

Service Manual

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AD0102028C2

Service Manual

Cassette Deck



- RS-DV250

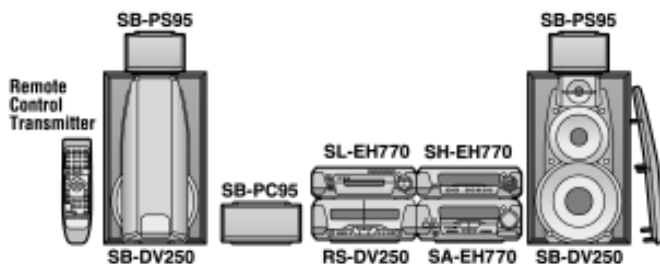
AR-2 Mechanism series

Colour

(S).....Silver Type

Area

(E).....Europe.



Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Manufactured under license from Dolby Laboratories.
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System	SC-EH770
Sound Processor	SH-EH770
Tuner/Amplifier	SA-EH770
CD Changer	SL-EH770
Cassette Deck	RS-DV250
Front Speakers*	SB-DV250
Center Speaker*	SB-PC95
Surround Speakers*	SB-PS95

* : Made in Spain.

Specifications

Deck system:	Stereo cassette deck	Frequency response (Dolby NR off):	
Track system:	4 track, 2 channel	TYPE I (NORMAL);	20 Hz – 16 kHz (DIN)
Recording system:	AC bias	TYPE II (HIGH);	20 Hz – 16 kHz (DIN)
Bias frequency:	100 kHz	TYPE IV (METAL);	20 Hz – 16 kHz (DIN)
Erasing system:	AC erase	S/N (Signal level = max recording level, TYPE II type tape):	
Heads:		NR off;	56 dB (A weighted)
Deck 1		Dolby B NR on;	66 dB (A weighted)
(Playback head);	Permalloy head	Input sensitivity and impedance:	
Deck 2		REC (IN);	150 mV/ 23 kΩ
(Recording/Playback head);	Permalloy head	Output voltage and impedance:	
(Erasing head);	Double gap ferrite head	PLAY (OUT);	280 mV/ 360 Ω
Motors:		General	
Deck 1, 2 Capstan drive;	DC servo motor	Dimensions (W×H×D):	294×118.5×281 mm
Tape speed:	4.8 cm/sec.	Mass:	2.1 kg
Wow and flutter:	0.16 % (WRMS)		
Fast forward and rewind times:	Approx. 110 seconds with C-60 cassette tape	Notes:	Specifications are subject to change without notice. Mass and dimensions are approximate.

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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.

Technics®

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1 Note

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Refer to the service manual for Model No. SA-EH770 (Order No. AD0102033C2) for information on Accessories and Packaging.

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2 Location of Controls

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3 Operation Checks and Component Replacement /Procedures

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- This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
- For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

[3.1 Checking for the main P.C.B.](#)

[3.2 Checking for the operation P.C.B.](#)

[3.3 Replacement for the motor ass'y, capstan belt and winding belt](#)

[3.4 Replacement for the components parts on the mechanism P.C.B.](#)

[3.5 Replacement for the pinch roller ass'y and head block](#)

[3.6 Replacement for the cassette lid ass'y](#)

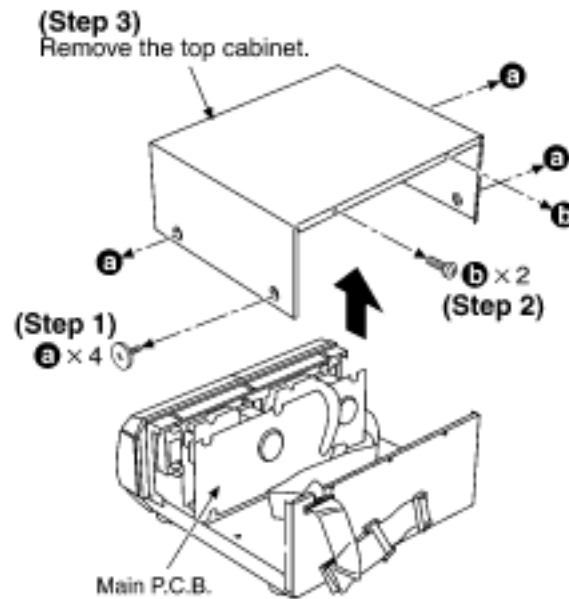
[3.7 Replacement for the cassette holder](#)

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3.1 Checking for the main P.C.B.

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- Check the main P.C.B. as shown above.

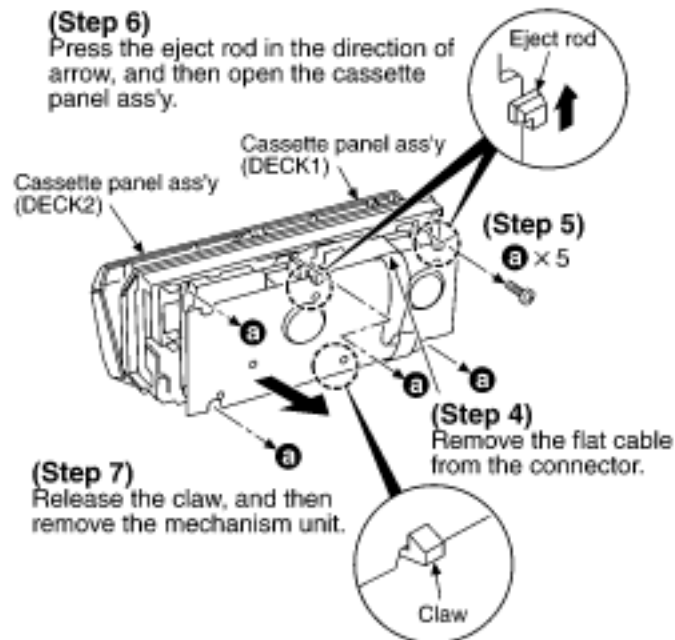
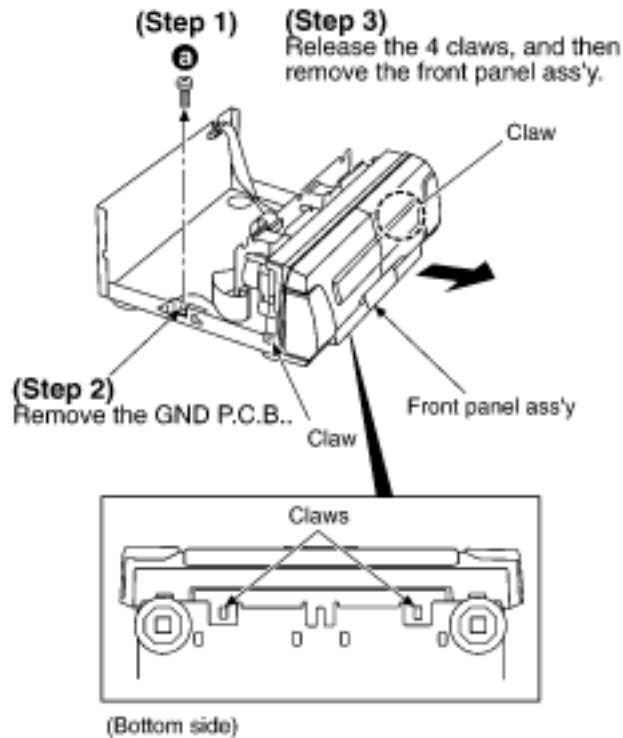
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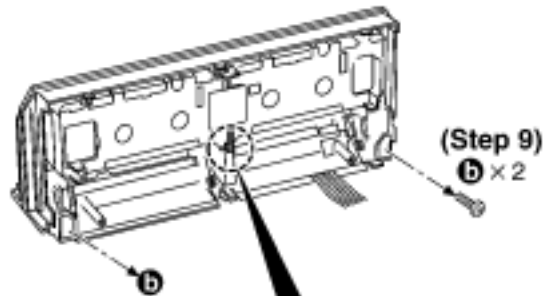
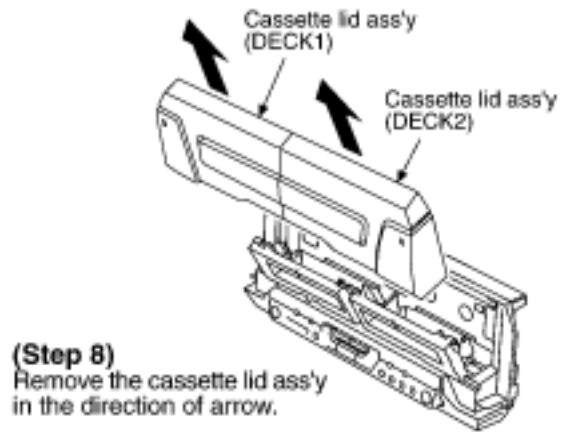
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3.2 Checking for the operation P.C.B.

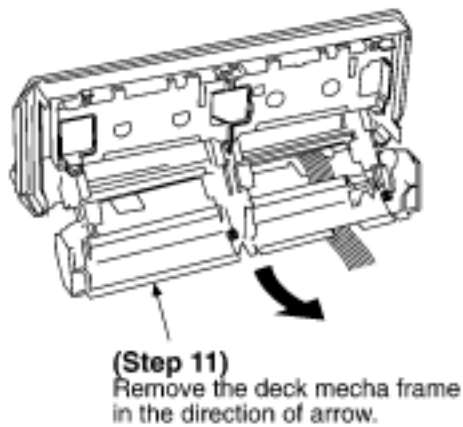
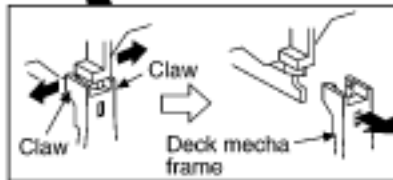
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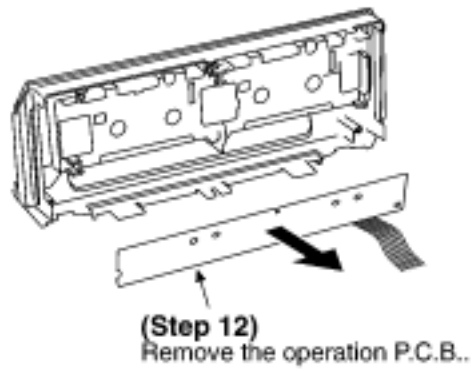
- Follow the (Step 1) - (Step 3) of item 3.1.



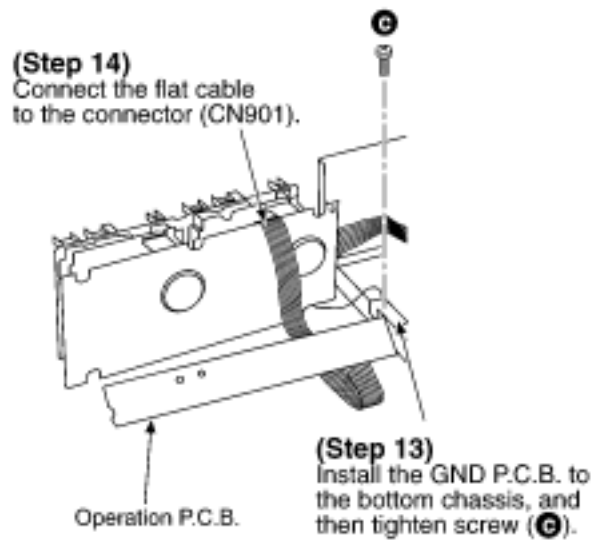


(Step 10)
Release the 2 claws, and then remove the deck mecha frame.





- Check the operation P.C.B. as shown below.



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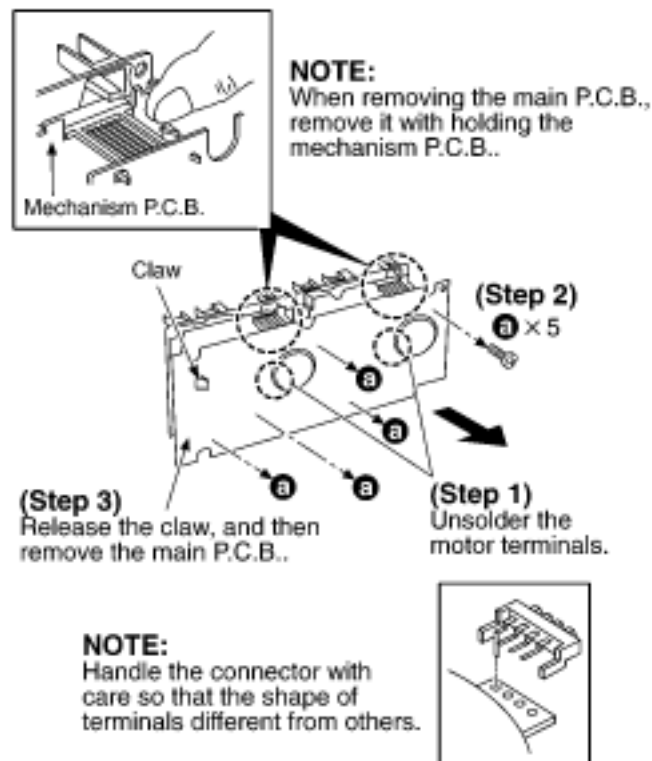
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3.3 Replacement for the motor ass'y, capstan belt and winding belt

