

Service Manual

Cassette Deck

RS-TR474

Supplement

Dolby NR-Equipped
Stereo Double Cassette Deck



Colour

(K)...Black Type

Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada.	
(E)	Europe.	
(EB)	Great Britain.	
(EG)	Germany and Italy.	

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Pg36 NO SOUND R 406/7 O/C
Pg38 RE
LOCATION, CAUSE: S/C C423/4

Please file and use this supplement manual together with the service manual for Model No. RS-TR474, Order No. AD9401007C5.

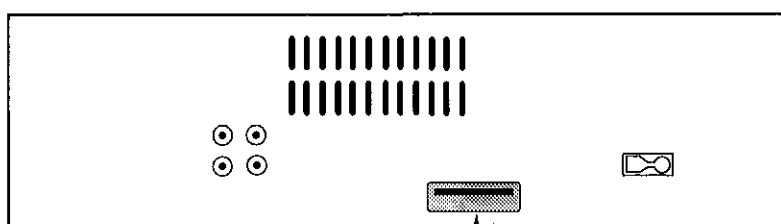
- Notes:**
- This supplement manual is intended to provide additional information or corrections to the existing service manual for model No. RS-TR474. Be sure to update your service manual for future reference.
 - Use this supplement for those sets with suffix "N" onward. (Refer to the following drawing.)

Serial Number



↑
Suffix "N" or later

(REAR PANEL)



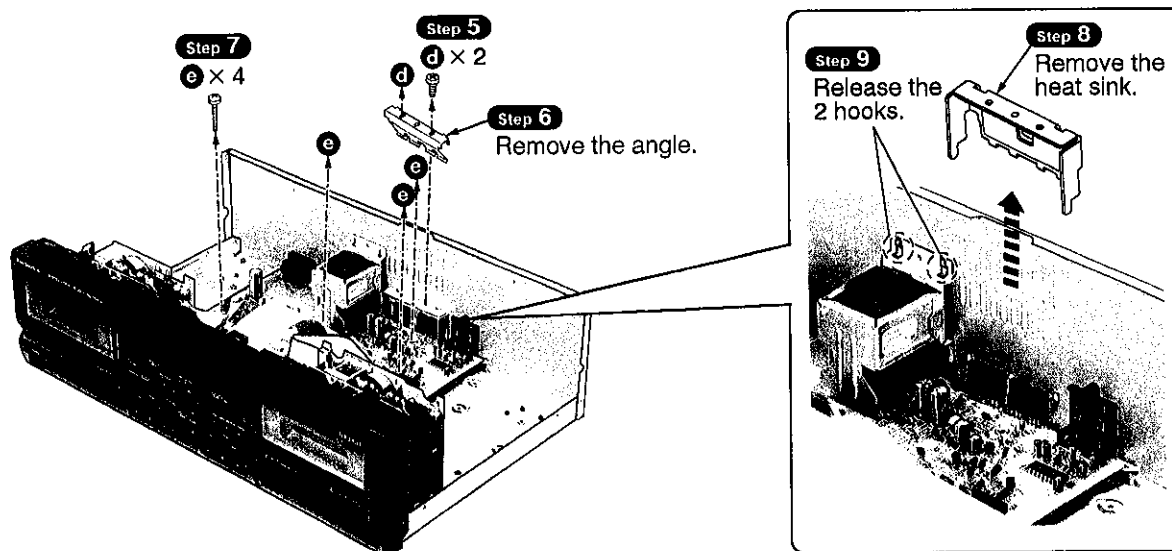
Serial Number
Sticking Position

⚠ 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®

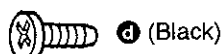
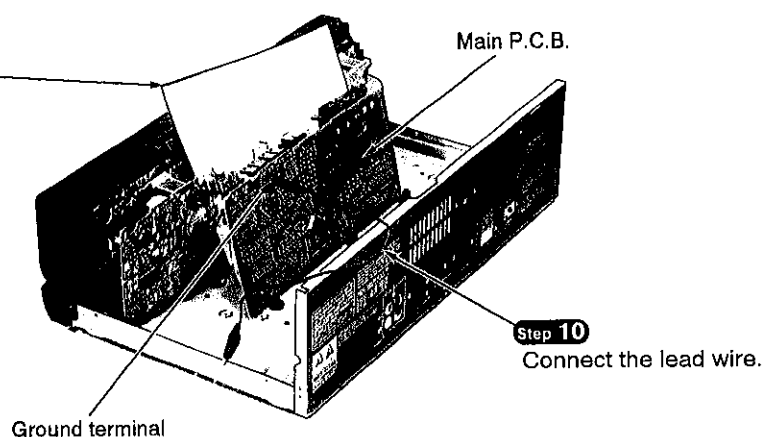
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• Check the main P.C.B. as shown below.

NOTE

Insulate main P.C.B. with insulation material to avoid short-circuit.



[XTBS3+8JFZ1]

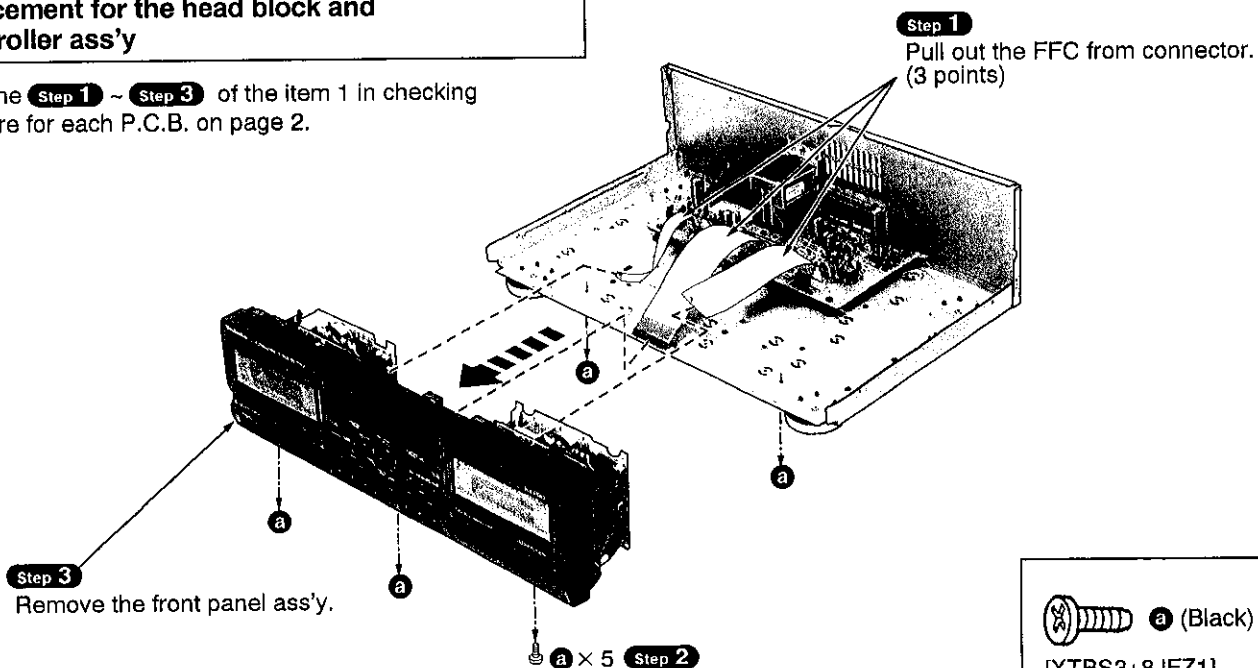


[XTB3+20JFZ]

■ Main Component Replacement Procedures

1. Replacement for the head block and pinch roller ass'y

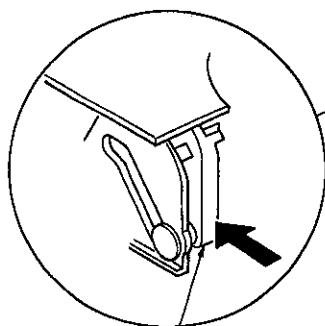
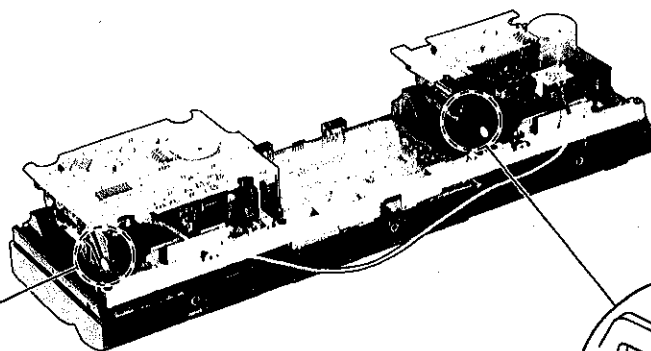
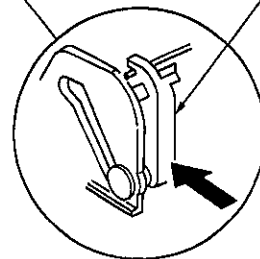
- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedure for each P.C.B. on page 2.



