terminal.
14	T.END	I	Tape rotation det. signal input terminal. Pulse signal: OK....Mode hold Pulse signal: NG....STOP, R.PLAY
15	SD INT	I	Mechanism select signal terminal.
16	C	I	Not used, open.
17	VDD	I	Power supply terminal.
18	CN VSS	—	GND terminal.
19	VSS	—	GND terminal.
20	LED R	O	Head select (REV) signal output terminal.
21	REC OUT	—	Not used, connected to GND.
22	REC MUTE	—	Not used, connected to GND.
23	PRE MUTE	O	Muting signal output terminal.
24	POW ON	O	Power ON control output terminal.
25	MOTOR	O	Motor power control terminal.
26	CCW	O	Reverse motor control terminal.
27	SPEED	O	Motor speed-up signal output terminal.
28	F/S	O	Motor speed control output tewrminal.
29	BRAKE	O	Motor brake signal output terminal.
30	SOL	O	Solenoide drive signal output terminal.
31	POW MUTE	O	Muting signal output terminal.
32	ASC	O	ASC EQ control signal output terminal.
33	XBS		
34	RADIO	O	Radio select output terminal.
35	TPS OUT	O	TPS signal output terminal.
36	TPS IN	I	TPS signal input terminal.
37	PL IN	I	Not used, connected to bias line through resistor.
38	A/B DET	I	Tape A/B side det. input terminal (A: "L", B: "H").
39	PH. CONT.	O	Photo coupler power control terminal.
40	T.END1	I	Not used, connected to GND.
41	T.END2		
42	FWD SW	I	Mechanism (FWD) det. input terminal.
43	GND	—	GND terminal.
44	REV. SW	O	Mechanism (REV) det. input terminal.
45	OPEN SW	I	Inputs the signal that detects whether the cassette tape is inserted. "L": ON (CLOSE); the tape is inserted. "H": OFF (OPEN); the tape is not inserted.
46	DD2 CONT	O	DC-DC converter control output terminal.
47	BUZY	I	Beep control input terminal.
48	SD I/O	I/O	Mechanism select signal input terminal.

■Cabinet Parts Location



■Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RHQ0059-K	SCREW	
2	RHQ0061-K	SCREW	
3	RKK0097-1K	BATTERY LID	
4	RMR1009-K	JACK PIECE	
5	RFKLQSX25V-K	CASSETTE LID ASS'Y	
6	RHQ0062-K	SCREW	
7	RMA0976	LINK ANGLE R	
8	RXM0059	LINK UNIT L	
9	RGK0839A-H	INTERMEDIATE ORNAMENT A	
10	RGK0841-H	INTERMEDIATE ORNAMENT C	
11	RGK0849-H	INTERMEDIATE ORNAMENT B	
12	RFKNQSX65V-K	OPEN KNOB ASS'Y	
13	RHE5119YA	SCREW	
14	RHQ0032-K	SCREW	
15	RMA0971	INTERFASE LEVER	
16	RMB0442	AUTO RETURN SPRING	
17	RXQ0479	SHELL LOCK UNIT	
18	XQN14+BG4FZ	SCREW	
19	RYK0673A-K	CABINET ASS'Y	
19A	RGK0850-S	LCD ORNAMENT	
19B	RGU1429-K	RADIO BUTTON	
19C	RGU1467-S	MECHANISM BUTTON	
19D	RGV0107-K	HOLD KNOB	
19E	RGV0167-K	DOLBY NR KNOB	
19F	RGV0180-K	B.S/REV/STEREO MODE KNOB	
20	RGP0570-Q	LCD PANEL	
21	RHQ0022-S	SCREW	
22	RHQ0058-Y	SCREW	
23	RMA0970	LCD HOLDER	
24	RSQ0050	ZEBRA CONNECTOR	
25	RHQ0060-N	SCREW	
26	RJH9208	CONNECTION TERMINAL(S1)	
27	RJC99027	R.BATTERY TERMINAL(+)	
28	RJC99028	R.BATTERY TERMINAL(-)	
29	RJR0154-1	R.BATTERY SHAFT	
30	RHQ0013-1	SCREW	
		INTEGRATED CIRCUIT(S)	
IC1	AN7017SBE2	IC	
IC4	AN7233SH-E2V	IC	
IC5	UPD17073B901	IC	
IC6	S29L130AFSTB	IC	
IC7	BA3630AKVE2	IC	
IC8	M34211M4100G	IC	
IC11	S8321DNJT2	IC	
IC12	TA7793FNEL	IC	
IC401	LB1674VTLM	IC	