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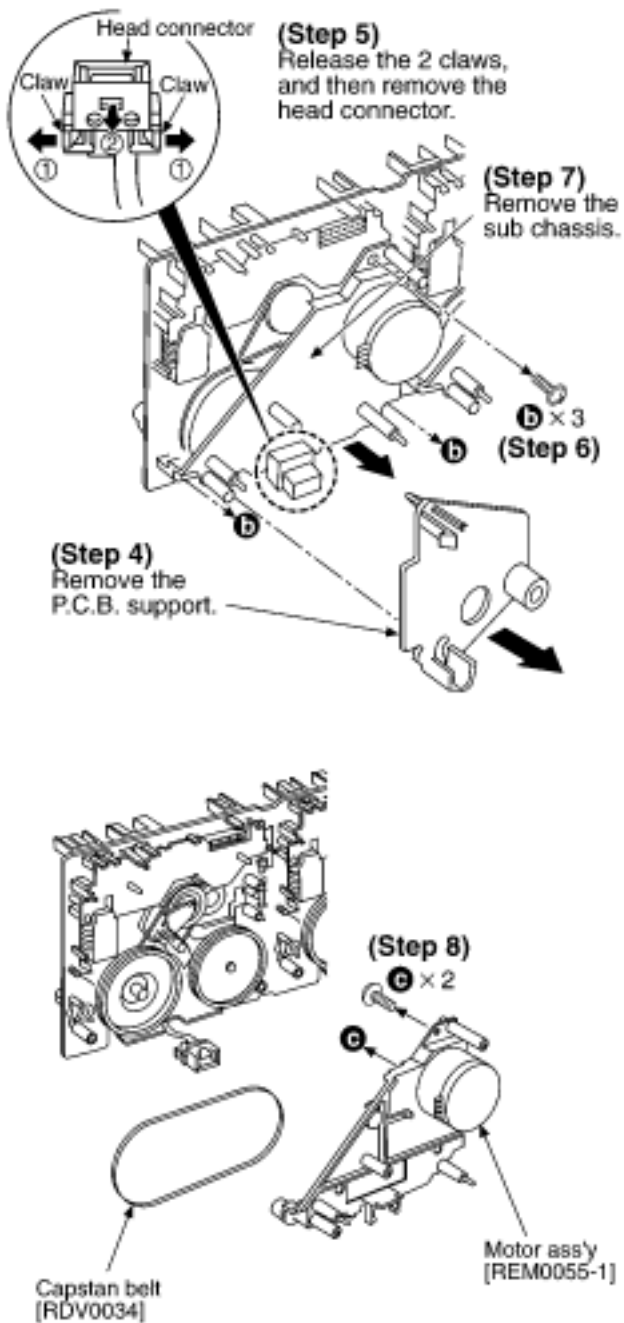
- Follow the (Step 1) - (Step 3) of item 3.1.
- Follow the (Step 1) - (Step 7) of item 3.2.

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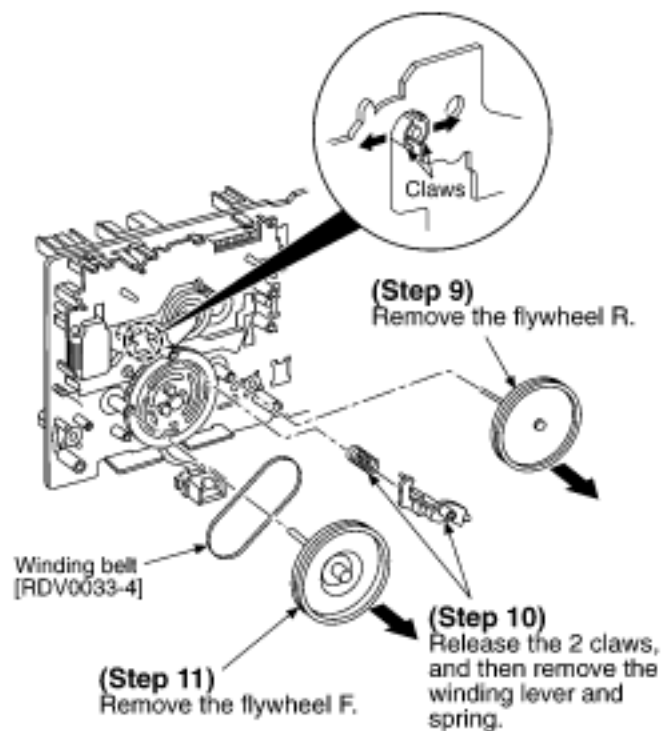


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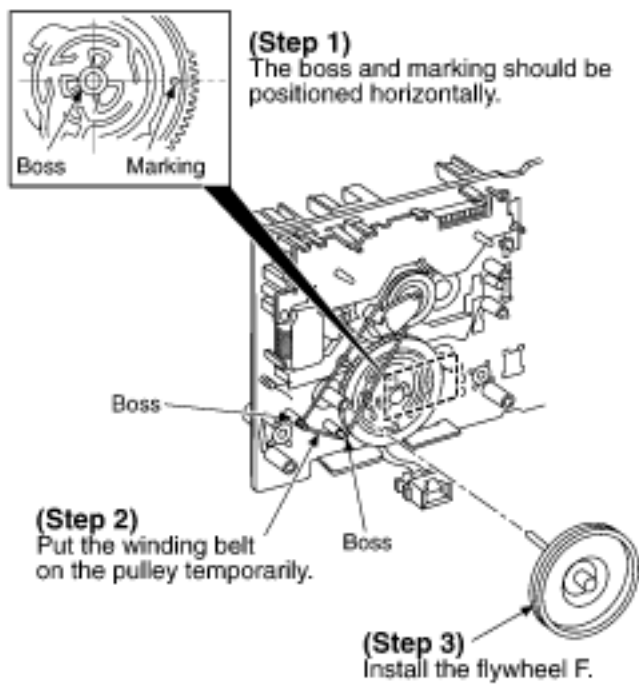
※ The illustration below shows DECK2 mechanism.
For DECK1 mechanism, perform the same
procedure as DECK2.

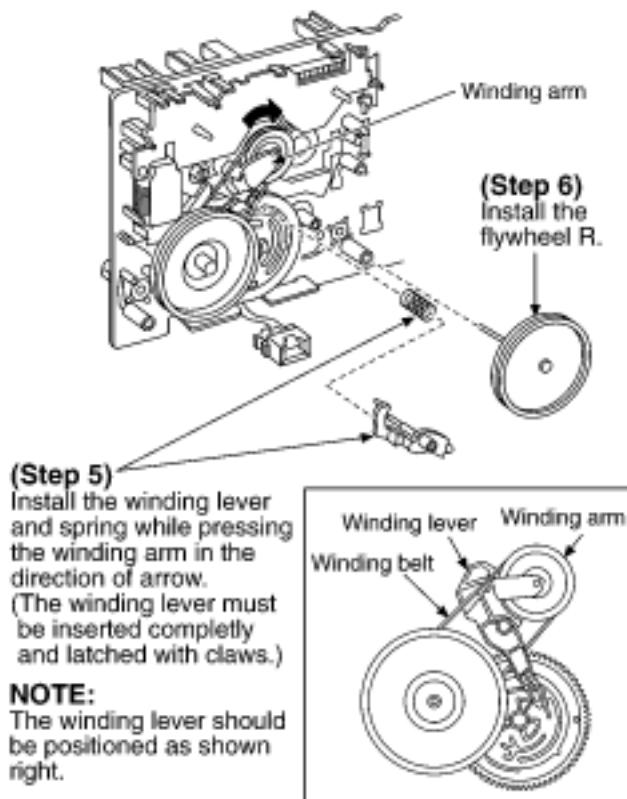
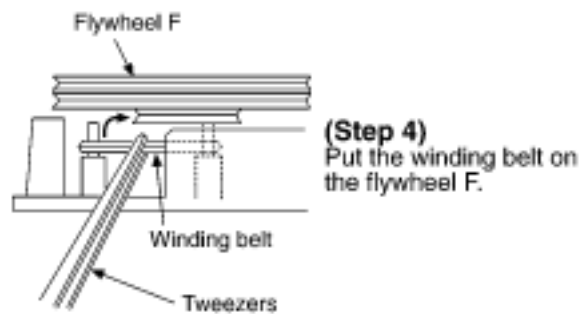


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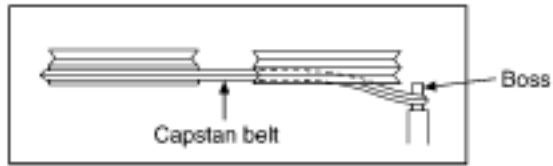
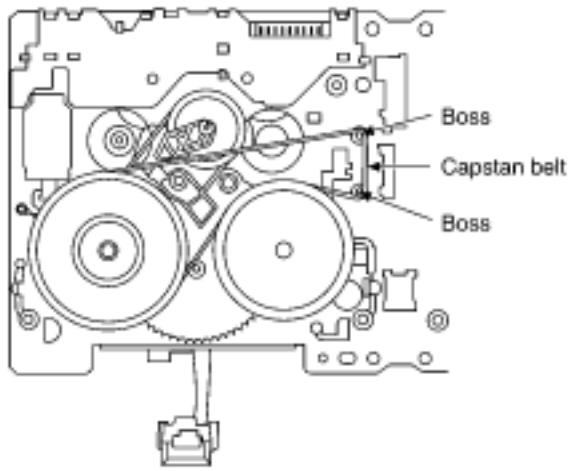
Installation of the belt





(Step 7)

Put the capstan belt temporarily as shown below.



(Side view)

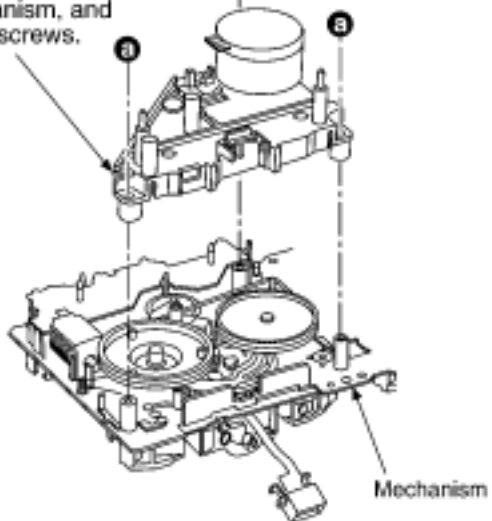
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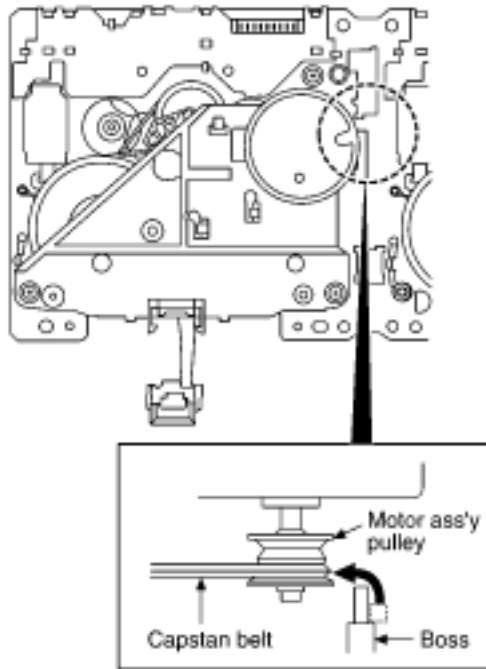
(Step 9)

a x 3

(Step 8)

Install the sub chassis to the mechanism, and then tighten screws.





(Step 10)
Put the capstan belt on the
motor ass'y pulley.

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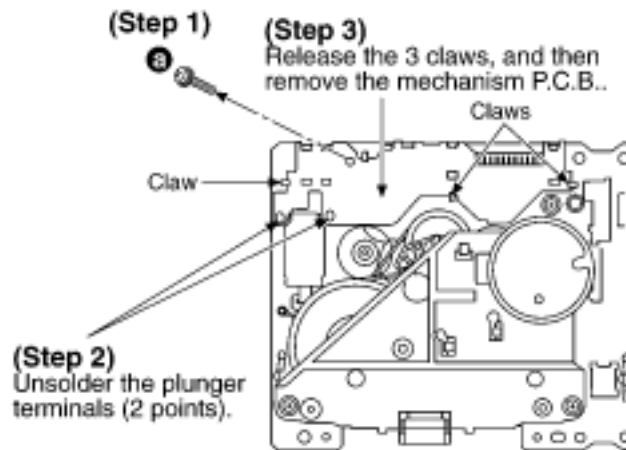
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3.4 Replacement for the components parts on the mechanism P.C.B.

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- Follow the (Step 1) - (Step 3) of item 3.1.
- Follow the (Step 1) - (Step 7) of item 3.2.
- Follow the (Step 1) - (Step 4) of item 3.3.



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3.5 Replacement for the pinch roller ass'y and head block

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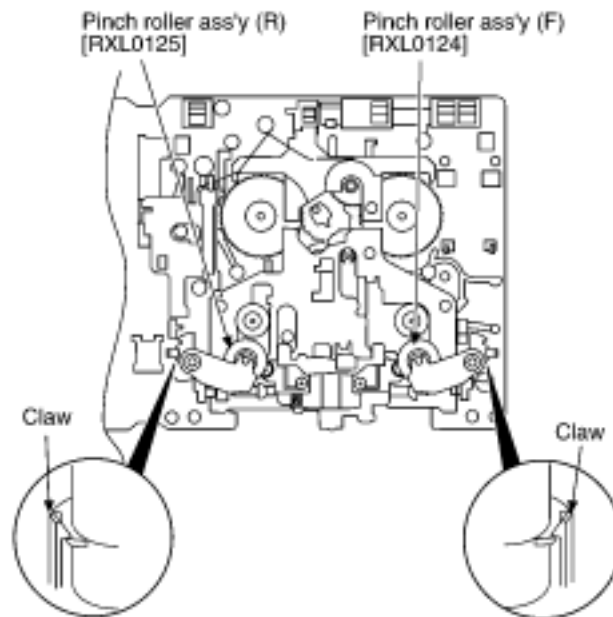
- Follow the (Step 1) - (Step 3) of item 3.1.
- Follow the (Step 1) - (Step 7) of item 3.2.
- Follow the (Step 1) - (Step 5) of item 3.3.