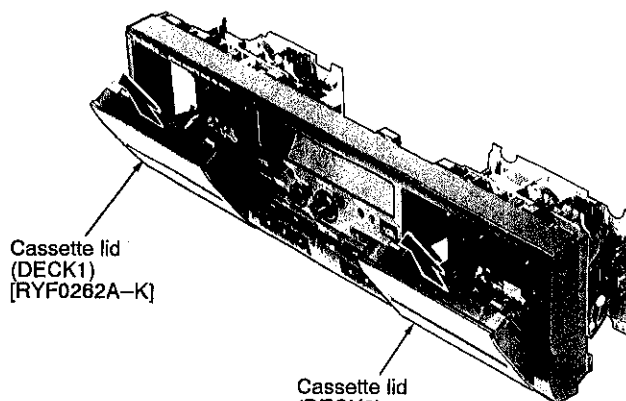
[XTBS3+8JFZ1]

Step 4

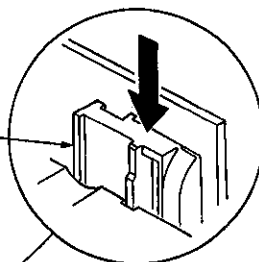
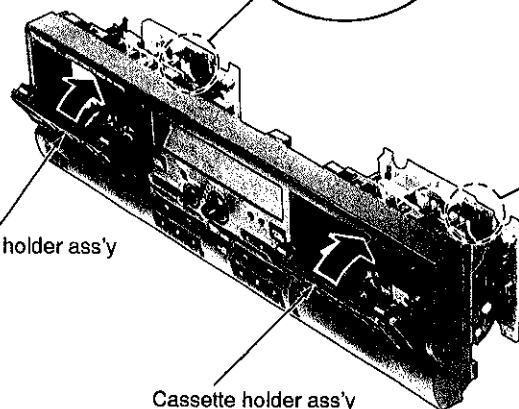
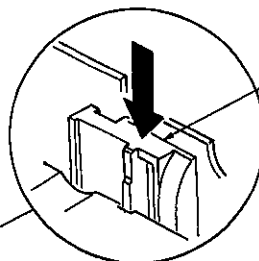
Press the drive lever.

Drive lever
(DECK2)Drive lever
(DECK1)**Step 5**

Remove the cassette lid in the direction of arrow.

Cassette lid
(DECK1)
[RYF0262A-K]Cassette lid
(DECK2)
[RYF0262B-K]**Step 6**

Press the drive rack, and then close the cassette holder ass'y.

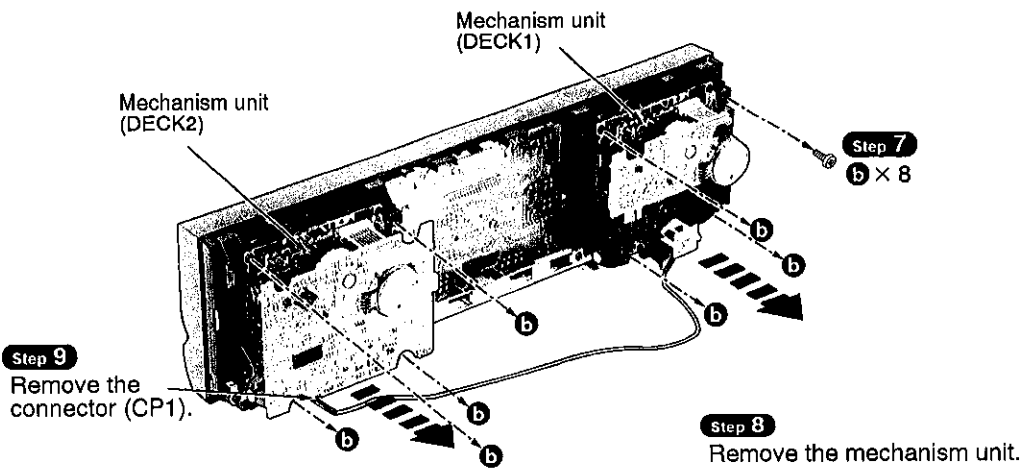
Drive rack
(DECK1)Cassette holder ass'y
(DECK1)Cassette holder ass'y
(DECK2)Drive rack
(DECK2)



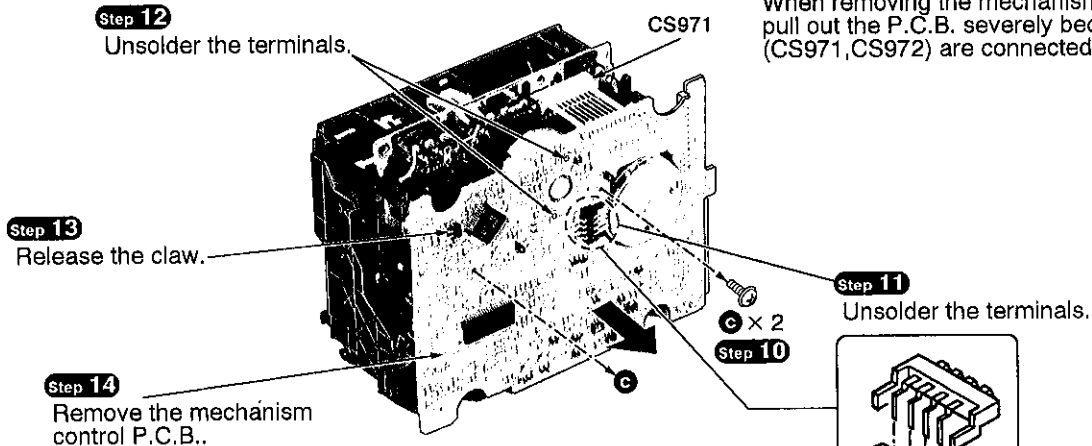
[XTB3+10JFZ]



[XTW2+6S]



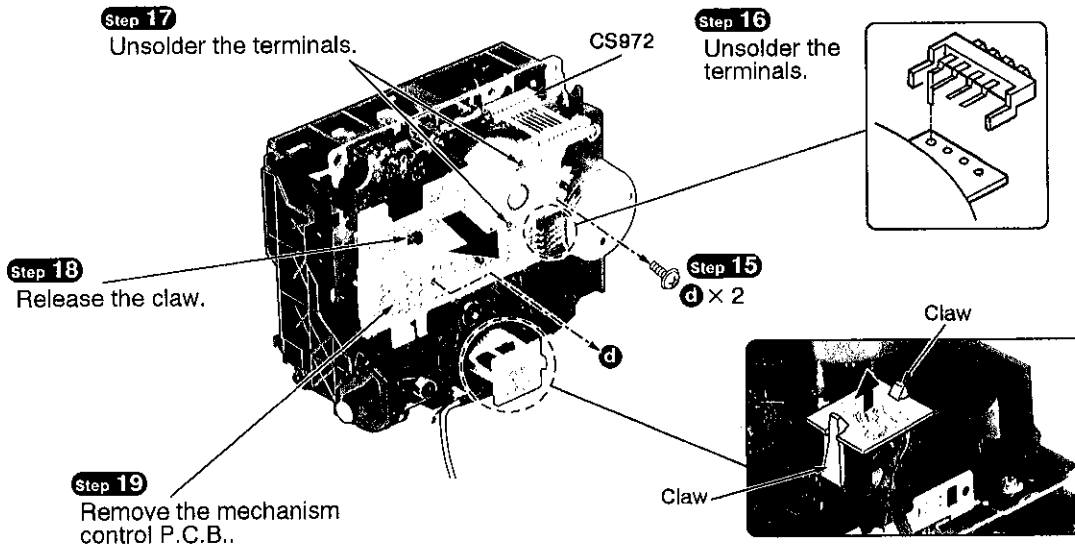
[Removal of the mechanism control P.C.B. (DECK2)]



NOTE

When removing the mechanism control P.C.B., pull out the P.C.B. severely because the connectors (CS971, CS972) are connected.