Ref. No.	Part No.	Part Name & Description	Remarks
		TRANSISTOR(S)	
Q14	2SD2216STX	TRANSISTOR	
Q15	UN9210TX	TRANSISTOR	
Q18	2SB1295-6-TB	TRANSISTOR	
Q19	2SC3931CTX	TRANSISTOR	
Q20	2SC3935TX	TRANSISTOR	
Q21	UN9110TX	TRANSISTOR	
Q22	2SC3935TX	TRANSISTOR	
Q23	2SD2216STX	TRANSISTOR	
Q24	UN9216TX	TRANSISTOR	
Q25	2SB1295-6-TB	TRANSISTOR	
Q26	UN9116TX	TRANSISTOR	
Q27	2SD1819STX	TRANSISTOR	
Q28	2SC3935TX	TRANSISTOR	
Q29	2SA1745-7-TL	TRANSISTOR	
Q30	2SC3935TX	TRANSISTOR	
Q31	2SB1295-6-TB	TRANSISTOR	
Q32	2SB1219STX	TRANSISTOR	
Q33	2SC3931CTX	TRANSISTOR	
Q34	UN9215TX	TRANSISTOR	
Q35	2SC3931CTX	TRANSISTOR	
Q36	2SD2216STX	TRANSISTOR	
Q38	DTA115TETL	TRANSISTOR	
Q39	2SK1067-4-TL	TRANSISTOR	
Q40	UN9116TX	TRANSISTOR	
Q41	2SD2216STX	TRANSISTOR	
Q43, 44	2SB1462STX	TRANSISTOR	
Q45	2SD1328STXRA	TRANSISTOR	
Q47	UN9115TX	TRANSISTOR	
Q48	DTA123JETL	TRANSISTOR	
Q50	UN9110TX	TRANSISTOR	
Q51, 52	2SD2216STX	TRANSISTOR	
Q53	2SK1067-4-TL	TRANSISTOR	
Q56	2SD2216STX	TRANSISTOR	
Q57	2SA1774STL	TRANSISTOR	
Q58	2SC4617STL	TRANSISTOR	
Q59	2SA1774STL	TRANSISTOR	
Q60	2SD1819STX	TRANSISTOR	
Q61	UN9116TX	TRANSISTOR	
Q62	2SD2216STX	TRANSISTOR	
Q63	UN9210TX	TRANSISTOR	
Q64	2SD2436STXRA	TRANSISTOR	
Q65	2SB815B7TX	TRANSISTOR	
Q66	UN9210TX	TRANSISTOR	
Q67	2SD1048X7TX	TRANSISTOR	
Q68	2SB1295-6-TB	TRANSISTOR	
Q69	2SD1819STX	TRANSISTOR	
Q71	UN9210TX	TRANSISTOR	
Q72	2SD2216STX	TRANSISTOR	
Q73	DTA125TUT106	TRANSISTOR	
Q74	2SD2216STX	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q75	2SA1745-7-TL	TRANSISTOR	
Q76, 77	UN9215TX	TRANSISTOR	
Q301	UN9110TX	TRANSISTOR	
Q311	2SD2216STX	TRANSISTOR	
Q312	UN9215TX	TRANSISTOR	
Q313	UN9116TX	TRANSISTOR	
Q371	2SD2216STX	TRANSISTOR	
Q372	UN9215TX	TRANSISTOR	
Q401	UN9116TX	TRANSISTOR	
Q801	DTA123JETL	TRANSISTOR	
Q802, 803	UN9210TX	TRANSISTOR	
Q804	DTA123JETL	TRANSISTOR	
Q805, 806	UN9210TX	TRANSISTOR	
		DIODE(S)	
D7	LN1271RTR	L. E. D.	
D8, 9	RVDSVC203ATX	DIODE	
D10	RVDSVC203ATX	DIODE	
D11	KV1560TR2-0	DIODE	
D12	MA729TX	DIODE	
D13	MA720TX	DIODE	
D14	MA8120MTX	DIODE	
D15	MA729TX	DIODE	
D17	MA713TXRA	DIODE	
D20	MA728TX	DIODE	
		VARIABLE RESISTOR(S)	
VR1	EVUTOVA05A54	V. R	
VR3	EVM3SSX50B14	V. R	
VR402	EVM1CSX10B23	V. R	
		COMPONENT COMBINATION(S)	
Z1	RCRBTC002-D	FM/TV B. P. F	
		COIL(S)	
L6	RL04Z026T-W	COIL	
L7	RL04Z015T-W	COIL	
L8	RL04Z027T-W	COIL	
L9	RL04Z025T-W	COIL	
L10	RL02U025T-M	COIL	
L12	RLV2N046-0	COIL(FERRITE ANT)	
L12	RLBV601V-W	COIL	
L13	RLBN601V-W	COIL	
L14, 15	RLBV601V-W	COIL	
L16, 17	RLBN601V-W	COIL	
L19	RLQU331KT-W	COIL	
L20	RLQM101K-W	COIL	
L21	RLQM2R2M-W	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L22	RL09U006-M	COIL	
L23	RLQP100KT2-Y	COIL	
		FILTER(S)	
CF1, 2	RLFGECWN04AL	FM IF FILTER	
CF3	RLFECFM3450A	AM FILTER	
CF4	RLFDGC01AL	FM FILTER	
		DISPLAY	
LCD1	RSL5161-C	LCD DISPLAY	
		OSCILLATOR(S)	
X1	RSXC32K7L01T	OSCILLATOR	
X2	RSXC75K0L02T	OSCILLATOR	
		TRIMMER(S)	
CT1	RCVCFA20C01L	TRIMMER(FM RF)	
CT2	RCVCFA10C01L	TRIMMER(TV RF)	
		PHOTO COUPLER(S)	
P1	GP2S27T6	PHOTO COUPLER	
		SWITCH(ES)	
S1	RSH1A040-A	SWITCH	
S3, 4	EVQPSR02K	SWITCH	
S5	EVQPLMA15	SWITCH	
S7-11	EVQPLMA15	SWITCH	
S12	RSH1B011-1U	SWITCH	
S15	RSS2A010-1A	SWITCH	
S16	RSS2A012-1A	SWITCH	
S17, 18	RSS2A010-1A	SWITCH	
		CONNECTOR(S)	
CN1	RJS2A1606T	CONNECTOR(6P)	
		JACK(S)	
JK1	RJJ36TK03-C	HEADPHONES	