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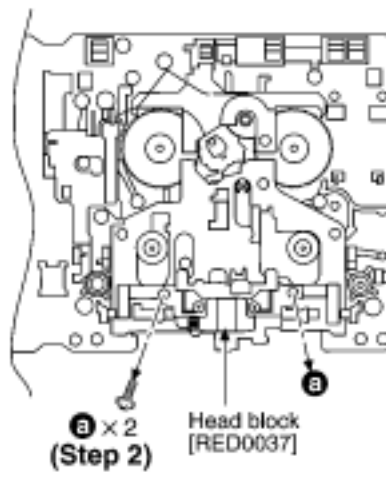
※ The mechanism as shown below is for DECK2.
For the one of DECK1, perform the same procedures.

(Step 1)

Release the 2 claws, and then remove the pinch roller (R), (F).



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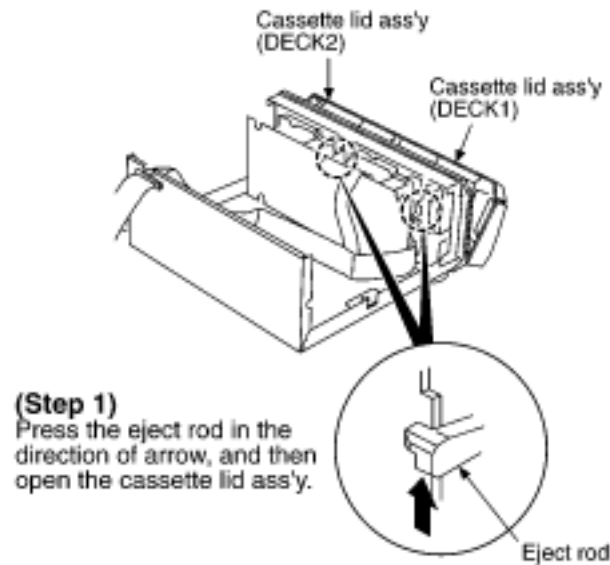
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3.6 Replacement for the cassette lid ass'y

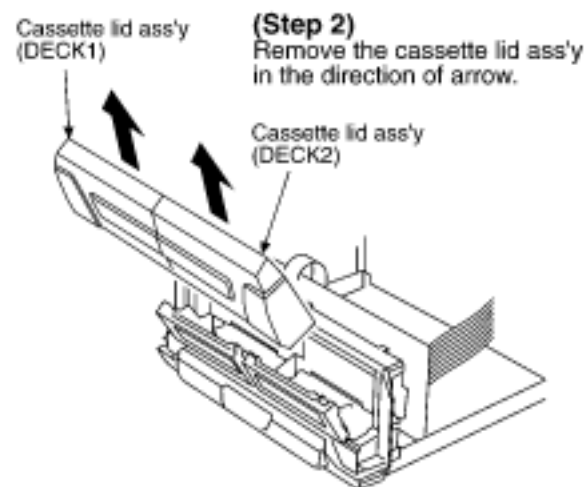
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- Follow the (Step 1) - (Step 3) of item 3.1.

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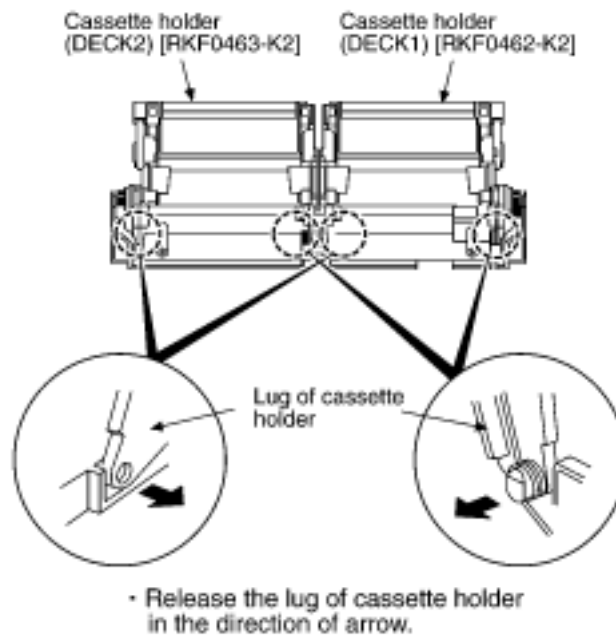


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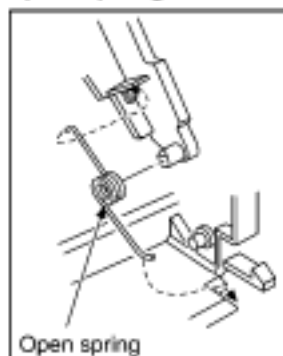
3.7 Replacement for the cassette holder

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- Follow the (Step 1) - (Step 3) of item 3.1.
- Follow the (Step 1) - (Step 11) of item 3.2.



■ Open spring installation



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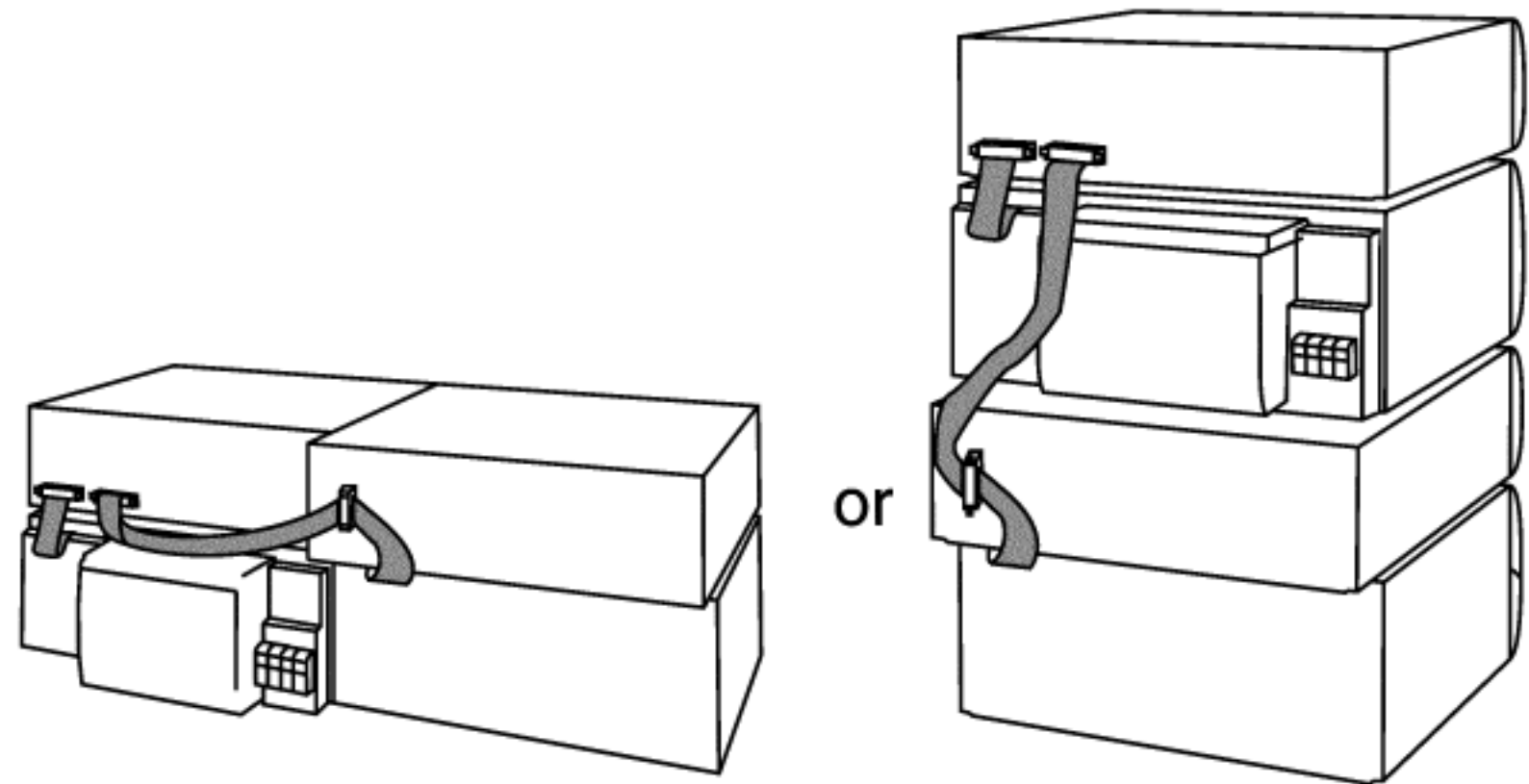
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4 To Supply Power Source

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This unit is designed to operate on power supplied from system connected. /When a component requires service, use the system connections to supply power source. /For system connections, refer to [Fig.4-1](#).

Fig. 4-1.



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5 Service Mode Function of Cassette Mechanism

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This unit is equipped with a service mode function of cassette mechanism, so that if the unit operates incorrectly, the fault displayed using an error code on the FL display of the Tuner/Amplifier (SA-EH770). The system control IC and FLdisplay are part of the Tuner/Amplifier so make sure the system has been connected properly before using this function. Use this function during maintenance to check faults of items below.

[5.1 Cassette tape to be prepared](#)

[5.2 Selecting service mode](#)

[5.3 Deck 1 mechanism check](#)

[5.4 Deck 2 mechanism check](#)

[5.5 Exiting service mode](#)

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5.1 Cassette tape to be prepared

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- [Metal tape:](#)

Recorded music tape with only one erasure prevention tab intact./(use middle portion of tape)

- [Normal tape: /CrO2 tape:](#)

Recorded music tape with both erasure prevention tabs intact./(use middle portion of tape)

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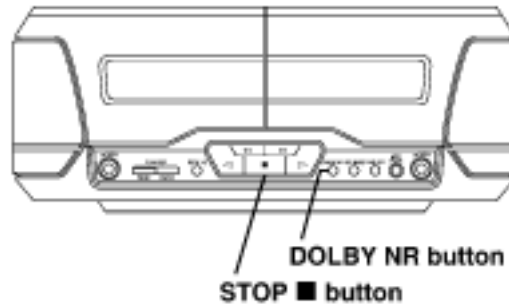
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5.2 Selecting service mode

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1. Turn on the power to the unit.
2. Make sure that no tape is inserted in the cassette deck. (Service mode cannot be selected with a tape inserted in the cassette deck.)
3. Press the DOLBY NR button for about 2 seconds, and keep pressing it, also press the STOP button for about 2 seconds. Refer to [Fig. 5-1](#).

Fig. 5-1.



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5.3 Deck 1 mechanism check

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1. Press the Deck 1/deck 2 select button to change the flashing Deck 2 indicator to Deck 1. Refer to [Fig. 5-2](#). /(No change required if Deck 1 indicator already flashing.)
2. Press the Deck 1 cassette holder open button to open the Deck 1 cassette holder. Refer to [Fig. 5-2](#).
3. Insert a CrO2 tape into the Deck 1 and close the cassette holder.
4. Press the Fast forward button. Refer to [Fig. 5-2](#). /(Tape fast forwards for about 2 seconds then stops.)
5. Press the PLAY button. Refer to [Fig. 5-2](#). /(After TPS operation and check, the tape stops.)
6. Open the Deck 1 cassette holder and replace the tape with a normal tape.
7. Close the Deck 1 cassette holder.
8. Press the Record pause button. Refer to [Fig. 5-2](#). /(No record operation.)
9. Press the STOP button. Refer to [Fig. 5-2](#). A mechanism error code is displayed. Refer to Table 5-1. Each time the STOP button is pressed, the fault items are displayed in sequence.

Fig. 5-2.

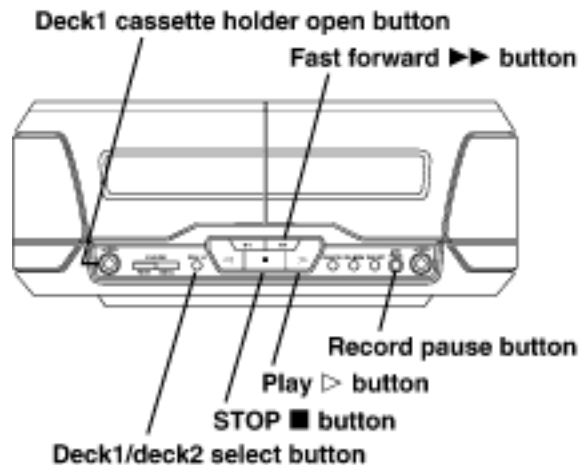


Table 5-1.