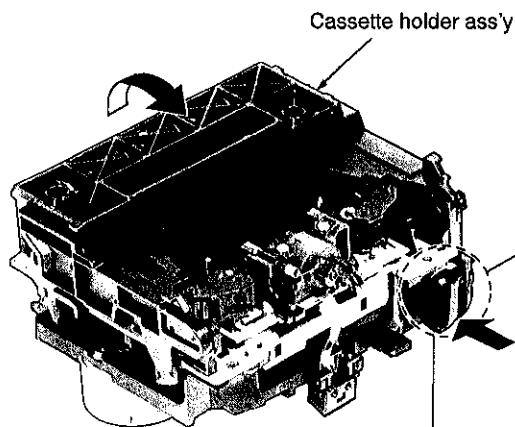
[Removal of the mechanism control P.C.B. (DECK1)]



NOTE

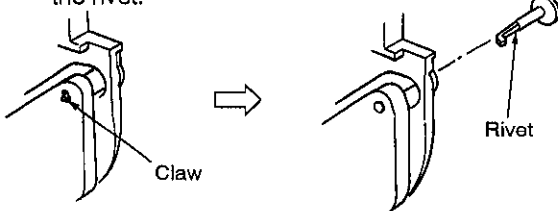
Handle the connector with care so that the shape of terminal is different from others.

Step 20
Release the 2 claws, and then remove the connector P.C.B..



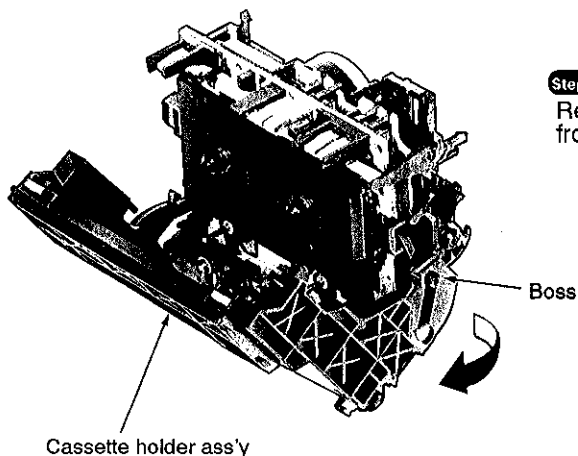
Step 21

Release the claw, and then remove the rivet.



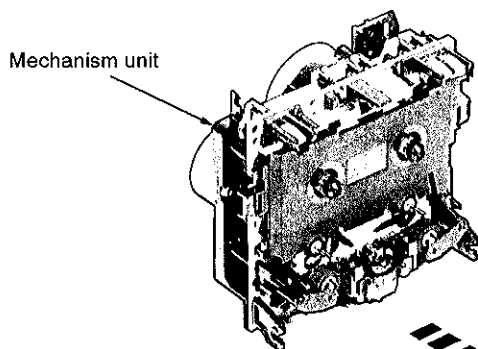
Step 22

Press the drive lever, and then open the cassette holder ass'y.



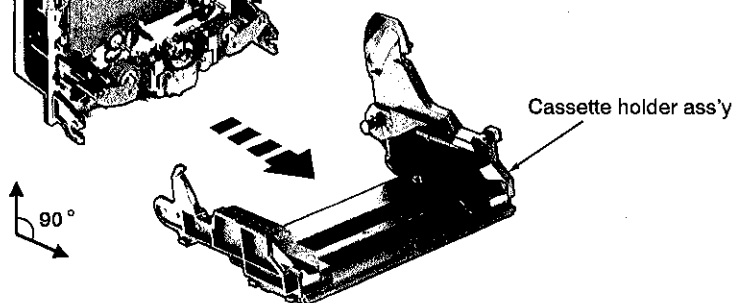
Step 23

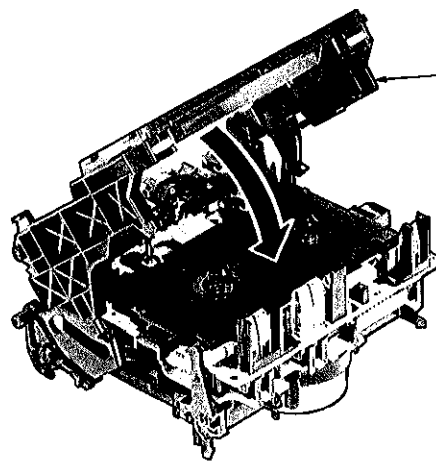
Remove the cassette holder ass'y from boss.



Step 24

Locate the cassette holder ass'y and mechanism unit at a 90 degree angle as shown bellow, and then pull the cassette holder ass'y.

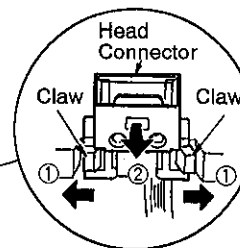
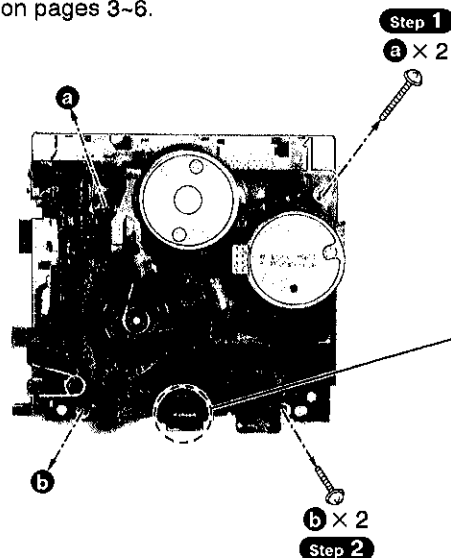


**Step 3**

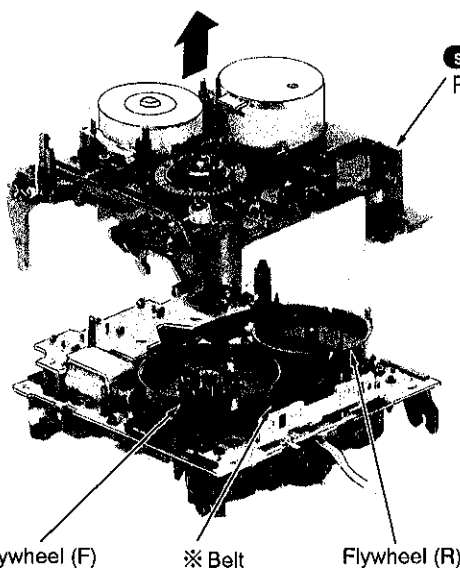
Close the cassette holder ass'y.

2. Replacement for the belt, reel motor unit and capstan motor unit

- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedure for each P.C.B. on page 2.
- Follow the **Step 1** ~ **Step 24** of the item 1 in main component replacement procedures on pages 3~6.

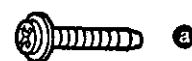
**Step 3**

Release the claws, and then remove the head connector.