■Resistors and Capacitors

Notes: * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R5	ERJ3GEYJ224V	1/16W 220K
R9	ERJ3GEYJ151V	1/16W 150
R10	ERJ3GEYJ153V	1/16W 15K
R11	ERJ2GEJ472X	1/16W 4.7K
R12	ERJ2GEJ221X	1/16W 220
R13	ERJ2GEJ222X	1/16W 2.2K
R14	ERJ2GEJ682X	1/16W 6.8K
R15	ERJ2GEJ472X	1/16W 4.7K
R16	ERJ2GEJ221X	1/16W 220
R18	ERJ2GEJ332X	1/16W 3.3K
R20	ERJ2GEJ221X	1/16W 220
R21	ERJ3GEYJ153V	1/16W 15K
R23	ERJ2GEJ472X	1/16W 4.7K
R24	ERJ2GEJ274X	1/16W 270K
R25	ERJ2GEJ181X	1/16W 180
R26	ERJ2GEJ103X	1/16W 10K
R27	ERJ2GEJ472X	1/16W 4.7K
R28	ERJ2GEJ222X	1/16W 2.2K
R29	ERJ2GEJ102X	1/16W 1K
R30	ERJ2GEJ153X	1/16W 15K
R32	ERJ2GEJ682X	1/16W 6.8K
R35	ERJ2GEJ151X	1/16W 150
R40	ERJ2GEJ224X	1/16W 220K
R45	ERJ2GEJ474X	1/16W 470K
R47	ERJ2GEJ220X	1/16W 22
R49	ERJ2GEJ392X	1/16W 3.9K
R51	ERJ2GEJ392X	1/16W 3.9K
R52	ERJ3GEYJ474V	1/16W 470K
R55	ERJ2GEJ683X	1/16W 68K
R56	ERJ3GEYJ1R2V	1/16W 1.2
R57	ERJ2GEJ474X	1/16W 470K
R58	ERJ2GEJ683X	1/16W 68K
R59	ERJ3GEYJ1R2V	1/16W 1.2
R60-62	ERJ2GEJ474X	1/16W 470K
R63	ERJ2GEJ683X	1/16W 68K
R64	ERJ2GEJ4R7X	1/16W 4.7
R65	ERJ2GEJ331X	1/16W 330
R68	ERJ2GEJ474X	1/16W 470K
R70	ERJ2GEJ474X	1/16W 470K
R71	ERJ2GEJ224X	1/16W 220K
R72	ERJ2GEJ103X	1/16W 10K
R73	ERJ3GEYJ473V	1/16W 47K
R74	ERJ2GEJ474X	1/16W 470K
R76	ERJ2GEJ152X	1/16W 1.5K
R77	ERJ2GEJ473X	1/16W 47K
R85	ERJ2GEJ152X	1/16W 1.5K
R86	ERJ2GEJ332X	1/16W 3.3K
R87	ERJ2GEJ822X	1/16W 8.2K
R88	ERJ2GEJ153X	1/16W 15K
R89	ERJ2GEJ474X	1/16W 470K
R90	ERJ3GEYJ224V	1/16W 220K
R91	ERJ2GEJ332X	1/16W 3.3K
R92	ERJ2GEJ471X	1/16W 470
R93	ERJ2GEJ473X	1/16W 47K
R94	ERJ2GEJ513X	1/16W 51K
R95	ERJ3GEYJ682V	1/16W 6.8K
R96	ERJ2GEJ821X	1/16W 820
R97	ERJ2GEJ101X	1/16W 100
R101	ERJ3GEYJ152V	1/16W 1.5K
R102, 103	ERJ3GEYD393V	1/16W 39K
R104	ERJ2GEJ332X	1/16W 3.3K
R106	ERJ2GEJ823X	1/16W 82K
R107	ERJ3GEYJ823V	1/16W 82K
R108	ERJ2GEJ221X	1/16W 220
R109	ERJ2GEJ103X	1/16W 10K
R110	ERJ2GEJ102X	1/16W 1K
R111	ERJ3GEYJ332V	1/16W 3.3K
R112	ERJ3GEYJ153V	1/16W 15K
R113	ERJ2GEJ512X	1/16W 5.1K
R114	ERJ2GEJ101X	1/16W 100
R115	ERJ3GEYJ224V	1/16W 220K
R116	ERJ2GEJ512X	1/16W 5.1K