FL display	Symptom	Cause
H01	Cassette deck does not operate correctly.	Faulty cassette deck mechanism mode detect switch (Deck 1: S951, Deck 2: S971), plunger and capstan motor. /(Check and replace)
H02	Unit does not record or the unit goes into recording mode even when the erasure prevention tabs have been removed from the cassette.	Faulty erasure prevention tabs detect switch (S974, S975) or short-circuit. (Check and replace)
H03	Tape does not play even when the tape deck play button is pressed. The motor operates when the tape deck play button is pressed even if cassette is loaded in the deck.	Faulty tape detect switch (Deck 1: S952 Deck 2: S972) or short-circuit. (Check and replace)
H06	Cassette deck does not detect CrO2 tape.	Faulty CrO2 tape detect switch (Deck 1: S953, Deck 2: S973)./(Check and replace)
H07	Cassette deck does not detect Metal tape.	Faulty Metal tape detect switch (S976). (Check and replace)
F01	When the tape play button is pressed, tape advances only slightly and then stops.	Reel pulse error (Faulty Hall IC). (Check and replace)
F02	TPS (tape program search) does not work.	Faulty TPS signal detection or faulty plunger control. /(Check and replace mechanism control IC)

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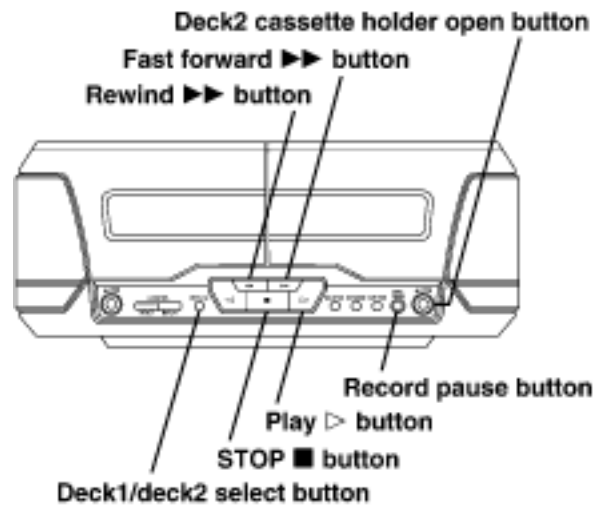
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5.4 Deck 2 mechanism check

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1. Press the Deck 1/deck 2 select button to change the flashing Deck 1 indicator to Deck 2. Refer to [Fig. 5-3.](#)
2. Press the Deck 2 cassette holder open button to open the Deck 2 cassette holder. Refer to [Fig. 5-3.](#)
3. Insert a metal tape into the Deck 2 with an intact erasure prevention tab on the right side.
4. Close the Deck 2 cassette holder.
5. Press the Fast forward button. Refer to [Fig. 5-3.](#) /(Tape fast forwards for about 2 seconds then stops.)
6. Open the Deck 2 cassette holder and turn over the metal tape. (intact erasure prevention tab on the left side.)
7. Close the Deck 2 cassette holder.
8. Press the Rewind button. Refer to [Fig. 5-3.](#) /(Tape rewinds for about 2 seconds then stops.)
9. Open the Deck 2 cassette holder and replace the metal tape with a CrO2 tape.
10. Close the Deck 2 cassette holder.
11. Press the PLAY button. Refer to [Fig. 5-3.](#) /(After TPS operation and check, the tape stops.)
12. Open the Deck 2 cassette holder and replace the CrO2 tape with a normal tape.
13. Close the Deck 2 cassette holder.
14. Press the Record pause button. Refer to [Fig. 5-3.](#) /(No record operation.)
15. Press the STOP button. Refer to [Fig. 5-3.](#) A mechanism error code is displayed. Refer to Table 5-1. Each time the STOP button is pressed, the fault items are displayed in sequence.

Fig. 5-3.



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5.5 Exiting service mode

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1. Press the STOP button for more than 5 seconds (Diagnostic contents stored in memory for both Deck 1 and 2 are erased.)
2. Remove the cassette tape from the cassette holder.
3. Turn off the unit.

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6 Schematic Diagram Notes

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- This schematic diagram may be modified at any time with the development of new technology.

Notes:

- S900:

Stop switch (



)

- S901:

Deck 2 cassette holder open switch (



OPEN)

- S903:

Tape edit switch (TAPE EDIT)

- S904:

Record pause switch /(



REC PAUSE)

- S905:

Dolby noise reduction switch/(DOLBY NR)

- S906:

Fast forward switch (



- [S907:](#)

Forward side playback switch (



- [S909:](#)

Reverse side playback switch (



- [S910:](#)

Rewind switch (



- [S911:](#)

Reverse mode switch/(REV MODE)

- [S912:](#)

Deck 1/deck 2 select switch /(DECK 1/2)

- [S913:](#)

Counter display switch/(COUNTER DISPLAY)

- [S914:](#)

Counter reset switch/(COUNTER RESET)

- [S915:](#)

Deck 1 cassette holder open switch (



- [S951:](#)

Deck 1 mode detect switch

- [S952:](#)

Deck 1 half detect switch

- [S953:](#)

Deck 1 CrO2 tape detect switch

- [S971:](#)

Deck 2 mode detect switch

- [S972:](#)

Deck 2 half detect switch

- [S973:](#)

Deck 2 CrO2 tape detect switch

- [S974:](#)

Deck 2 reverse side record prevention tab detect switch

- [S975:](#)

Deck 2 forward side record prevention tab detect switch

- [S976:](#)

Deck 2 METAL tape detect switch

- [VR101:](#)

Deck 1 playback gain adjustment VR/(R ch)

- **VR102:**

Deck 2 playback gain adjustment VR/(L ch)

- **VR103:**

Deck 2 playback gain adjustment VR/(R ch)

- **VR104:**

Deck 1 playback gain adjustment VR/(L ch)

- **VR801:**

Deck 1 tape speed adjustment VR (normal)

- **VR803:**

Deck 2 tape speed adjustment VR (normal)

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.


- No mark

: Playback

- ()

: Recording

- 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.

- The supply part number is described alone in the replacement parts list.
- **Caution!**

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

Do not touch the legs of IC or LSI with the fingers directly.

- Voltage and signal line

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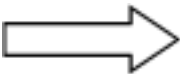
: Positive voltage line

○



: Playback signal line

○



: Recording signal line

7 Schematic Diagram

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8 Printed Circuit Board Diagram

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9 Type Illustration of ICs, Transistors and Diodes

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10 Wiring Connection Diagram

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11 Block Diagram

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12 Terminal Function of ICs

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[12.1 IC701 \(M38503M2406F\):System Control](#)

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12.1 IC701 (M38503M2406F):/System Control

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Pin No.	Terminal Name	I/O	Function
1	Vcc	I	Power supply terminal
2	VREF	I	Reference voltage input
3	AVSS	-	GND terminal
4	LMT	O	Muting control signal output
5	PL1	O	Deck 1 solenoid control signal output
6	M1	O	Deck 1 motor drive control signal output
7	HALT	I	Power failure detect signal input
8	REQ	I	Serial communication request signal input
9	CS	I	Serial communication complete signal input
10	CLK	O	Serial communication clock signal output
11	DATA OUT	O	Serial communication data signal output
12	DATA IN	I	Serial communication data signal input
13	METAL 2	I	Deck 2 tape detect switch signal (METAL) input
14	CRO2 2	I	Deck 2 tape detect switch signal (CrO2) input
15	VSS	-	GND terminal
16	FWD LED	O	LED drive control signal (FWD) output
17	REV LED	O	LED drive control signal (REV) output
18	RESET	I	Reset signal input
19	XIN	I	Oscillator connected terminal (F=8 MHz)
20	XOUT	O	
21	VSS	-	GND terminal
22	CRO2 1	I	Deck 1 tape detect switch signal (CrO2) input
23	MODE	I	Deck 1 mechanism switch signal (MODE) input
24	HALF1	I	Deck 1 mechanism switch signal (Half) input
25	TPS	I	TPS signal input
26	A DATA	O	Serial data signal output for IC 101
27	A CLK	O	Serial clock signal output for IC 101
28	A LATCH	O	Serial latch signal output for IC 101
29	PL2	O	Deck 2 solenoid control signal output

30	M2	O	Deck 2 motor drive control signal output
31	ENC/DEC	O	Dolby NR record/playback mode select signal output
32	DOLBY ON/OFF	O	Dolby NR ON/OFF control signal output
33	E CS	-	EEPROM chip select signal output (Not used, open)
34 36	NC	-	Not used, open
37	LED CNT	O	LED color control signal output
38	PHOTO2T	I	Deck 2 reel pulse detect signal input
39	AD SW	I	Deck 2 mechanism switch signal input (Half, Mode, F REC INH., R REC INH.)
40	PHOTO1T	I	Deck 1 reel pulse detect signal input
41	KEY2	I	Operation key signal input
42	KEY1	I	Operation key signal input

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13 Measurements and Adjustments

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Note:

This unit RS-DV250 is designed to operate on power supplied from system connected.

[13.1 Measurement condition](#)

[13.2 Measurement instrument and special tool](#)

[13.3 Head azimuth adjustment \(Deck 1/2\)](#)

[13.4 Tape speed adjustment\(Deck 1/2\)](#)

[13.5 Playback gain adjustment \(Deck 1/2\)](#)

[13.6 Erase current confirmation \(Deck 2\)](#)

[13.7 Playback frequency response check \(Deck 1/2\)](#)

[13.8 Recording/playback frequency response and gain check \(Deck 2\)](#)

[13.8.1 Normal tape check](#)

[13.8.2 CrO2/Metal tape check](#)

[13.9 Adjustment point and test point](#)

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13.1 Measurement condition

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- Dolby NR switch is OFF
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Temperature is 20 ± 5 °C

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13.2 Measurement instrument and special tool

[TOP](#) [PREVIOUS](#) [NEXT](#)

- Electronic Voltmeter
- Frequency Counter
- AF Oscillator
- Test tape
 - Head azimuth adjustment (8 kHz, -20 dB): QZZCFM
 - Tape speed adjustment (3 kHz, -10 dB): QZZCWAT
 - Playback gain adjustment (315 Hz, 0 dB): QZZCFM
 - Recording/playback frequency response check:

QZZCFM/(315 Hz, -20 dB, 12.5 kHz~63 Hz, -20 dB)

QZZCRA4 (Normal blank tape)

QZZCRX2 (CrO₂ blank tape)

QZZCRZ6 (Metal blank tape)

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13.3 Head azimuth adjustment (Deck 1/2)

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1. Connect the measuring instrument as shown in [Fig. 13-1](#).
2. Replace azimuth screws for both forward and reverse directions after removing the screw-locking bond left on the head base. (Supply part No. of azimuth screw: [RHD17015](#))
3. Playback the azimuth adjustment portion (8 kHz, -20 dB) of test tape (QZZCFM). Adjust the azimuth screw until the outputs of the L/R ch are maximized. Refer to [Fig. 13-2](#). Make sure that the difference in the peak level between the left and right channels does not exceed 0.5 dB.
4. Perform the same adjustment in reverse playback mode.

[Check of the level difference forward and reverse directions.](#)

5. Playback the playback gain adjustment portion (315 Hz, 0 dB) of test tape (QZZCFM). Check if level difference between forward and reverse direction is within 1.5 dB.
6. After the adjustment, apply screw lock to the azimuth screw.

Fig. 13-1.

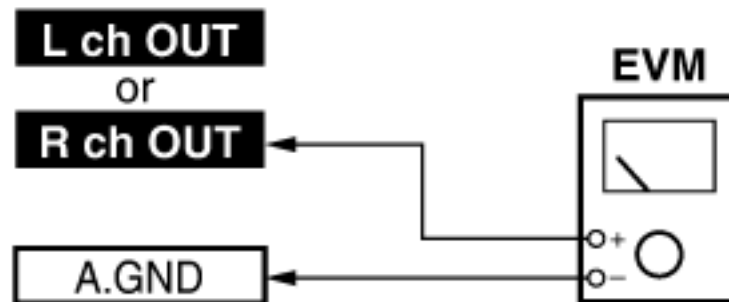
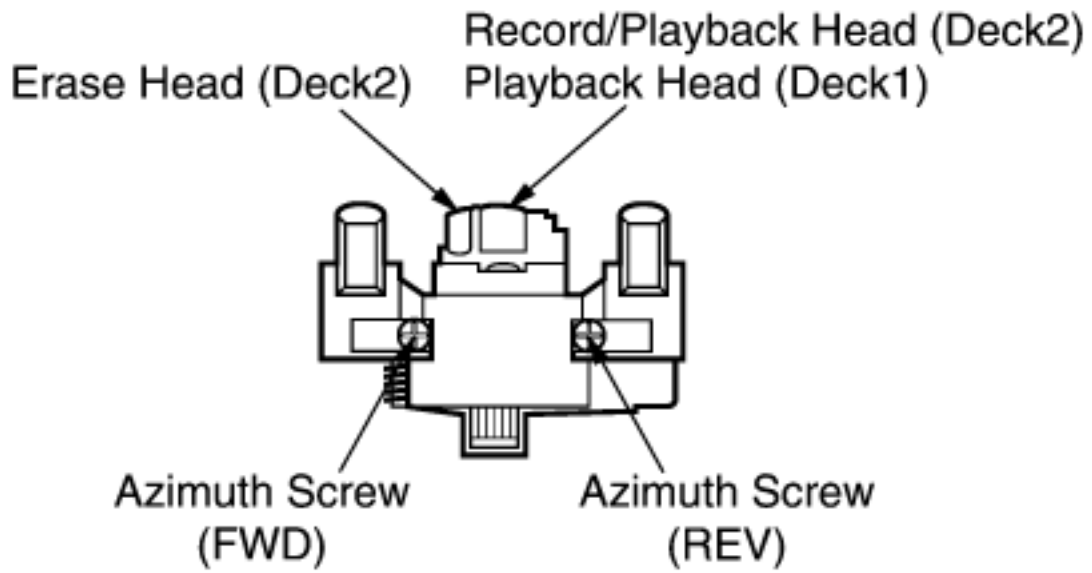


Fig. 13-2.



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13.4 Tape speed adjustment/(Deck 1/2)

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Note:

When connecting the unit to other system components for test, short the section between the test point [TP604](#) and [TP609](#) and turn on the entire system. (The unit is set to the TEST mode, and either Deck 1 or Deck 2 indicator will blink.)