※ Belt

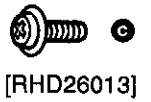
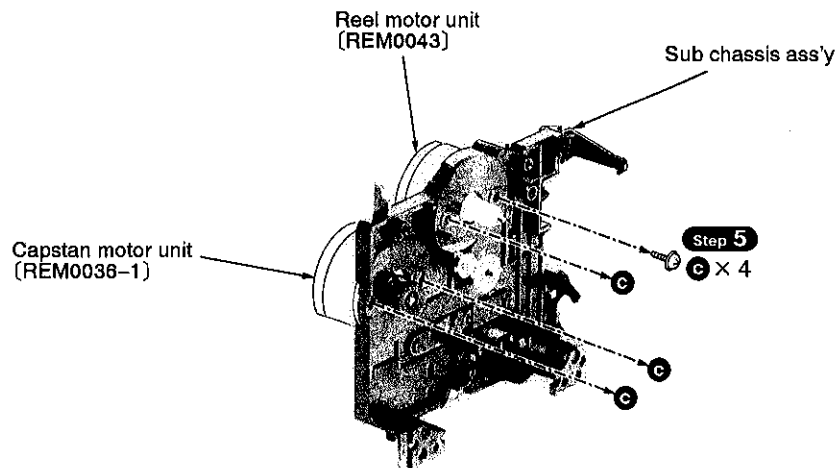
	Part No.
DECK1	RDV108ZA
DECK2 (P,PC)	RDV108ZA
DECK2 (E,EB,EG)	RDV0015



[XTW26+12S]



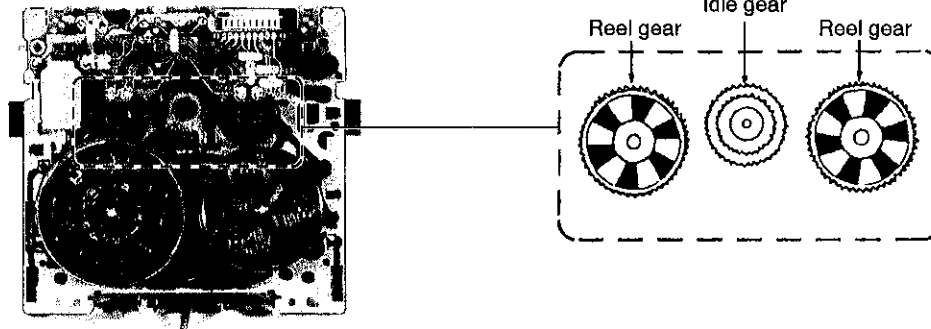
[XTW26+6L]



Installation of the sub chassis ass'y after replacement

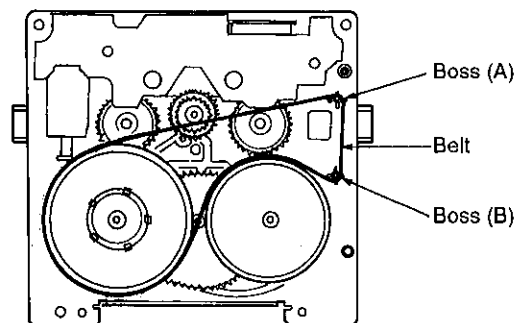
Step 1

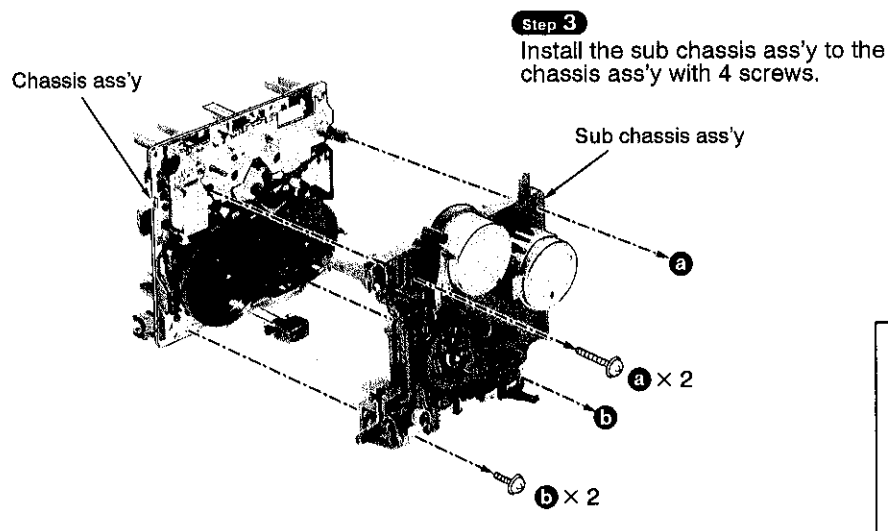
Place the idle gear in the center.



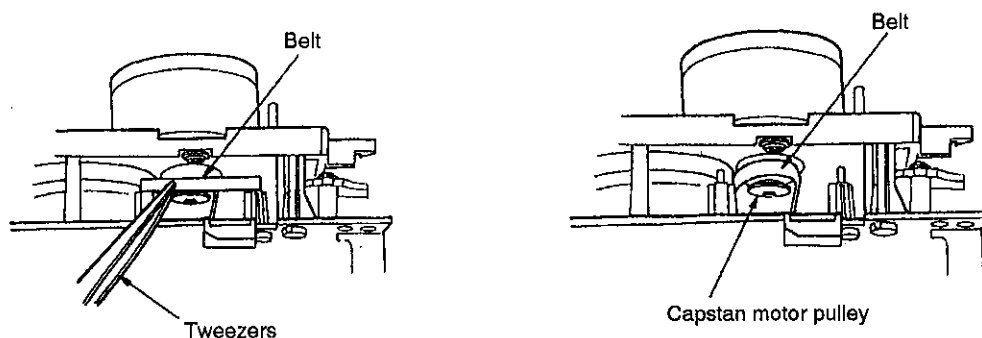
Step 2

Temporarily secure the belt.