R118	ERJ3GEYJ474V	1/16W 470K
R119	ERJ2GEJ103X	1/16W 10K
R120	ERJ3GEYJ224V	1/16W 220K
R121	ERJ3GEYJ103V	1/16W 10K
R122	ERJ2GEJ682X	1/16W 6.8K
R123	ERJ3GEYJ224V	1/16W 220K
R124	ERJ2GEJ472X	1/16W 4.7K
R125	ERJ2GEJ101X	1/16W 100
R126, 127	ERJ3GEYJ474V	1/16W 470K
R129	ERJ3GEYK106V	1/16W 10M
R131	ERJ2GEJ334X	1/16W 330K
R133	ERJ2GEJ681X	1/16W 680
R136, 137	ERJ2GEJ474X	1/16W 470K
R138, 139	ERJ2GEJ103X	1/16W 10K
R141	ERJ3GEYJ473V	1/16W 47K
R142	ERJ2GEJ473X	1/16W 47K
R143	ERJ3GEYJ474V	1/16W 470K
R145	ERJ3GEYJ154V	1/16W 150K
R146	ERJ2GEJ474X	1/16W 470K
R147	ERJ2GEJ223X	1/16W 22K
R148	ERJ2GEJ473X	1/16W 47K
R149	ERJ3GEYJ104V	1/16W 100K
R151	ERJ3GEYJ124V	1/16W 120K
R152	ERJ3GEYJ334V	1/16W 330K
R153	ERJ2GEJ104X	1/16W 100K
R154	ERJ2GEJ473X	1/16W 47K
R155	ERJ2GEJ223X	1/16W 22K
R156	ERJ3GEYJ471V	1/16W 470
R157	ERJ3GEYJ104V	1/16W 100K
R158	ERJ2GEJ474X	1/16W 470K
R159	ERJ3GEYD334V	1/16W 330K
R160	ERJ2GEJ102X	1/16W 1K
R161	ERJ3GEYD204V	1/16W 200K
R165	ERJ2GEJ104X	1/16W 100K
R166	ERJ2GEJ474X	1/16W 470K
R167	ERJ3GEYJ471V	1/16W 470
R168	ERJ2GEJ474X	1/16W 470K
R169	ERJ2GEJ331X	1/16W 330
R170	ERJ2GEJ470X	1/16W 47
R171	ERJ3GEYJ333V	1/16W 33K
R172	ERJ2GEJ472X	1/16W 4.7K
R173	ERJ2GEJ332X	1/16W 3.3K
R174	ERJ2GEJ474X	1/16W 470K
R177, 178	ERJ2GEJ104X	1/16W 100K
R180	ERJ2GEJ474X	1/16W 470K
R182	ERJ3GEYJ474V	1/16W 470K
R183	ERJ2GEJ104X	1/16W 100K
R184	ERJ3GEYD243V	1/16W 24K
R185	ERJ3GEYD183V	1/16W 18K
R186	ERJ3GEYJ473V	1/16W 47K
R187	ERJ3GEYD243V	1/16W 24K
R188	ERJ3GEYD183V	1/16W 18K
R191	ERJ2GEJ473X	1/16W 47K
R192	ERJ3GEYD243V	1/16W 24K
R193	ERJ3GEYD183V	1/16W 18K
R195	ERJ2GEJ221X	1/16W 220
R200, 201	ERJ2GEJ153X	1/16W 15K
R301, 302	ERJ2GEJ333X	1/16W 33K
R303	ERJ2GED222X	1/16W 2.2K
R304	ERJ2GEJ133X	1/16W 13K
R305	ERJ2GEJ394X	1/16W 390K
R306	ERJ2GEJ183X	1/16W 18K
R311	ERJ2GEJ101X	1/16W 100
R312	ERJ2GEJ472X	1/16W 4.7K
R313	ERJ2GEJ223X	1/16W 22K
R314	ERJ3GEYJ104V	1/16W 100K
R361, 362	ERJ2GEJ333X	1/16W 33K
R363	ERJ2GED222X	1/16W 2.2K
R364	ERJ2GEJ133X	1/16W 13K
R365	ERJ2GEJ394X	1/16W 390K
R371	ERJ2GEJ101X	1/16W 100
R372	ERJ2GEJ472X	1/16W 4.7K