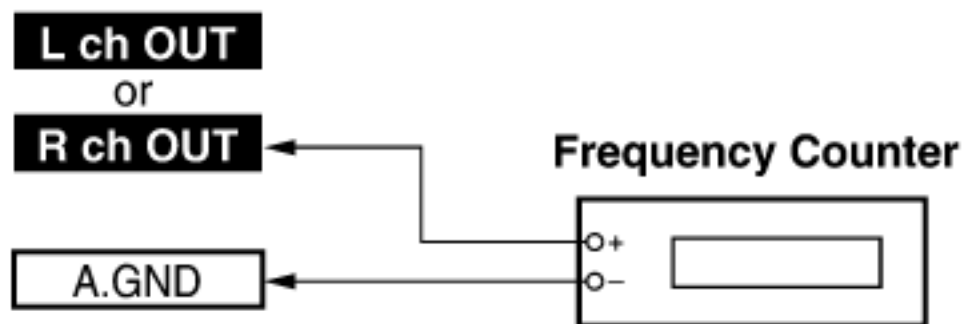
Normal speed (Standard value: 3000 ± 45 Hz)

1. Connect the measuring instrument as shown in [Fig. 13-3](#).
2. Playback the middle portion of test tape. (QZZCWAT)
3. Adjust [VR801](#) (Deck 1) and [VR803](#) (Deck 2) for output value shown below. (For adjustment point, refer to [Fig. 13-11](#).)

Adjustment target: 3000 ± 15 Hz (Normal speed)

Standard value: 3000 ± 45 Hz (Normal speed)

Fig. 13-3.



Note:

When the unit is finished for adjusting, disconnect the short section between [TP604](#) and [TP609](#).

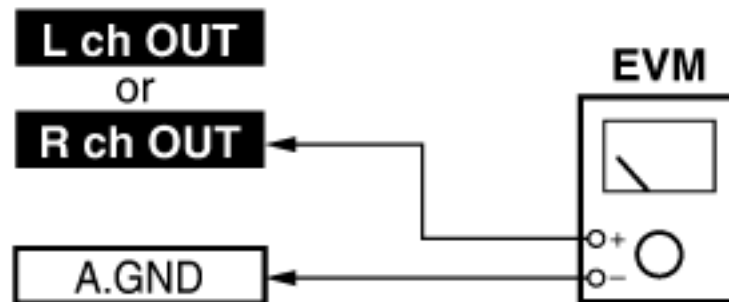
13.5 Playback gain adjustment (Deck 1/2)

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1. Connect the measuring instrument as shown in [Fig. 13-4](#).
2. Find the start of the 315 Hz, 0 dB section of test tape (QZZCFM), insert the tape into Deck 1 and 2, and play it back (FWD).
3. Adjust Deck 2: [VR102](#) (L ch) [[VR103](#) (R ch)] and Deck 1: [VR104](#) (L ch) [[VR101](#) (R ch)] so that the output is within the standard value shown below. (For adjustment point, refer to [Fig. 13-11](#).)

[[Standard value: 265 mV ~ 300 mV](#)]

Fig. 13-4.



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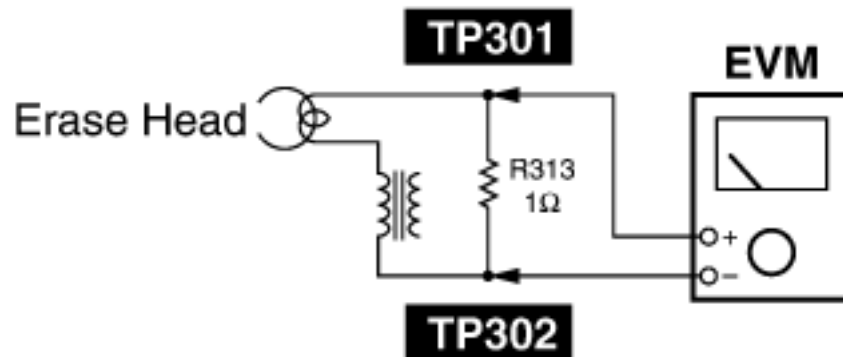
13.6 Erase current confirmation (Deck 2)

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1. Connect the measuring instrument as shown in [Fig. 13-5](#).
2. Insert the blank tape into Deck 2, and press the Record pause button.
3. Check if the output at this time between the erase current confirmation point [TP301](#) and [TP302](#) (the output on both edged of R313) is within the standard value shown below. (For the erase current confirmation point, referto [Fig. 13-11](#).)

Standard Value		EVM reading
Normal tape:	85 ± 25 mA	(85 ± 25 mV)
CrO2 tape:	150 ± 25 mA	(150 ± 25 mV)
Metal tape:	185 ± 25 mA	(185 ± 25 mV)

Fig. 13-5.



Note:

The test tape is not required when confirming the erase current.

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13.7 Playback frequency response check (Deck 1/2)

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1. Connect the measuring instrument as shown in [Fig. 13-6](#).
2. Playback the 315 Hz, -20 dB and 12.5 kHz to 63 Hz, -20 dB sections of test tape (QZZCFM) and then, using the 315 Hz, -20 dB playback output as a reference (0 dB).
3. Confirm the playback frequency response is within the range shown in [Fig. 13-7](#).

Fig. 13-6.

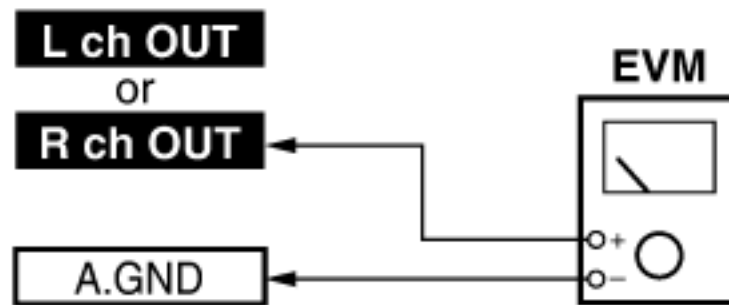
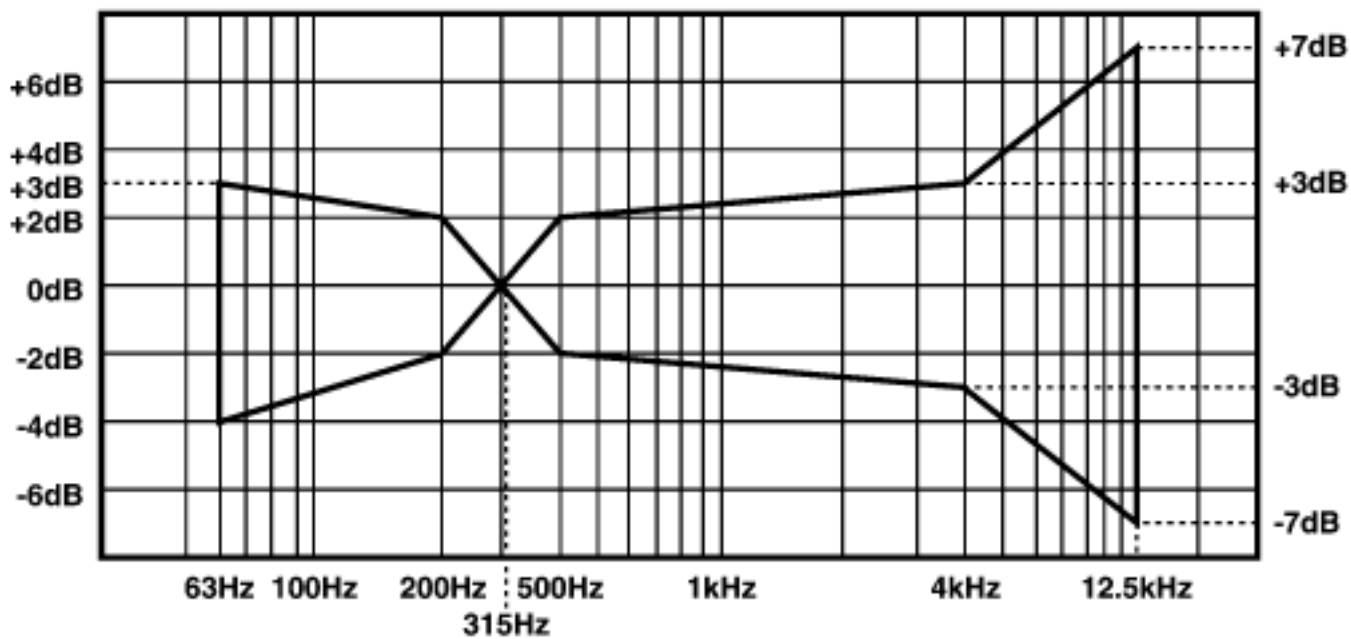


Fig. 13-7.



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13.8 Recording/playback /frequency response and gain check (Deck 2)

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[13.8.1 Normal tape check](#)

[13.8.2 CrO2/Metal tape check](#)

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13.8.1 Normal tape check

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1. Connect the measuring instrument as shown in [Fig. 13-8](#).
2. Insert a Normal type blank tape (QZZCRA4) into Deck 2.
3. Record signals at 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 10 kHz and 12.5 kHz (28 mV).
4. Set the playback frequency of recorded signals at 1 kHz as a reference response (0 dB).
5. Playback the recorded signal to confirm that the output is within the range of the overall frequency response shown in [Fig. 13-9](#).

Fig. 13-8.

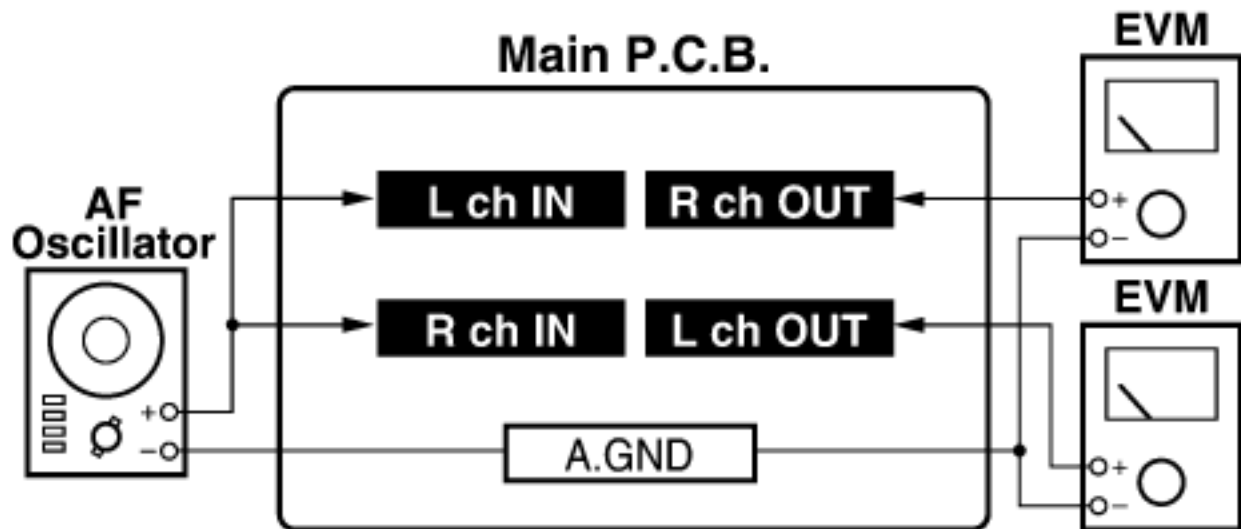
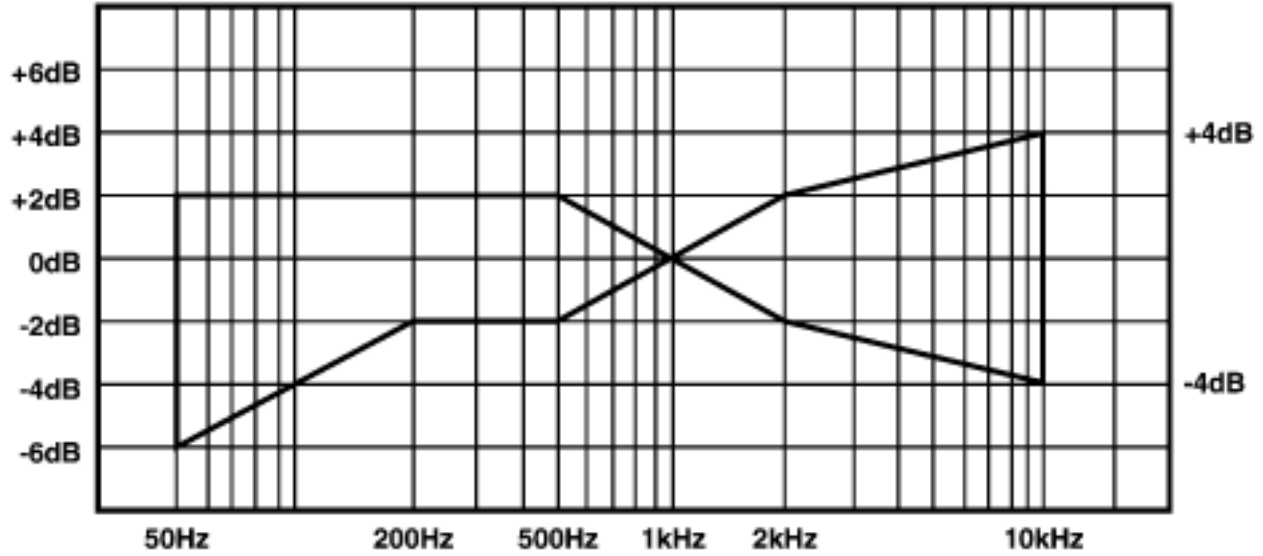
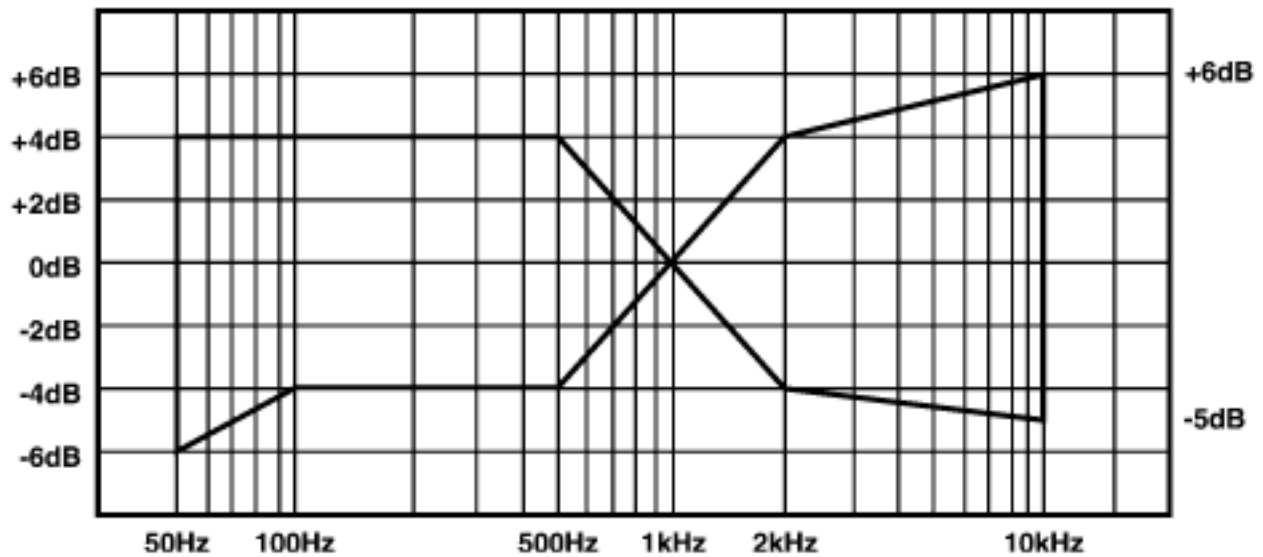