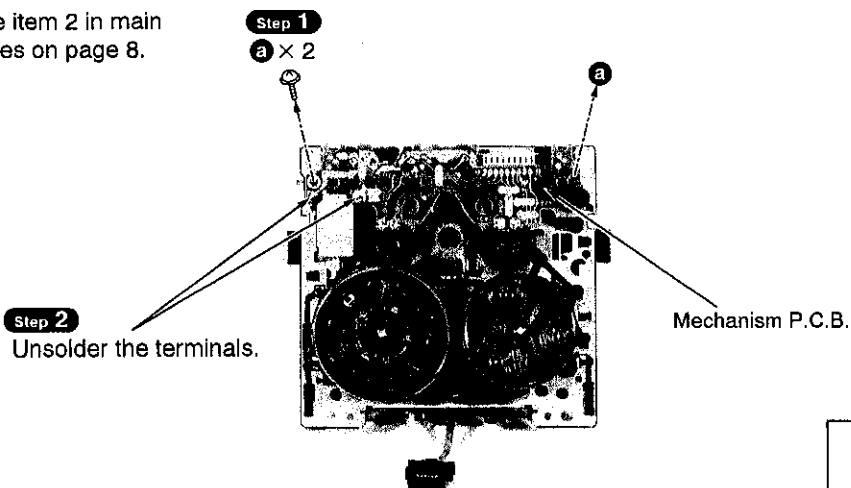


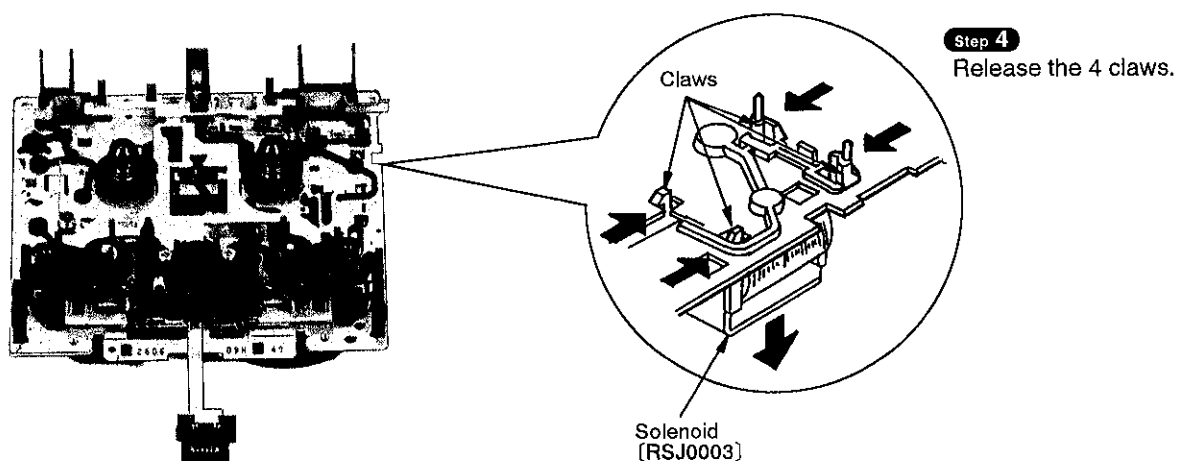
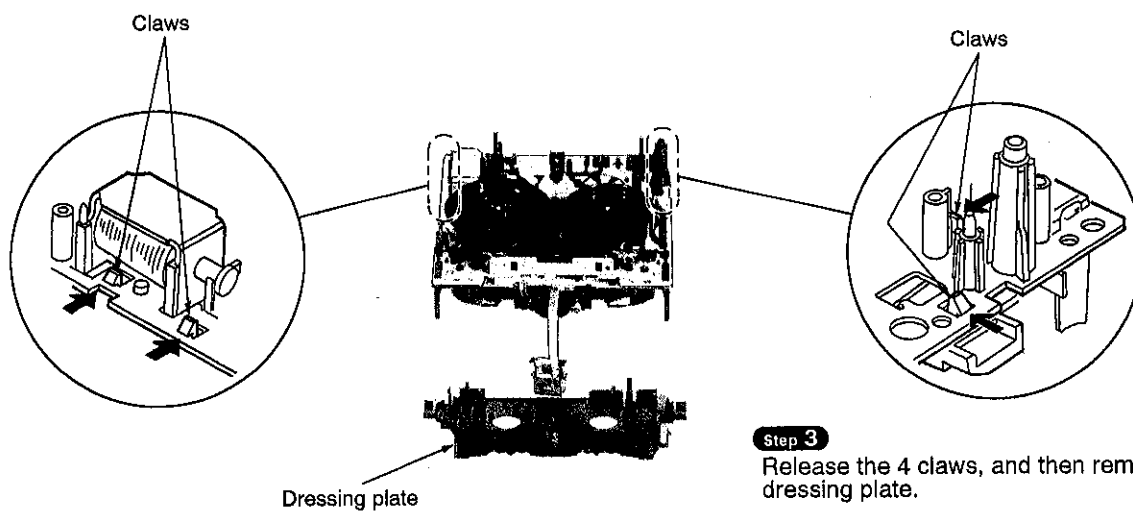
Step 4
Secure the belt with the capstan motor pulley.



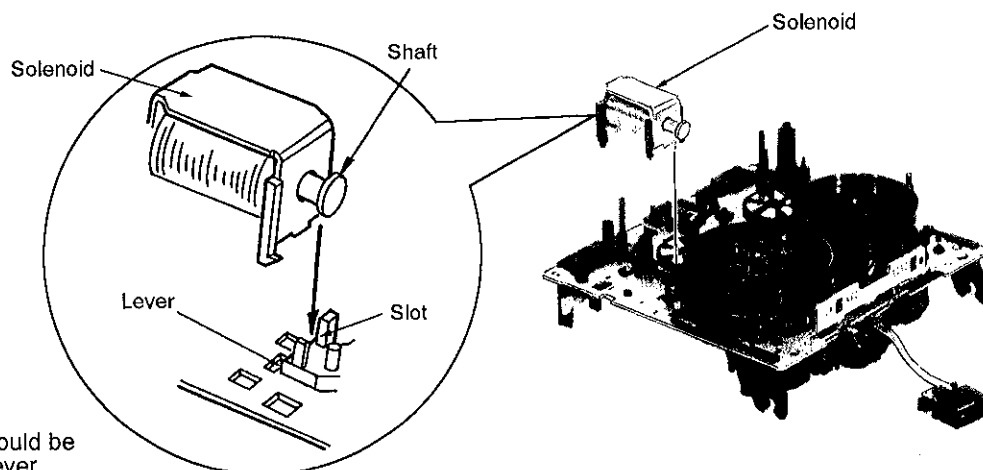
3. Replacement for the parts mounted on mechanism P.C.B. and solenoid

- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedure for each P.C.B. on page 2.
- Follow the **Step 1** ~ **Step 24** of the item 1 in main component replacement procedures on pages 3~6.
- Follow the **Step 1** ~ **Step 4** of the item 2 in main component replacement procedures on page 8.





Notice for installing the solenoid



NOTE

- The shaft of solenoid should be aligned with the slot of lever.

■ WRITING TO EEPROM

This unit is equipped with EEPROM memory that stores a variety of design data and performance data such as playback gain, bias value, recording gain, recording equalization, etc., which was programmed at the factory.

This EEPROM memory is capable of being read and written to more than 100,000 times. To illustrate this, if one ATC operation is performed every hour continuously every day for ten years, it would still be possible to successfully read and write with the EEPROM.

Data is actually written in this EEPROM only when ATC is actuated or when power supply is turned on or off. Since it hardly breaks down, there will scarcely occur such a trouble as to require replacement.

Measurement Condition

- Recording-level control; Maximum
- Recording-balance control; Center
- Reverse-mode selector switch; $\rightleftarrows$
- Tape-to-tape recording-speed switch; Off
- Dolby NR switch; Off
- ATC switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20\pm5^{\circ}\text{C}$ ($68\pm9^{\circ}\text{F}$)

Measurement Instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- AF oscillator
- ATT (Attenuator)
- Resistor (600Ω)

Note: Before adjustment, be sure to set the AF oscillator output level to 0dB(1kHz): 1V

Test Tape

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall gain adjustment and Overall frequency response
- Normal reference blank tape; QZZCRA
- CrO² reference blank tape; QZZCRX1
- Metal reference blank tape; QZZCRZ5

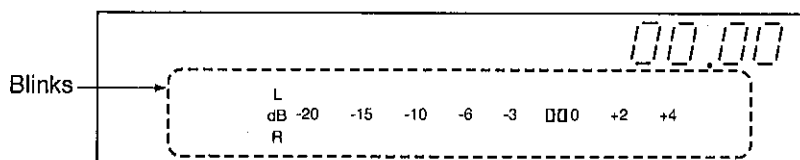
Note: Step 1 to step 7 only has to be done after exchange of the EEPROM.

Step 1 Short the Test Mode terminals with a shorting clip.

Step 2 While holding down the STOP button on DECK2, press the POWER switch to ON.

Step 3

All FL display segments except for the four-digit counter on DECK2 will start blinking to indicate that the deck has entered Write mode.
At this point the four-digit counter will indicate "00 * *".



A

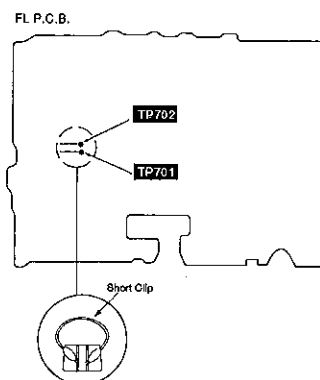


Fig. 1

Notes:

- The test mode terminals on FL P.C.B. should be shorted with a short clip as shown above figure.
- After the adjustment items disconnect the short clip.