Ref. No.	Part No.	Values & Remarks
R373	ERJ3GEYJ223V	1/16W 22K
R403	ERJ2GEJ562X	1/16W 5.6K
R404	ERAS15ZJ103V	1/10W 10K
R405	ERJ2GEJ331X	1/16W 330
R407	ERJ2GEJ222X	1/16W 2.2K
R409	ERJ2GEJ102X	1/16W 1K
R410	ERJ2GEJ123X	1/16W 12K
R411	ERJ2GEJ562X	1/16W 5.6K
R801	ERJ2GEJ471X	1/16W 470
		CHIP JUMPERS
J100	ERJ3GEY0R00V	CHIP JUMPER
		CAPACITORS
C10	ECUE1C103KBQ	16V 0.01U
C11	ECUE1H102KBQ	50V 1000P
C12	ECUVNH103KBV	50V 0.01U
C13, 14	ECUE1H102KBQ	50V 1000P
C15	ECUVNH103KBV	50V 0.01U
C16	ECUE1H102KBQ	50V 1000P
C17	ECUE1E472KBQ	25V 4700P
C18-21	ECUE1H102KBQ	50V 1000P
C22	ECUE1H681KBQ	50V 680P
C23	ECST0EY336RR	2.5V 33U
C24	ECUV0J105ZFV	6.3V 1U
C25	ECST0GY156RR	4V 15U
C26	RCST0EA475RE	2.5V 4.7U
C28	RCUV1C223KBV	16V 0.022U
C29, 30	ECUE1H331KBQ	50V 330P
C33	ECUV1C224ZFV	16V 0.22U
C36	RCST0JA225RE	6.3V 2.2U
C37	ECUVNE153KBV	25V 0.015U
C39	ECUVNC104ZFV	16V 0.1U
C44	ECUVNE153KBV	25V 0.015U
C45	RCST0JA225RE	6.3V 2.2U
C49	RCUV1C223KBV	16V 0.022U
C50	ECUV1C224ZFV	16V 0.22U
C55	ECST0EY336RR	2.5V 33U
C58	ECUE1H152KBQ	50V 1500P
C59	ECUV0J105ZFV	6.3V 1U
C60	ECUV1C104KBV	16V 0.1U
C63	ECUE1H152KBQ	50V 1500P
C64	ECUV0J105ZFV	6.3V 1U
C65	RCST0EA475RE	2.5V 4.7U
C67	ECUVNC105KBM	16V 1U
C68	RCSX0GY106RE	4V 10U
C69	RCUV1C154KBN	16V 0.15U
C71	ECUVNC105ZFN	16V 1U
C72	ECST0EY336RR	2.5V 33U
C74	ECUVNC104ZFV	16V 0.1U