Fig. 13-9.

Normal Tape Overall frequency response chart (Dolby NR OFF)



(Dolby NR ON)



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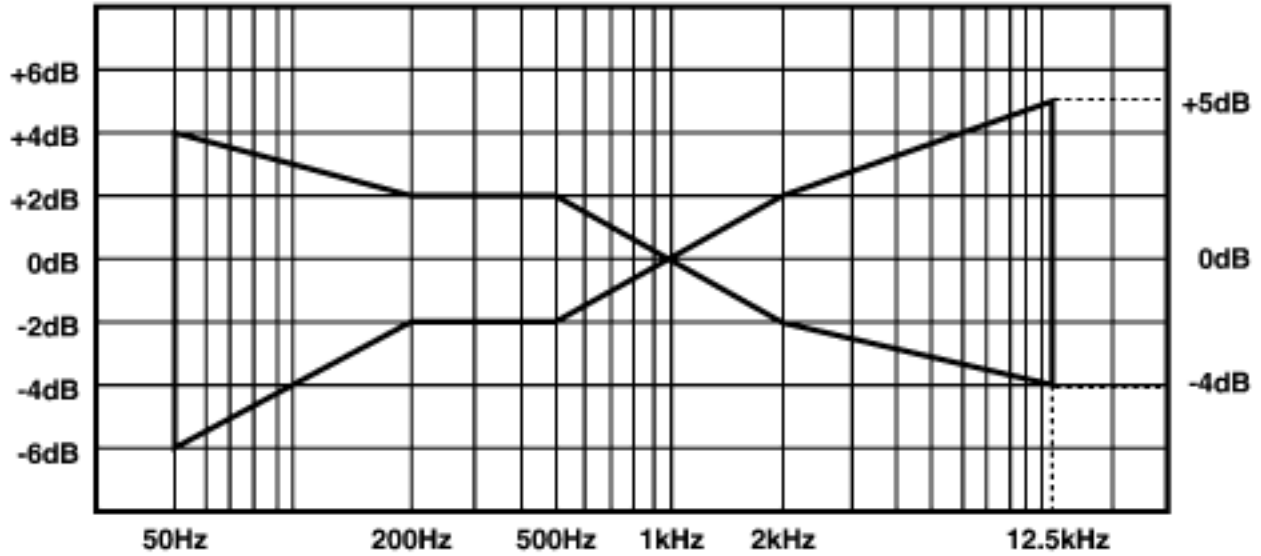
13.8.2 CrO₂/Metal tape check

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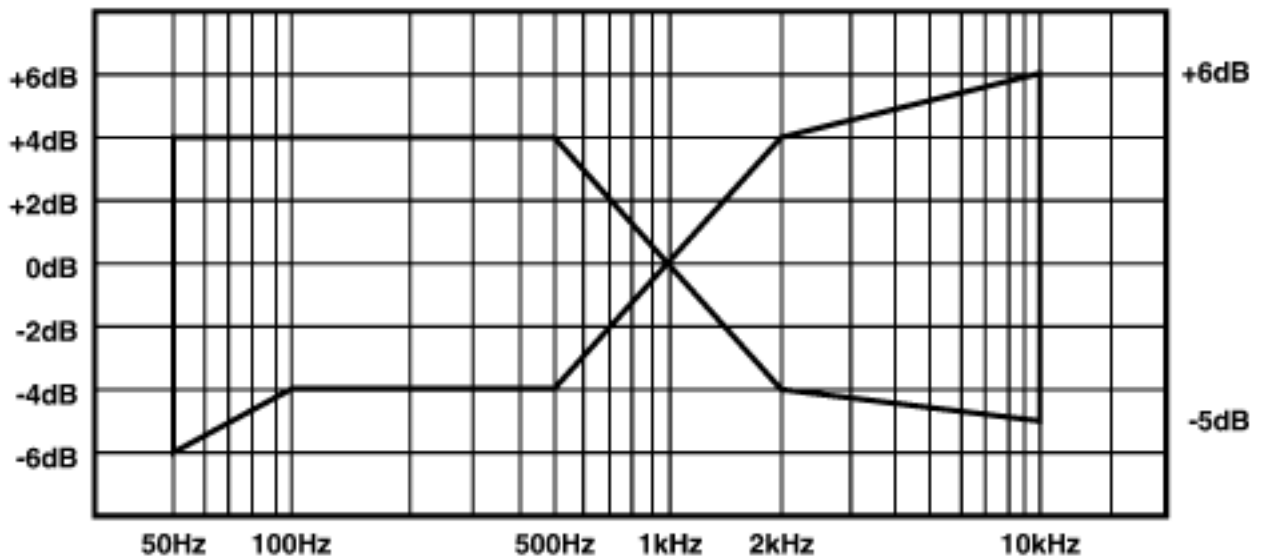
1. Connect the measuring instrument as shown in [Fig. 13-8](#).
2. Insert a CrO₂/Metal tape into Deck 2.
3. Record signals at 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 10 kHz and 12.5 kHz (28 mV).
4. Set the playback frequency of recorded signals at 1 kHz as a reference response (0 dB).
5. Playback the recorded signal to confirm that the output is within the range of the overall frequency response shown in [Fig. 13-10](#).

Fig. 13-10.

CrO₂ and Metal Tape Overall frequency response chart (Dolby NR OFF)



(Dolby NR ON)



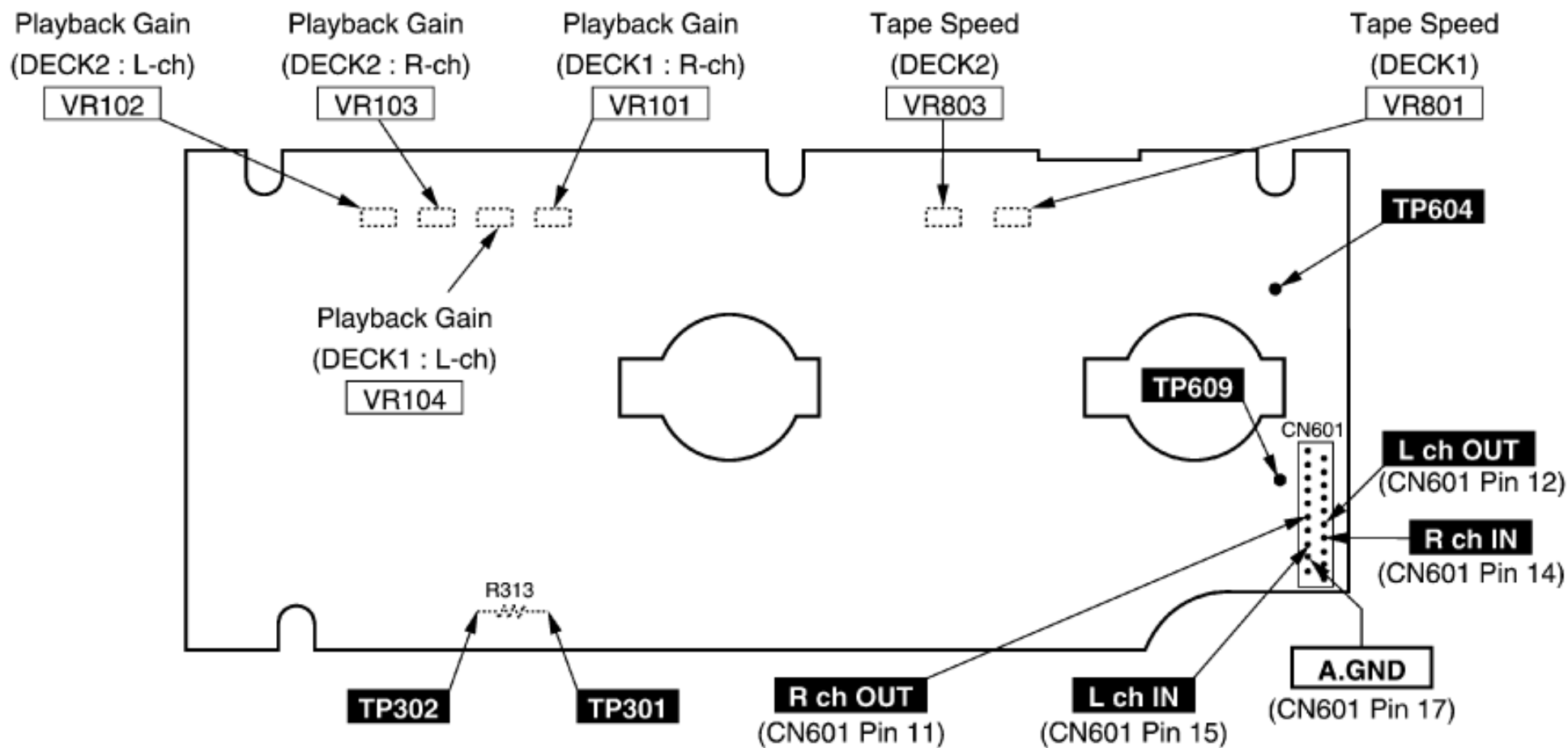
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13.9 Adjustment point and test point

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Fig. 13-11.



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14 Checking Procedure for Self-operation of Cassette Mechanism Ass'y

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- This procedure describes simple methods independent of mechanism controller or governor circuit.

14.1 Operation Check Providing with Cassette Tape

14.1.1 Connection Diagram Between the Mechanism Ass'y and Power Supply(MOTOR and Plunger)

14.1.2 Detail View of EJECT Lever (EJECT lever fixed by rubber band, Plunger rib operation)

14.2 Operation Check Not Provided with Cassette Tape

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14.1 Operation Check Providing with Cassette Tape

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1. Push up the EJECT lever with rubber band. (Refer to [Fig. 14-2.](#))
2. Apply DC 5V to the MOTOR. (MOTOR will be rotated) (Refer to [Fig. 14-1.](#))
3. Provide the cassette tape with mechanism ass'y.
4. Apply DC 9V to the plunger, and then operate it by switching power ON/OFF. (Power: +PL, -PL) (Refer to [Fig. 14-1.](#))
 - A. **FWD PLAY:** Supply power to the plunger momentarily. (Duration: approx. 50msec.)
 - B. **FWD FF:** At FWD PLAY mode, supply power to the plunger momentarily. (Duration: approx. 50msec.)
 - C. **STOP:** At FWD FF mode, supply power to the plunger momentarily. (Duration: approx. 50msec.)
 - D. **REV PLAY:** At STOP mode, supply power to the plunger for ordinary duration. (Duration: approx. 200msec.)
 - E. **REV REW:** At REV PLAY mode, supply power to the plunger momentarily. (Duration: approx. 50msec.)
 - F. **STOP:** At REV REW mode, supply power to the plunger momentarily. (Duration: approx. 50msec.)

Repeat the above operation to FWD PLAY mode.

Note: Incorrect duration for power supply may be operated to other mode.