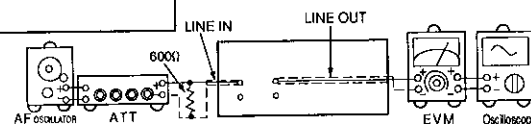
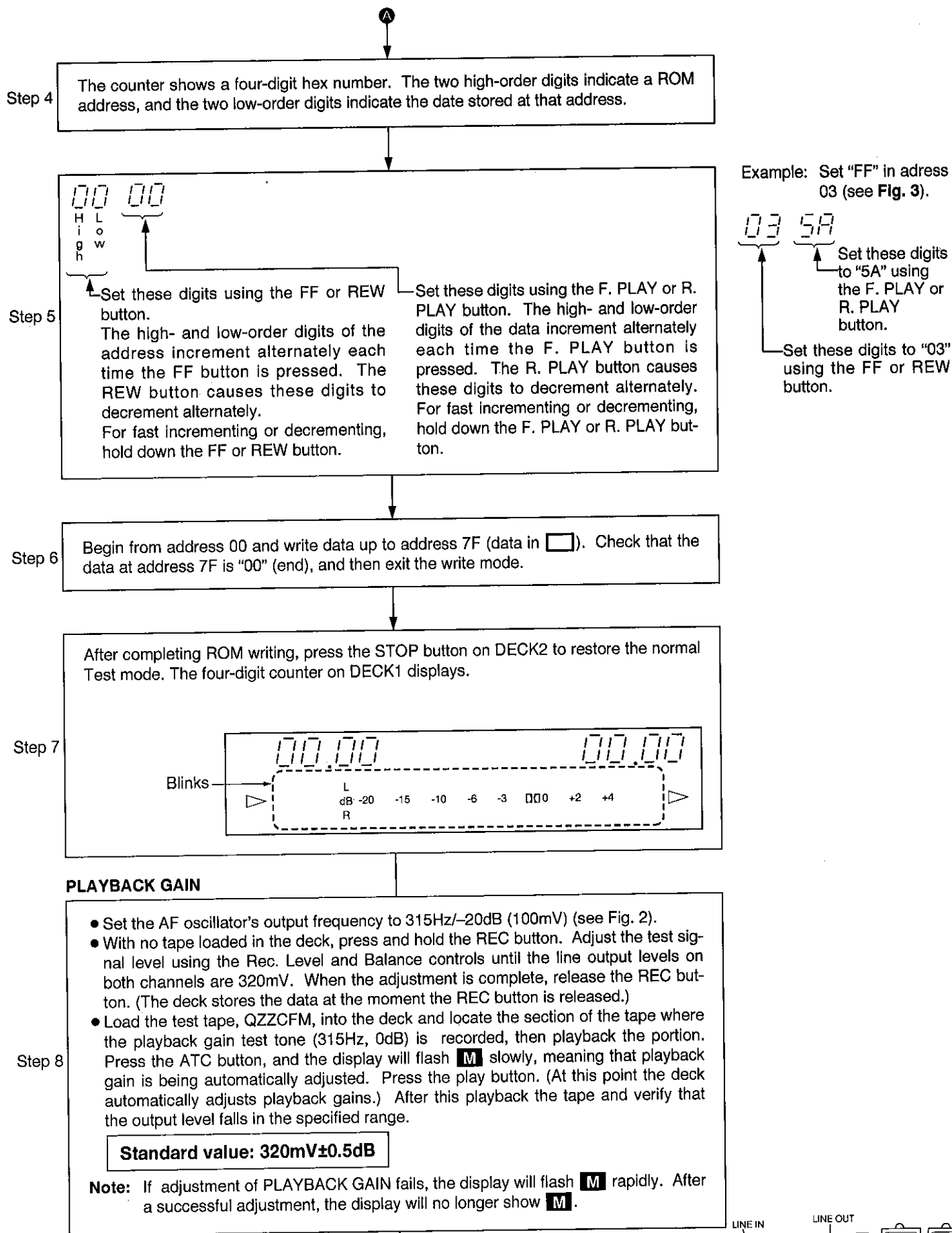


Fig. 2

INITIAL SETTING UP FOR OVERALL GAIN AND OVERALL FREQUENCY RESPONSE

B

Step 9

- Load a Normal blank test tape (QZZCRV2) into the deck under test. Press the ATC button, then the REC button. The display will flash **M** slowly. (At this point the deck automatically adjusts the overall gain and frequency response.)
 - After the above setting, the overall gain for selection of CrO2 and Metal tape will be automatically set by the ROM and stored in the ROM.
- Note:** If adjustment of OVERALL GAIN or OVERALL FREQUENCY RESPONSE fails, the display will flash **M** rapidly.
After a successful adjustment, the display will no longer show **M**.

Step 10

Remove the shorting clip from the Test Mode terminals. The FL display will stop blinking.

Note: If the microprocessor is replaced, it is not necessary to replace (or write data to) the EEPROM.

• EEPROM MAP

Low \ High	0	1	2	3	4	6	7	8
0	00	—	80	90	—	—	—	—
1	00	—	80	80	—	—	—	—
2	—	—	92	4D	—	—	—	—
3	5A	—	—	54	—	—	—	—
4	—	—	—	4A	—	3C	6C	70
5	—	—	—	63	—	28	50	60
6	—	—	—	—	—	00	00	00
7	—	EC	—	—	—	58	54	60
8	—	—	—	—	—	90	70	50
9	—	—	A0	A0	92	20	34	34
A	—	—	60	06	—	10	14	08
B	—	—	70	20	—	20	20	20
C	—	—	60	10	—	A0	B0	D0
D	—	—	8C	06	—	90	90	90
E	—	—	58	FB	—	7F	7F	08
F	—	—	65	F5	—	80	80	00

Fig. 3

Note: At an address with no data value indicated (e.g. 01 → —), the ROM operates normally irrespective of the kind of the data supplied.

MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Recording-level control; Maximum
- Recording-balance control; Center
- Reverse-mode selector switch; $\rightleftarrows$
- Tape-to-tape recording speed switch; Off
- Dolby NR switch; Off
- ATC switch; Off

- Make sure hands are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20\pm5^{\circ}\text{C}$ ($69\pm9^{\circ}\text{F}$)

Measuring instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

Note: Before adjustment, be sure to set the AF oscillator output level to 0dB (1kHz): 1V

Test Tape

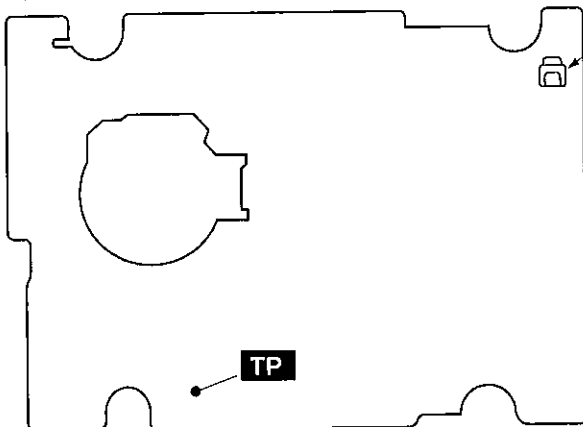
- Head azimuth adjustment (8kHz, -20dB)
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB)
- Playback gain adjustment (315Hz, 0dB)

; QZZCFM

- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Overall gain adjustment and Overall frequency response
Normal reference blank tape; QZZCRA
CrO₂ reference blank tape; QZZCRX1
Metal reference blank tape; QZZCRZ5

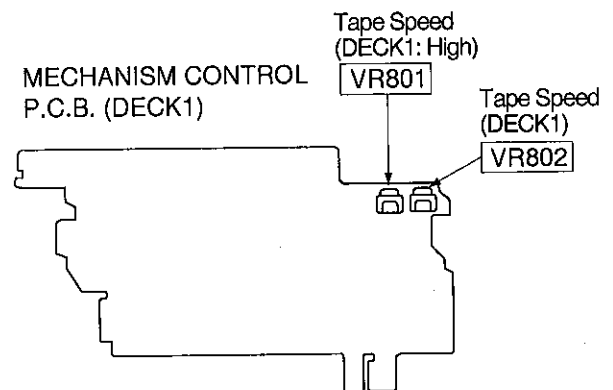
Adjustment Points

MECHANISM CONTROL P.C.B.
(DECK2)

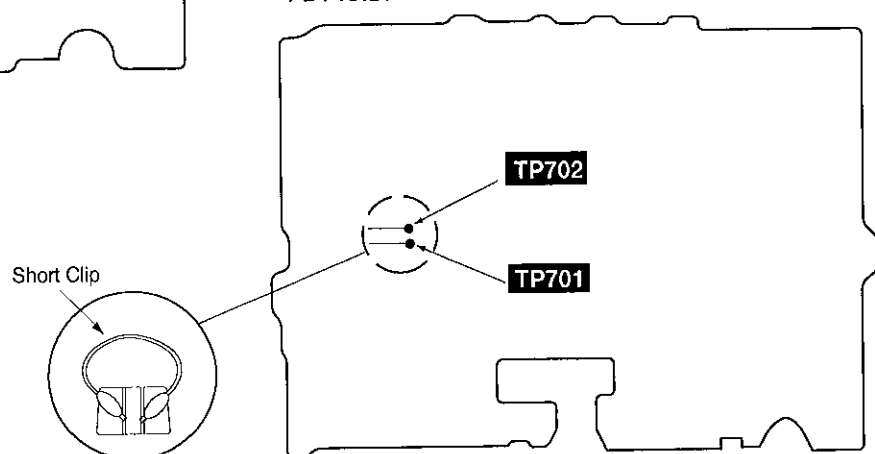


Tape Speed
(DECK2)
VR852

MECHANISM CONTROL
P.C.B. (DECK1)



FL P.C.B.