Ref. No.	Part No.	Values & Remarks
C80	ECUVNC104ZFV	16V 0.1U
C84	ECUV1H391GCV	50V 390P
C88	ECUVNC104ZFV	16V 0.1U
C89, 90	RCST0EA685RE	2.5V 6.8U
C91	ECUE1C104ZFQ	16V 0.1U
C93	ECUVNE183KBV	25V 0.018U
C94	ECUE1H102KBQ	50V 1000P
C96	ECUVNE183KBV	25V 0.018U
C97, 98	ECST0EX107RR	2.5V 100U
C100	ECUVNH103KBV	50V 0.01U
C102	ECUE1C103KBQ	16V 0.01U
C105	RCUV1C223KBV	16V 0.022U
C106	ECUVNC334KBN	16V 0.33U
C107	ECUE1H102KBQ	50V 1000P
C108	ECUVNC334KBN	16V 0.33U
C109	ECUV1H331KBV	50V 330P
C110	ECUE1H331KBQ	50V 330P
C111	ECUV1H470GCV	50V 47P
C112	ECUE1H101KBQ	50V 100P
C114	ECUV1H221GCV	50V 220P
C115	ECUE1H020CCQ	50V 2P
C116	ECUE1H103ZFQ	50V 0.01U
C117	ECUV1H221GCV	50V 220P
C118	RCUV1C223KBV	16V 0.022U
C119	ECUVNC104ZFV	16V 0.1U
C120	ECUV1H560GCV	50V 56P
C121, 122	RCUV1C223KBV	16V 0.022U
C127	ECUE1H020CCQ	50V 2P
C128	ECUE1H070DCQ	50V 7P
C129	ECUE1H120JCQ	50V 12P
C130	ECUV1H102KBV	50V 1000P
C133	ECUV1H560GCV	50V 56P
C135	ECUE1H331KBQ	50V 330P
C137	ECUE1H331KBQ	50V 330P
C147	RCST0EA475RE	2.5V 4.7U
C149	ECUE1C103KBQ	16V 0.01U
C150	RCUV1C333KBV	16V 0.033U
C151	ECUVNC104ZFV	16V 0.1U
C153	ECUV1H391GCV	50V 390P
C154	ECUE1H220JCQ	50V 22P
C155	ECUVNE153KBV	25V 0.015U
C156	ECUE1H070DCQ	50V 7P
C158	ECUE1H050DCQ	50V 5P
C159	ECUV1H331KBV	50V 330P
C160	ECUE1C103KBQ	16V 0.01U
C162	RCUV1C223KBV	16V 0.022U
C163	ECUE1H103ZFQ	50V 0.01U
C164	ECUVNC104ZFV	16V 0.1U
C170	ECUE1H103ZFQ	50V 0.01U
C171	ECUE1C103KBQ	16V 0.01U
C172	ECUV0J105ZFV	6.3V 1U
C173	RCST0JA225RE	6.3V 2.2U

Ref. No.	Part No.	Values & Remarks
C174	ECUE1H181KBQ	50V 180P
C175	RCST0EA475RE	2.5V 4.7U
C176	ECUV0J105ZFV	6.3V 1U
C177	ECUVNC473KBV	16V 0.047U
C178	ECUV1C683KBV	16V 0.068U
C179	ECUV1C104KBV	16V 0.1U
C180	RCUV1C223KBV	16V 0.022U
C181	ECUVNC105ZFN	16V 1U
C182	ECUV1C104KBV	16V 0.1U
C183	ECUE1H680JCQ	50V 68P
C184	ECUE1H331KBQ	50V 330P
C185	ECUVNE153KBV	25V 0.015U
C186	ECUV1H681KCN	50V 680P
C187	ECUVNE153KBV	25V 0.015U
C188, 189	ECUVNC473KBV	16V 0.047U
C191	ECST1CY155RR	16V 1.5U
C192	ECUE1H102KBQ	50V 1000P
C193	ECUE1H331KBQ	50V 330P
C194	ECST0EY336RR	2.5V 33U
C195	ECUE1H050DCQ	50V 5P
C196	ECUE1H120JCQ	50V 12P
C197	RCSX0GY226RE	4V 22U
C198, 199	ECUE1H050DCQ	50V 5P
C200-203	ECUVNC104ZFV	16V 0.1U
C204	ECUE1H102KBQ	50V 1000P
C205	ECUVNC104ZFV	16V 0.1U
C206	RCST0JA335RE	6.3V 3.3U
C207	RCST0EA475RE	2.5V 4.7U
C208	RCST0GZ335RE	4V 3.3U
C209	ECUVNC224KBN	16V 0.22U
C210	ECUVNC104ZFV	16V 0.1U
C211	ECUV0J105ZFV	6.3V 1U
C212	RCST0JA335RE	6.3V 3.3U
C213	ECUE1H222KBQ	50V 2200P
C214	ECUVNH103KBV	50V 0.01U
C215	ECUVNC104ZFV	16V 0.1U
C216	ECUV0J105ZFV	6.3V 1U
C217	RCST0EA475RE	2.5V 4.7U
C218	ECUV0J105ZFV	6.3V 1U
C219	ECUV1H472KBV	50V 4700P
C224	ECUE1H101KBQ	50V 100P
C225	ECUV0J105ZFV	6.3V 1U
C226	ECUE1H331KBQ	50V 330P
C227	ECUV1C104KBV	16V 0.1U
C229	ECUE1H101KBQ	50V 100P
C230	ECUV1C104KBV	16V 0.1U
C232	ECUE1H101KBQ	50V 100P
C233	ECUVNC104ZFV	16V 0.1U
C234	RCUV1C223KBV	16V 0.022U
C235	ECUE1H331KBQ	50V 330P
C301	ECUE1H332KBQ	50V 3300P
C302	ECUE1C822KBQ	16V 8200P