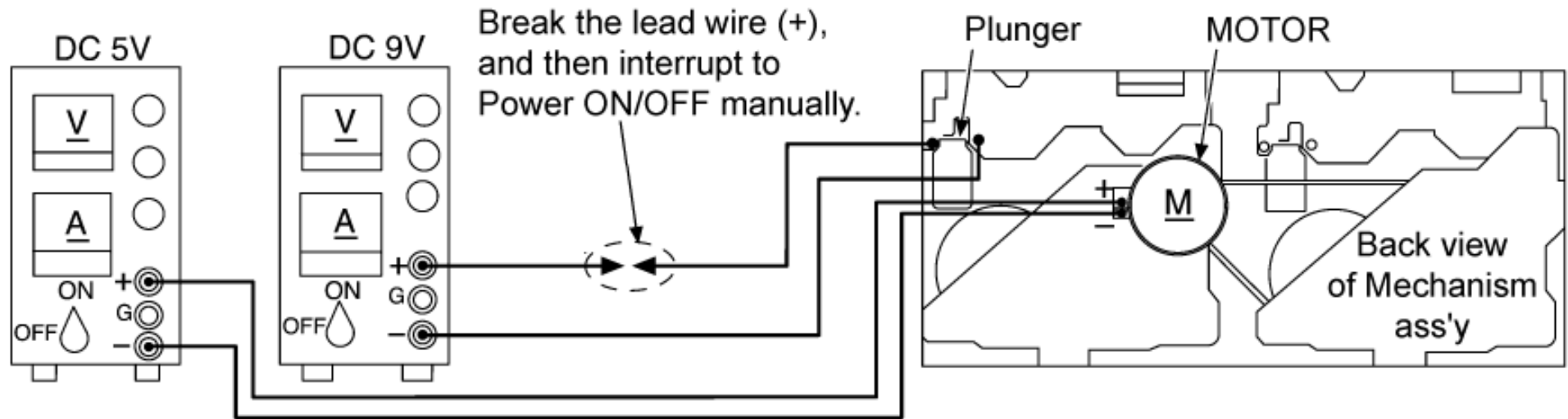
[14.1.1 Connection Diagram Between the Mechanism Ass'y and Power Supply\(MOTOR and Plunger\)](#)

[14.1.2 Detail View of EJECT Lever \(EJECT lever fixed by rubber band, Plunger rib operation\)](#)

14.1.1 Connection Diagram Between the Mechanism Ass'y and Power Supply/(MOTOR and Plunger)

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Fig. 14-1.



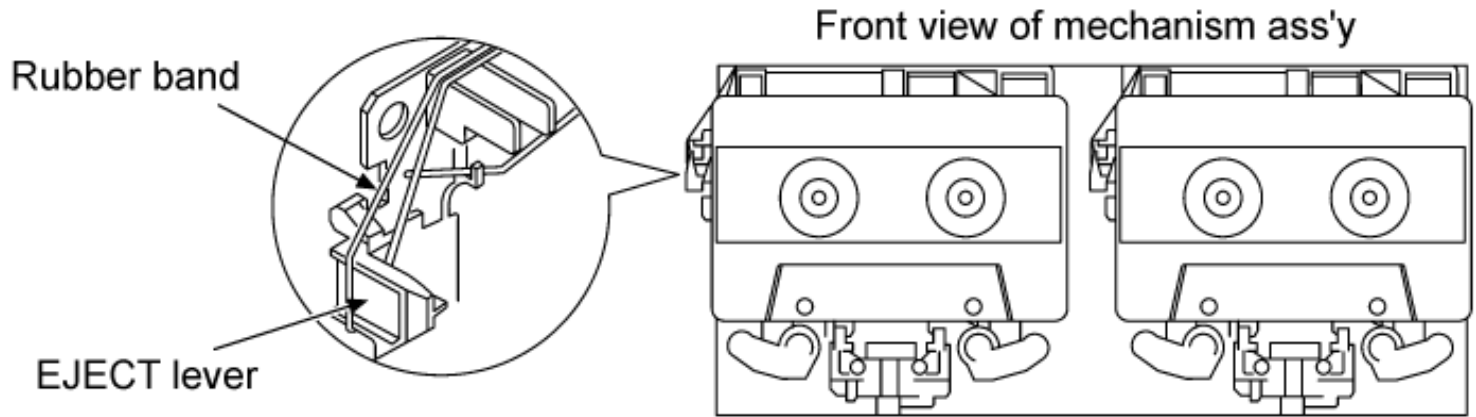
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14.1.2 Detail View of EJECT Lever /(EJECT lever fixed by rubber band, Plunger rib operation)

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Fig. 14-2.



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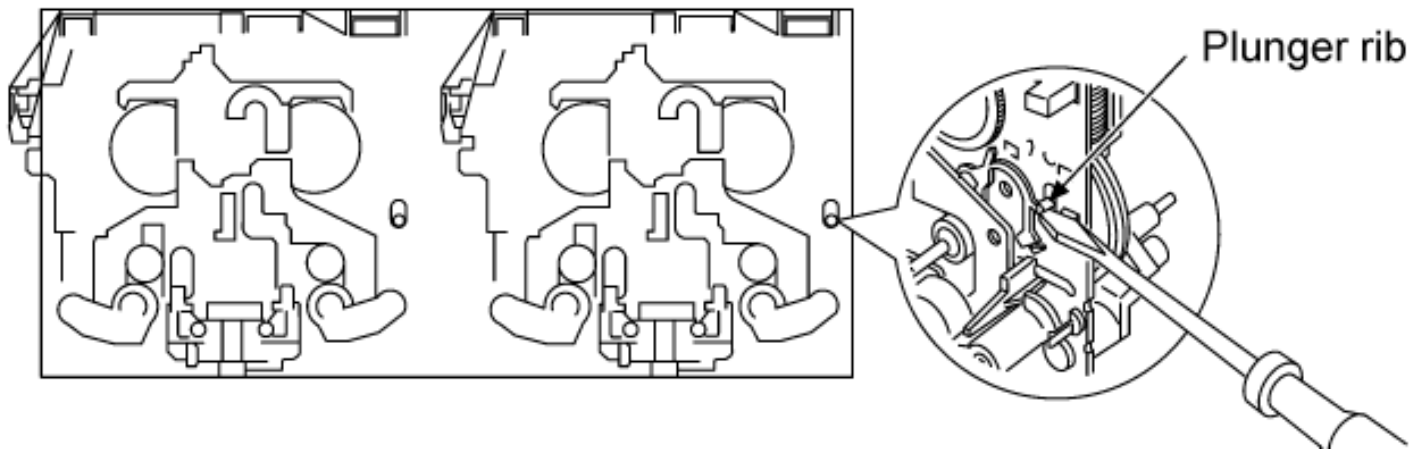
14.2 Operation Check Not Provided with Cassette Tape

[TOP](#) [PREVIOUS](#) [NEXT](#)

1. Push up the EJECT lever with rubber band. (Refer to [Fig. 14-2.](#))
2. Apply DC 5V to the MOTOR. (MOTOR will be rotated)
3. Lift up the plunger rib of mechanism ass'y with the tip of minus screwdriver, and then operate it same as power supply duration. (Refer to [Fig. 14-3.](#))

Note: Operation order is same as the “Operation Check Providing with Cassette Tape” item 4. above.

Fig. 14-3.



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15 Replacement Parts List

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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 manufacture's specified parts shown in the parts list.


- The marking [RTL] indicates that 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 dependent 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.
- All parts are supplied by MESA.


Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0392-1S	CABINET	1	
2	RHD30007-1S	SCREW	4	
3	XTBS3+10JFZ1	SCREW	2	
5	RKA0105-K	RUBBER	4	
6	RKA0106-N	FOOT RING	4	
7	RMN0539	CONNECTOR HOLDER	1	
8	RDG0129-1	GEAR	2	
9	REX0966	WIRE ASS'Y	1	
10	RGB0025-A	TECHNICS BADGE	1	
11	RGK1131-A	ORNAMENT(L)	1	
12	RGK1132-A	ORNAMENT(R)	1	

<u>13</u>	RGL0441-Q	PANEL LIGHT	1	
<u>14</u>	RJR0113-1	CONNECTOR	2	K1MR04Z00002
<u>15</u>	RKF0462-K2	CASSETTE HOLDER(L)	1	
<u>16</u>	RKF0463-K2	CASSETTE HOLDER(R)	1	
<u>17</u>	RKF0587D-1S	CASSETTE LID(L)	1	
<u>18</u>	RKF0588-1S	CASSETTE LID(R)	1	
<u>19</u>	RKW0577-Q	CASSETTE WINDOW(L)	1	
<u>20</u>	RKW0578-Q	CASSETTE WINDOW(R)	1	
<u>21</u>	RMB0474	SPRING	2	
<u>22</u>	RMQ0577A-3	FRAME	1	
<u>23</u>	RUS757ZA	SPRING	4	
<u>24</u>	RYP0913A-1S	FRONT PANEL	1	
25	XTBS26+10J	SCREW	7	
26	XTB3+10JFZ	SCREW	5	
27	XTBS3+8JFZ1	SCREW	3	
<u>28</u>	RMG0161	RUBBER	1	
<u>101</u>	RED0037	HEAD BLOCK ASS'Y/(R/P)	1	L1AA00000008
101-1	RHD17015	SCREW	2	
<u>102</u>	RED0038	HEAD BLOCK ASS'Y/(P.B)	1	
102-1	RHD17015	SCREW	2	
<u>103</u>	RDG0300	REEL TABLE BASE	4	
<u>104</u>	RDG0301	GEAR	2	
<u>105</u>	RDK0026	GEAR	2	
<u>107</u>	RDV0033-4	BELT 1	2	
<u>108</u>	RDV0034-1	BELT 2	2	
<u>110</u>	RUW147ZA	SPRING	2	
<u>111</u>	RMB0400	SPRING	4	
<u>112</u>	RMB0403	SPRING	2	
<u>113</u>	RMB0404	SPRING	2	
<u>114</u>	RMB0406	SPRING	2	
<u>115</u>	RMB0408	SPRING	2	
<u>116</u>	RML0370-J	LEVER	2	
<u>117</u>	RML0371	LEVER	2	





118	RML0372	LEVER	2	
119	RML0374	LEVER	2	
120	RMM0131	ROD	2	
121	RMM0133-1	ROD	2	
122	RMQ0519	REEL CAP	4	
123	RMS0398-1	SHAFT	2	
124	RSJ0003	PLUNGER ASS'Y	2	
125	RUS609ZC	SPRING	2	
126	RXF0049	FLY WHEEL ASS'Y	2	
127	RXF0050	FLY WHEEL ASS'Y	2	
128	RXG0040	GEAR	4	
129	RMK0283A-J	SUB CHASSIS	2	
130	RXL0124	PINCH ROLLER ASS'Y	2	
130-1	RMB0401	SPRING	2	
131	RXL0125	PINCH ROLLER ASS'Y	2	
131-1	RMB0402	SPRING	2	
132	RXL0126	ARM GEAR	2	
133	RXQ0412	CHASSIS ASS'Y	2	
133-1	RMB0405	SPRING	2	
133-2	RMM0132-J	FR ROD	2	
134	REM0055-1	MOTOR ASS'Y	2	
135	RHD26022	SCREW	4	
136	XTW2+5L	SCREW	4	
137	XTW26+10S	SCREW	6	
138	XYC2+JF17	SCREW	2	
140	RFKJSCH770EK	MAIN CHASSIS ASS'Y	1	
1001	RAA4202	CASSETTE MECHANISM/(AR2)	1	
C101-04	ECUV1H681KBN	50V 680P	4	
C109,10	ECQB1H183JF3	50V 0.018U	2	
C111,12	ECEA0JKS470	6.3V 47U	2	
C113,14	ECEA1HKS2R2	50V 2.2U	2	
C115,16	ECUV1H471KBN	50V 470P	2	
C117,18	ECUV1H331KBN	50V 330P	2	ECUT1H331KBN

C119,20	ECEA1HKS010	50V 1U	2	
C123,24	ECEA1EKS4R7	25V 4.7U	2	
C125,26	ECUV1H332KBN	50V 3300P	2	
C129	ECEA1AKS220	10V 22U	1	
C130	F2A1C101A133	16V 100U	1	
C131-34	ECUV1H471KBN	50V 470P	4	
C135	ECA1HAK010XI	50V 1U	1	ECA1HAK010XB
C136	ECEA1HKS010	50V 1U	1	
C137	ECEA1HKS0R1	50V 0.1U	1	
C138	ECUV1E473KBN	25V 0.047U	1	
C139	ECEA0JKS470	6.3V 47U	1	
C140	ECEA1CKS100	16V 10U	1	
C141	ECEA1HKS010	50V 1U	1	
C142	ECUVNE104ZFN	25V 0.1U	1	F1J1E1040017
C143,44	ECUV1H471KBN	50V 470P	2	
C150	RCE1AKA101BG	10V 100U	1	F2A1A1010020
C203,04	ECEA1EKS4R7	25V 4.7U	2	
C205,06	ECEA1HKS010	50V 1U	2	
C207,08	ECUV1H271KBN	50V 270P	2	F1J1H271A591
C211,12	ECUV1H152KBN	50V 1500P	2	
C213,14	ECEA1EKS4R7	25V 4.7U	2	
C215,16	ECEA1CKS100	16V 10U	2	
C217,18	ECEA1HKS0R1	50V 0.1U	2	
C219	F2A1C101A133	16V 100U	1	
C220	RCE1ARS471BJ	10V 470U	1	
C221,22	ECEA1HKAR68B	50V 0.68U	2	
C223	ECEA1EKS4R7	25V 4.7U	1	
C225,26	ECEA1EKS4R7	25V 4.7U	2	
C239,40	ECUV1H681KBN	50V 680P	2	
C241	ECUV1H103KBN	50V 0.01U	1	
C301	ECA1CM471	16V 470U	1	
C302	ECEA2AN2R2S	100V 2.2U	1	
C303	ECQP2E682JZT	250V 6800P	1	F0A2E682A002
C304	F2A1C101A133	16V 100U	1	
C305	ECEA1HKS0R1	50V 0.1U	1	
C306	ECQB1H393JF3	50V 0.039U	1	