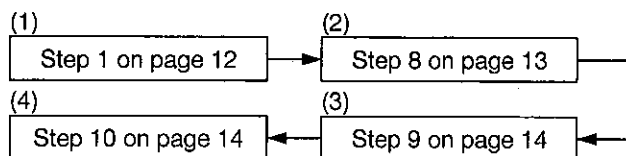


Notes:

- The test mode terminals on FL P.C.B. should be shorted with a short clip as shown above figure.
- After the adjustment items disconnect the short clip.

HEAD REPLACEMENT

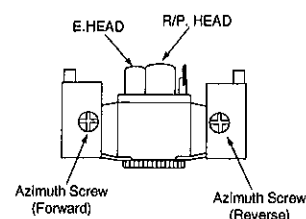
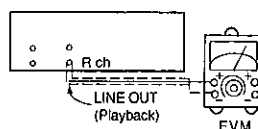
When replacing the R/P head or E head, adjust the head azimuth (erase head with small screw stop does not need adjustment) then start the EEPROM adjustment in the following sequence.



(The adjustment is necessary because the playback gain, the overall gain, and the overall frequency response are changed by the head replacement.)

HEAD AZIMUTH ADJUSTMENT (DECK 1/2)

1. Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the output of the R-CH are maximized.
2. Perform the same adjustment in the play mode.
3. Repeat the same check in reverse play mode.
4. After the adjustment, apply screwlock to the azimuth adjusting screw.



TAPE SPEED ADJUSTMENT (DECK 1/2)

Normal speed

1. Playback the middle portion of the test tape (QZZCWAT).
2. Short the test terminal.
3. Adjust Deck 1=VR802 and Deck 2=VR852 so that the output is within the standard value.

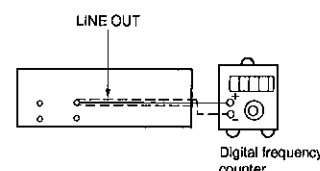
Standard value: 3000±15Hz (NORMAL speed)

High speed [Set the unit to forward (FWD) mode.]

4. Press the tape-to-tape recording-speed selector switch (x2) button. This will set the high speed mode.
5. Playback the middle portion on the test tape (QZZCWAT).
6. At that time, check if the output from DECK2 is within the standard value.

Standard value: 6000± 600Hz (HIGH speed)

7. Adjust VR801 so that the output frequency of DECK1 is within ±30Hz for the value of the output frequency of DECK2.
8. Release the test terminal.

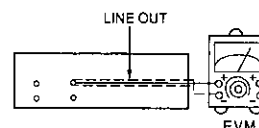
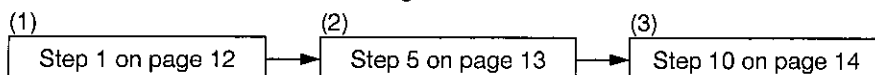


PLAYBACK GAIN MEASUREMENT (DECK 1/2)

1. Load the test tape (QZZCFM) into the deck and locate the part where the playback gain test tone (315Hz, 0dB) is recorded. After this, play back the tape and verify that the output level falls in the specified range.

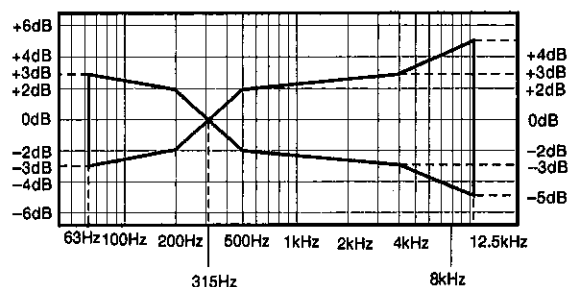
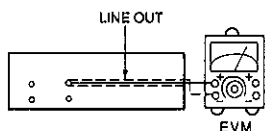
Standard value: 320mV± 0.5dB

2. If outside the standard value, data in EEPROM should be written again by taking the following procedure and there after section 1 should be carried out again.



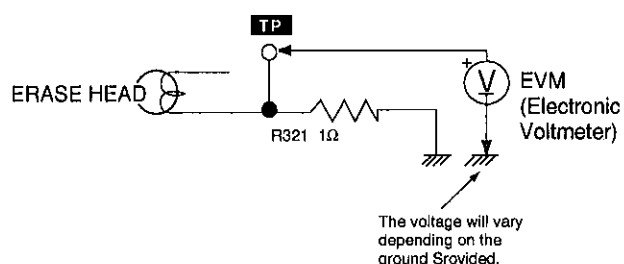
PLAYBACK FREQUENCY RESPONSE (DECK 1/2)

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in Fig. 4 for both L-CH and R-CH.

**Fig. 4****ERASE CURRENT ADJUSTMENT**

1. With no tape loaded in the deck, press the Record button.
2. Check if the output at this time between the erase current confirmation point TP on mechanism control P.C.B. (Deck 2) and GND (chassis) is within the standard value.

Standard value: 175±15mA (Metal)
EVM Reading: J341→TP 175±15mV

**CONFIRMATION OF THE OVERALL GAIN AND OVERALL FREQUENCY RESPONSE**

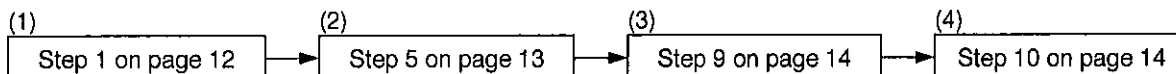
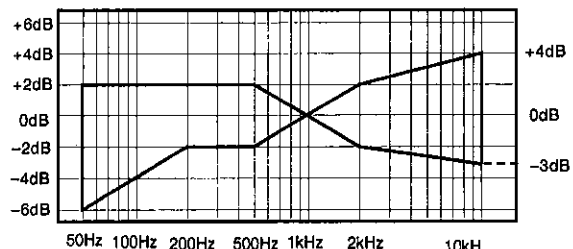
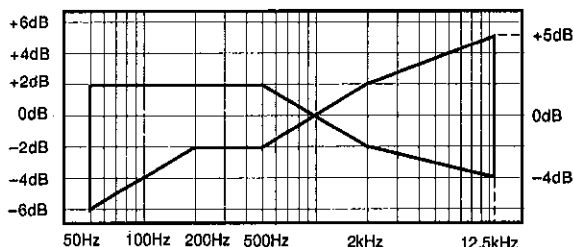
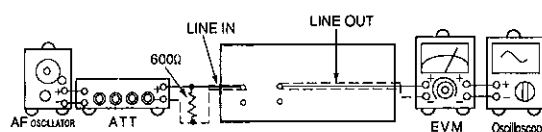
1. In the Record Pause mode, load a normal blank tape (QZZCRV) into the deck, and apply the reference input signal (1kHz, -24dB) to the Rec. input. Adjust the output to 320mV with the attenuator, and start recording.
2. While playing back the reference signal just recorded, verify that the output level falls in the following range.

Standard value: 320mV±0.5dB

3. Afterward, apply a signal (frequency at the measured point in the range from 50Hz to 10kHz), whose level is 20dB lower than the reference signal level (1kHz, -24dB=approx. 63mV), to the Rec. input. Then start recording with a normal blank tape (QZZCRA).
4. Play back the test signals just recorded and verify that the levels at the test frequencies fall in the ranges specified in Fig. 5 with respect to the reference signal level.
5. Repeat steps 3 and 4 above for CrO₂ blank test tape (QZZCRX1) and Metal blank test tape (QZZCRZ5), in these cases raising the upper end of the test signal frequency range to 12.5kHz. Verify that the signal levels at the test frequencies fall in the ranges specified in Fig. 6 with respect to the reference signal level.