Ref. No.	Part No.	Values & Remarks
C303	ECUVNC105ZFN	16V 1U
C304	ECUV0J105ZFV	6.3V 1U
C305	ECUE1C103KBQ	16V 0.01U
C306	ECUV1A474ZFV	10V 0.47U
C311	RCUV1C223KBV	16V 0.022U
C312	ECUE1C562KBQ	16V 5600P
C361	ECUE1H332KBQ	50V 3300P
C362	ECUE1C822KBQ	16V 8200P

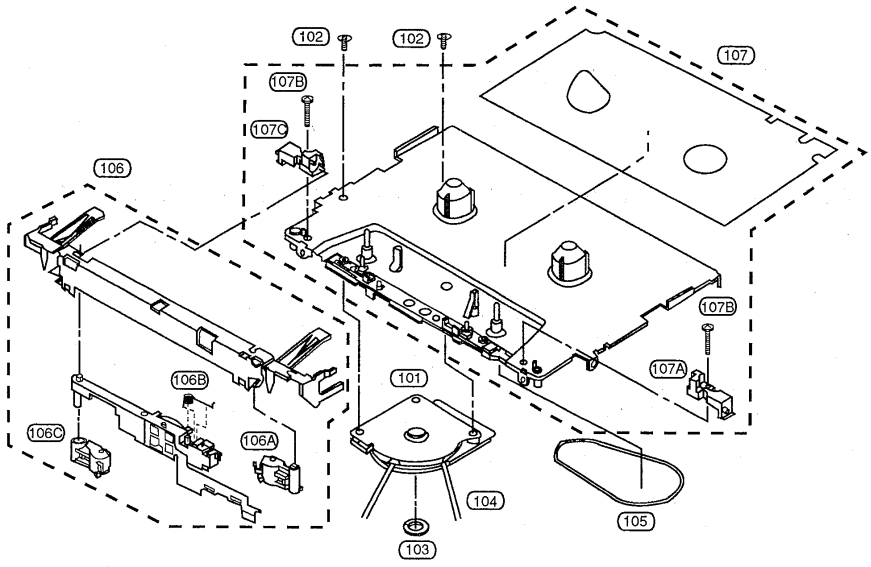
Ref. No.	Part No.	Values & Remarks
C363	ECUVNC105ZFN	16V 1U
C364	ECUV0J105ZFV	6.3V 1U
C365	ECUE1C103KBQ	16V 0.01U
C366	ECUV1A474ZFV	10V 0.47U
C367	ECST0GY156RR	4V 15U
C371	RCUV1C223KBV	16V 0.022U
C372	ECUE1C562KBQ	16V 5600P
C402	ECUVNC474KBN	16V 0.47U

Ref. No.	Part No.	Values & Remarks
C403	ECUV1C104KBV	16V 0.1U
C404	ECST1AY225RR	10V 2.2U
C408	ECUVNC334KBN	16V 0.33U
C801	ECUE1H221KBQ	50V 220P
C802	ECUE1H102KBQ	50V 1000P
C803	ECUE1H221KBQ	50V 220P
C810-812	ECUE1H331KBQ	50V 330P

■Mechanism Parts Location

Item	FWD & REV mode
Wow and flutter	0.3 % (WRMS)
Pressure of pinch roller	110±10 g
Take-up tension	More than 60 g
Playback torque	20±5 g
FF/REW torque	More than 60 g · cm

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



■Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM	
101	BFL26NB1AT	MOTOR	
102	XQS14+A2FZ	SCREW	
103	RHW40002	WASHER	
104	RDV0037	CAPSTAN BELT(1)	
105	RDV0044	CAPSTAN BELT(2)	

Ref. No.	Part No.	Part Name & Description	Remarks
106	RXQ0445	HEAD BLOCK ASS'Y	
106A	RXL0130	PINCH ROLLER ARM(F)	
106B	RME0187-1	HEAD ARM SPRING	
106C	RXL0131	PINCH ROLLER ARM(R)	
107	RFKRQSX55-K	MECHANISM BLOCK ASS'Y	
107A	RMQ0547	HOLD PIECE(F)	
107B	RHD14047	SCREW	
107C	RMQ0548	HOLD PIECE(R)	