C307	ECUV1H102KBN	50V 1000P	1	
C308	ECUV1H332KBN	50V 3300P	1	
C309	ECEA0JKS470	6.3V 47U	1	
C310,11	ECUV1H103KBN	50V 0.01U	2	
C323	ECUV1H102KBN	50V 1000P	1	
C602	ECA1CM221	16V 220U	1	
C603	RCE1CKA470BG	16V 47U	1	F2A1C470A017
C604	ECUV1E103ZFN	25V 0.01U	1	F1J1E103A007
C605	ECA1CM221	16V 220U	1	
C701	ECUV1H103KBN	50V 0.01U	1	
C702	ECEA0JKS101	6.3V 100U	1	
C705	ECUV1E103ZFN	25V 0.01U	1	F1J1E103A007
C706	RCE1HKA3R3BG	50V 3.3U	1	F2A1H3R3A015
C707	ECUV1E103ZFN	25V 0.01U	1	F1J1E103A007
CN601	RJS2A5520-1	CONNECTOR(20P)	1	K1MP20A00005
CN901	RJS8T6ZA	CONNECTOR(8P)	1	K1MP08B00006
CP101,02	RJS1A6805	CONNECTOR(5P)	2	
CP901,02	RJT071K09A	CONNECTOR(9P)	2	K1KA09B00058
CS951	RJU071H09M	CONNECTOR(9P)	1	
CS971	RJU071H09M	CONNECTOR(9P)	1	
D101,02	MA111TX	DIODE	2	MA2J11100L
D301	MA111TX	DIODE	1	MA2J11100L
D606	MA4056M	DIODE	1	MAZ40560M/ 
D651,52	MA165	DIODE	2	MA2C165
D701	MA111TX	DIODE	1	MA2J11100L
D705,06	MA111TX	DIODE	2	MA2J11100L
D707	MA4051M	DIODE	1	MAZ40510M
D708-10	MA111TX	DIODE	3	MA2J11100L
D904	MA111TX	DIODE	1	MA2J11100L
D905	SML79455C	LED	1	
D907	SML79455C	LED	1	
D951	MA165	DIODE	1	MA2C165

D971	MA165	DIODE	1	MA2C165
IC101	CXA1998BQT6	IC	1	C1BB00000319
IC102	MC14066BFEL	IC	1	C0JBAR000248
IC103	BA7755AF	IC	1	
IC201	CXA1552M-T4	IC	1	C1BB00000311
IC202	MC14066BFEL	IC	1	C0JBAR000248
IC701	M38503M2406F	IC	1	C2BBDD000003
IC951	0N2180RLC1	IC	1	
IC971	0N2180RLC1	IC	1	
L201,02	ELELN103KA	COIL	2	
L301	RL08B006-K	COIL	1	G2A142C00002
L302	RLQZB101KT-D	COIL	1	G0C101K00017
L701	RLQA100JT1-Y	COIL	1	G0C100JA0019
L702	RLBN102V-Y	COIL	1	J0JBC0000041
PCB1	REP2827E-M	MAIN P.C.B.	1	[RTL]
PCB2	REPX0108A	PCB UNIT(P.B)	1	[RTL]
PCB3	REPX0108B	PCB UNIT(R/P)	1	[RTL]
Q101,02	2SJ164RTA	TRANSISTOR	2	2SJ01640RA
Q103,04	2SJ164QTA	TRANSISTOR	2	2SJ01640QA
Q105,06	2SD1819ARTX	TRANSISTOR	2	2SD1819ARL
Q107	DTA143EUT106	TRANSISTOR	1	B1GDCFGG0008
Q108	DTC143EUT106	TRANSISTOR	1	B1GBCFGG0006
Q201,02	DTA143EUT106	TRANSISTOR	2	B1GDCFGG0008
Q301	2SD1819ARTX	TRANSISTOR	1	2SD1819ARL
Q302	2SD1328STXRA	TRANSISTOR	1	
Q303,04	2SD1450S	TRANSISTOR	2	2SD14500S
Q305,06	DTC144EUT106	TRANSISTOR	2	B1GBCFNN0013
Q602	2SC3327A	TRANSISTOR	1	
Q604	2SC3940AQSTA	TRANSISTOR	1	2SC3940ARA/ 
Q701-03	2SD1819ARTX	TRANSISTOR	3	2SD1819ARL
Q706	DTC114EUT106	TRANSISTOR	1	B1GBCFJJ0009
Q803,04	2SD592AR	TRANSISTOR	2	2SD0592AR

Q805,06	DTA143EUT106	TRANSISTOR	2	B1GDCFGG0008
Q807,08	2SB621A-R	TRANSISTOR	2	2SB0621AH
Q809,10	DTC143EUT106	TRANSISTOR	2	B1GBCFGG0006
Q901	DTA143EUT106	TRANSISTOR	1	B1GDCFGG0008
Q902-04	DTC143EUT106	TRANSISTOR	3	B1GBCFGG0006
R101,02	ERJ6GEYJ562V	1/10W 5.6K	2	
R103,04	ERJ6GEYJ104V	1/10W 100K	2	
R105,06	ERJ6GEYJ334V	1/10W 330K	2	
R107,08	ERJ6GEYJ103V	1/10W 10K	2	
R109,10	ERJ6GEYJ102V	1/10W 1K	2	
R111	ERJ6GEYJ820V	1/10W 82	1	
R112	ERJ8GEYJ820V	1/8W 82	1	
R113	ERJ6GEYJ123V	1/10W 12K	1	
R114	ERJ6GEYJ273V	1/10W 27K	1	
R117	ERJ6GEYJ102V	1/10W 1K	1	
R118,19	ERDS2FJ220	1/4W 22	2	
R120	ERJ6GEYJ104V	1/10W 100K	1	
R121,22	ERJ6GEYJ103V	1/10W 10K	2	
R125	ERJ6GEYJ104V	1/10W 100K	1	
R126	ERJ6GEYJ223V	1/10W 22K	1	
R127	ERJ6GEYJ472V	1/10W 4.7K	1	
R130	ERJ6GEYJ475V	1/10W 4.7M	1	
R131	ERJ6GEYJ334V	1/10W 330K	1	
R132	ERJ6GEYJ273V	1/10W 27K	1	
R133	ERJ6GEYJ333V	1/10W 33K	1	
R134	ERJ6GEYJ392V	1/10W 3.9K	1	
R135	ERJ6GEYJ682V	1/10W 6.8K	1	
R136,37	ERJ6GEYJ222V	1/10W 2.2K	2	
R138	ERJ6GEYJ472V	1/10W 4.7K	1	
R139,40	ERJ6GEYJ473V	1/10W 47K	2	
R141	ERJ8GEYJ101V	1/8W 100	1	
R142	ERJ6GEYJ101V	1/10W 100	1	
R143	ERDS2FJ101	1/4W 100	1	
R144	ERJ6GEYJ101V	1/10W 100	1	
R147-50	ERJ6GEYJ562V	1/10W 5.6K	4	

R151,52	ERJ6GEYJ104V	1/10W 100K	2	
R153,54	ERJ6GEYJ272V	1/10W 2.7K	2	
R157,58	ERJ6GEYJ223V	1/10W 22K	2	
R207,08	ERJ6GEYJ473V	1/10W 47K	2	
R209,10	ERJ6GEYJ102V	1/10W 1K	2	
R211,12	ERJ6GEYJ103V	1/10W 10K	2	
R213,14	ERJ6GEYJ302V	1/10W 3K	2	
R215,16	ERJ6GEYJ123V	1/10W 12K	2	
R217,18	ERJ6GEYJ222V	1/10W 2.2K	2	
R219	ERJ6GEYJ183V	1/10W 18K	1	
R220	ERDS2FJ220	1/4W 22	1	
R221,22	ERJ6GEYJ101V	1/10W 100	2	
R223,24	ERJ6GEYJ103V	1/10W 10K	2	
R225,26	ERJ6GEYJ473V	1/10W 47K	2	
R230,31	ERJ6GEYJ102V	1/10W 1K	2	
R232	ERJ6GEYJ103V	1/10W 10K	1	
R233,34	ERJ6GEYJ101V	1/10W 100	2	
R237	ERDS2FJ220	1/4W 22	1	
R301	ERJ6GEYJ103V	1/10W 10K	1	
R302	ERJ6GEYJ182V	1/10W 1.8K	1	
R303	ERJ6GEYJ222V	1/10W 2.2K	1	
R304	ERJ6GEYJ153V	1/10W 15K	1	
R305	ERJ6GEYJ183V	1/10W 18K	1	
R306	ERJ6GEYJ333V	1/10W 33K	1	
R307	ERDS1FJ2R2	2.2	1	
R308	ERJ6GEYJ102V	1/10W 1K	1	
R309-11	ERJ6GEYJ472V	1/10W 4.7K	3	
R313	ERDS2FJ1R0	1/4W 1	1	
R602	ERQ16NKWR33E	0.33	1	
R603	ERD2FCG100	10	1	
R604	ERJ6GEYJ331V	1/10W 330	1	
R606	ERJ6GEYJ152V	1/10W 1.5K	1	
R609	ERDS2FJ101	1/4W 100	1	
R630	ERQ16NKWR33E	0.33	1	
R632	ERDS2FJ473	1/4W 47K	1	

R701,02	ERJ6GEYJ103V	1/10W 10K	2	
R703	ERJ6GEYJ562V	1/10W 5.6K	1	
R704	ERJ6GEYJ472V	1/10W 4.7K	1	
R705	ERJ6GEYJ473V	1/10W 47K	1	
R708	ERJ6GEYJ472V	1/10W 4.7K	1	
R710	ERJ6GEYJ102V	1/10W 1K	1	
R711	ERJ6GEYJ104V	1/10W 100K	1	
R712	ERJ8GEYJ683V	1/8W 68K	1	
R718	ERJ8GEYJ683V	1/8W 68K	1	
R721	ERJ6GEYJ472V	1/10W 4.7K	1	
R722	ERJ6GEYJ101V	1/10W 100	1	
R723,24	ERJ6GEYJ102V	1/10W 1K	2	
R725,26	ERJ6GEYJ222V	1/10W 2.2K	2	
R727	ERJ6GEYJ472V	1/10W 4.7K	1	
R728	ERJ6GEYJ103V	1/10W 10K	1	
R729	ERJ6GEYJ472V	1/10W 4.7K	1	
R730	ERJ6GEYJ222V	1/10W 2.2K	1	
R732	ERJ6GEYJ104V	1/10W 100K	1	
R735	ERJ6GEYJ472V	1/10W 4.7K	1	
R736	ERJ6GEYJ103V	1/10W 10K	1	
R737	ERJ8GEYJ103V	1/8W 10K	1	
R738	ERJ6GEYJ102V	1/10W 1K	1	
R741	ERJ6GEYJ223V	1/10W 22K	1	
R743	ERJ6GEYJ473V	1/10W 47K	1	
R744	ERJ6GEYJ102V	1/10W 1K	1	
R745	ERJ6GEYJ101V	1/10W 100	1	
R747	ERJ8GEYJ102V	1/8W 1K	1	
R802	ERJ6GEYJ561V	1/10W 560	1	
R803	ERJ6GEYJ103V	1/10W 10K	1	
R805	ERJ6GEYJ392V	1/10W 3.9K	1	
R806	ERJ6GEYJ103V	1/10W 10K	1	
R808	ERJ6GEYJ392V	1/10W 3.9K	1	
R810,11	ERJ6GEYJ103V	1/10W 10K	2	
R812	ERJ6GEYJ561V	1/10W 560	1	
R813,14	ERJ6GEYJ471V	1/10W 470	2	
R818	ERDS2FJ2R2	1/4W 2.2	1	

R820	ERDS2FJ2R2	1/4W 2.2	1	
R823,24	ERJ6GEYJ561V	1/10W 560	2	
R900	ERJ6GEYJ821V	1/10W 820	1	
R901	ERJ6GEYJ102V	1/10W 1K	1	
R902	ERJ6GEYJ122V	1/10W 1.2K	1	
R903	ERJ6GEYJ152V	1/10W 1.5K	1	
R904	ERJ6GEYJ182V	1/10W 1.8K	1	
R905	ERJ6GEYJ222V	1/10W 2.2K	1	
R906	ERJ6GEYJ332V	1/10W 3.3K	1	
R908	ERJ6GEYJ122V	1/10W 1.2K	1	
R909	ERJ6GEYJ152V	1/10W 1.5K	1	
R910	ERJ6GEYJ182V	1/10W 1.8K	1	
R911	ERJ6GEYJ222V	1/10W 2.2K	1	
R914	ERJ6GEYJ331V	1/10W 330	1	
R915	ERJ6GEYJ681V	1/10W 680	1	
R916	ERJ6GEYJ331V	1/10W 330	1	
R917	ERJ6GEYJ681V	1/10W 680	1	
R924	ERJ6GEYJ821V	1/10W 820	1	
R925	ERJ6GEYJ102V	1/10W 1K	1	
R952	ERDS2FJ821	1/4W 820	1	
R953	ERDS2FJ393	1/4W 39K	1	
R972	ERDS2FJ821	1/4W 820	1	
R973	ERDS2FJ393	1/4W 39K	1	
RJ504	ERJ6GEY0R00V	CHIP JUMPER	1	
RJ507-09	ERJ8GEY0R00V	CHIP JUMPER	3	
S900,01	EVQ11G05R	SW	2	
S903-07	EVQ11G05R	SW	5	
S909-15	EVQ11G05R	SW	7	
S951	RSH1A018-3U	SW	1	
S952,53	RSH1A019-2U	SW	2	
S971	RSH1A018-3U	SW	1	
S972-76	RSH1A019-2U	SW	5	
VR101-04	EVNDCAA03B24	VR,PLAYBACK GAIN /ADJ.	4	

VR801	EVNDCAA03B53	VR,TAPE SPEED ADJ.	1	
VR803	EVNDCAA03B53	VR,TAPE SPEED ADJ.	1	
X701	RSXY8M00D01T	OSCILLATOR	1	H2B800400005
Z971	EXBF7L355SYV	COMPONENT COMBINATION	1	

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