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL	
P1	RPK0816	PACKING CASE	
P2	RPQ0575	PAD	
P3	RPQ0581-1	SPACER	
		ACCESSORIES	
A1	RQT3683-G	INSTRUCTION MANUAL	
A2	RP-BP61SYS1	RECHARGEABLE BATTERY	
A2-1	RFA0475-Q	R. BATTERY CARRYING CASE	
A3	RFA0617-H	DRY CELL BATTERY CASE	
A3-1	RKK0071-H	DRY CELL BATTERY COVER	
A4	RFC0043A-K	CARRYING BAG	

Ref. No.	Part No.	Part Name & Description	Remarks
A5	RFEV001PVKS	REMOTE CONTROLLER	
A6	RFEV316P-KS	STEREO EARPHONES	
A7	RP-BC155AEY	CHARGER	⚠
A8	RQCB0169	SERVICENTER LIST	
A9※	RKB2052A-0	EAR PADS	
		<PRINTED CIRCUIT	
		BOARDS ASS'Y>	
PCB1	REP2401A	MAIN P.C.B. ASS'Y	(RTL)
		<GREASE OR JIG/TOOL>	
		TEST TAPE	
SA1	QZZCWAT	TAPE SPEED ADJ.	

※This item is not attached merchandise, but it is supplied as a replacement part.

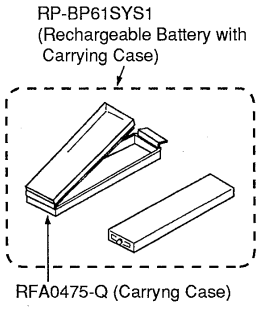
- The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

■Supply of Rechargeable Battery as Replacement Parts

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

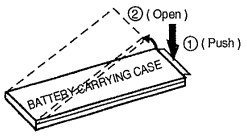
Replacement Parts:

- Rechargeable Battery (RP-BP61SYS1) to be supplied will be provided with Carrying Case (RFA0475-Q).
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFA0475-Q) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

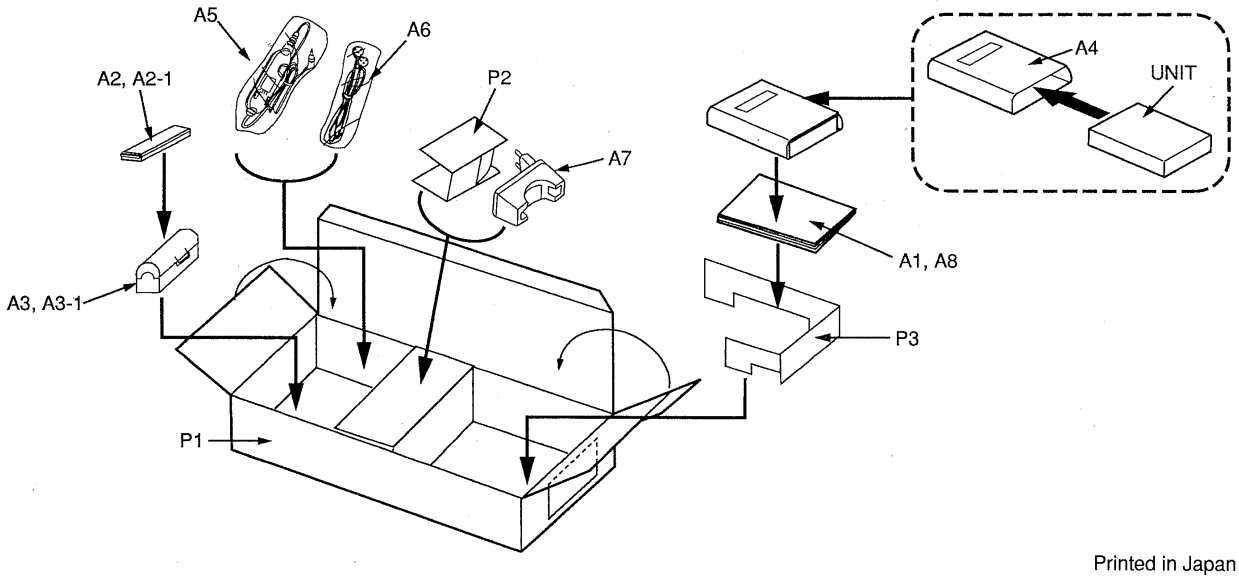


■Caution in Use of Rechargeable Battery

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case. If not, it may either heat or ignite by shorting with a metal.



■Packaging



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