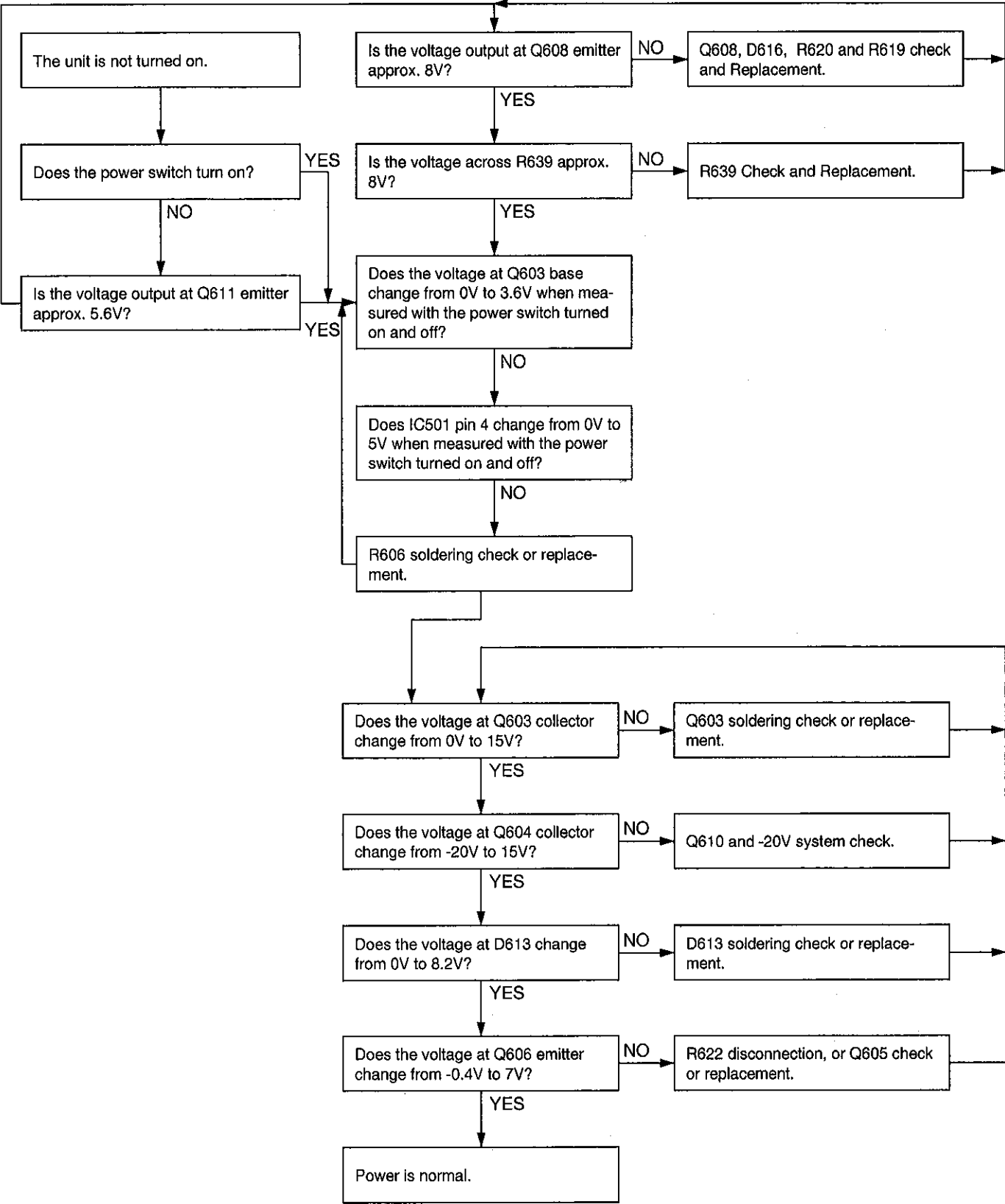
Steps 1 through 2 above are concerned with overall gain; steps 3 through 5 pertain to overall frequency response.

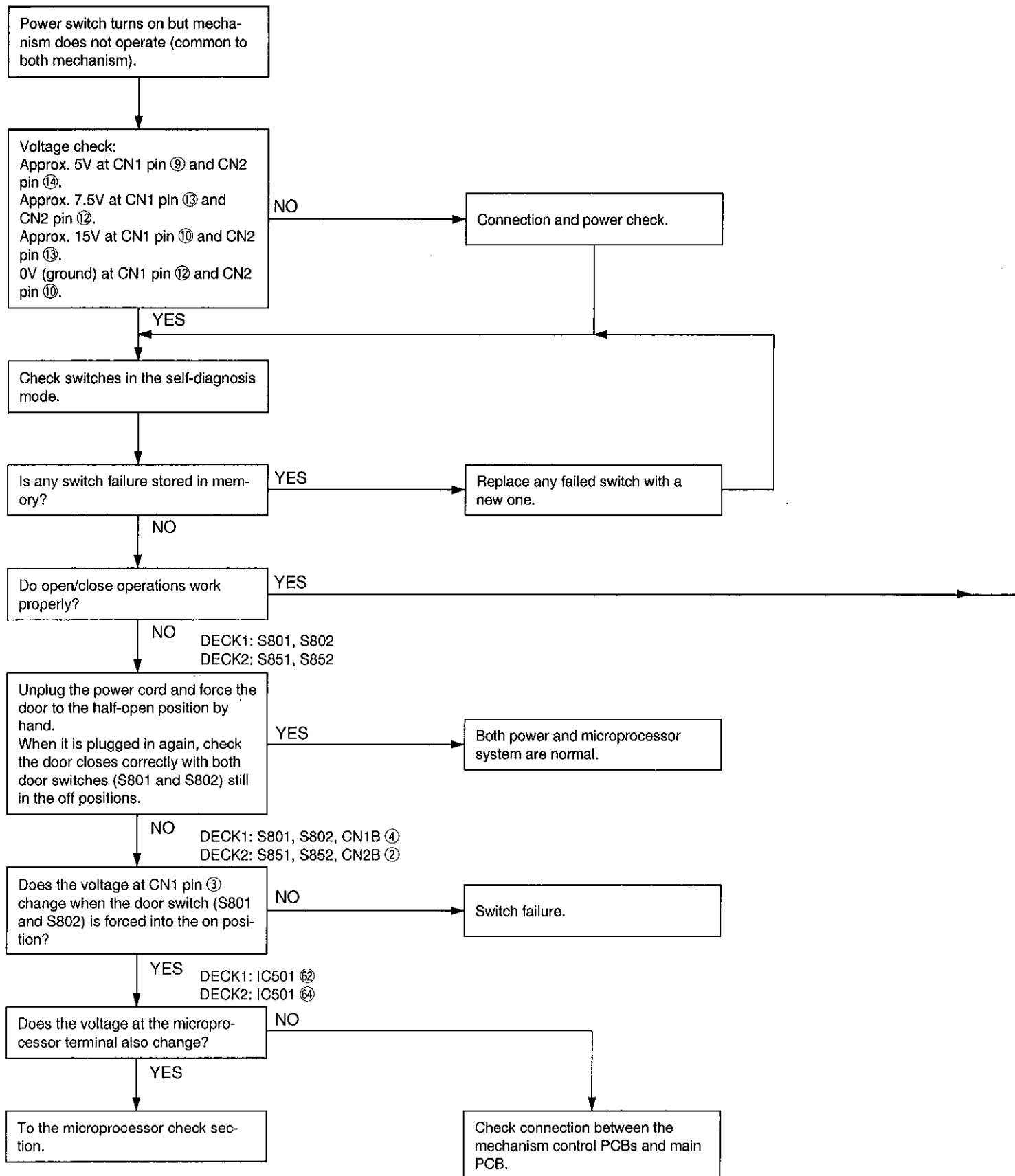
6. If outside the standard value, data in EEPROM should be written again by taking the following procedure and thereafter section 1-5 should be carried out again.

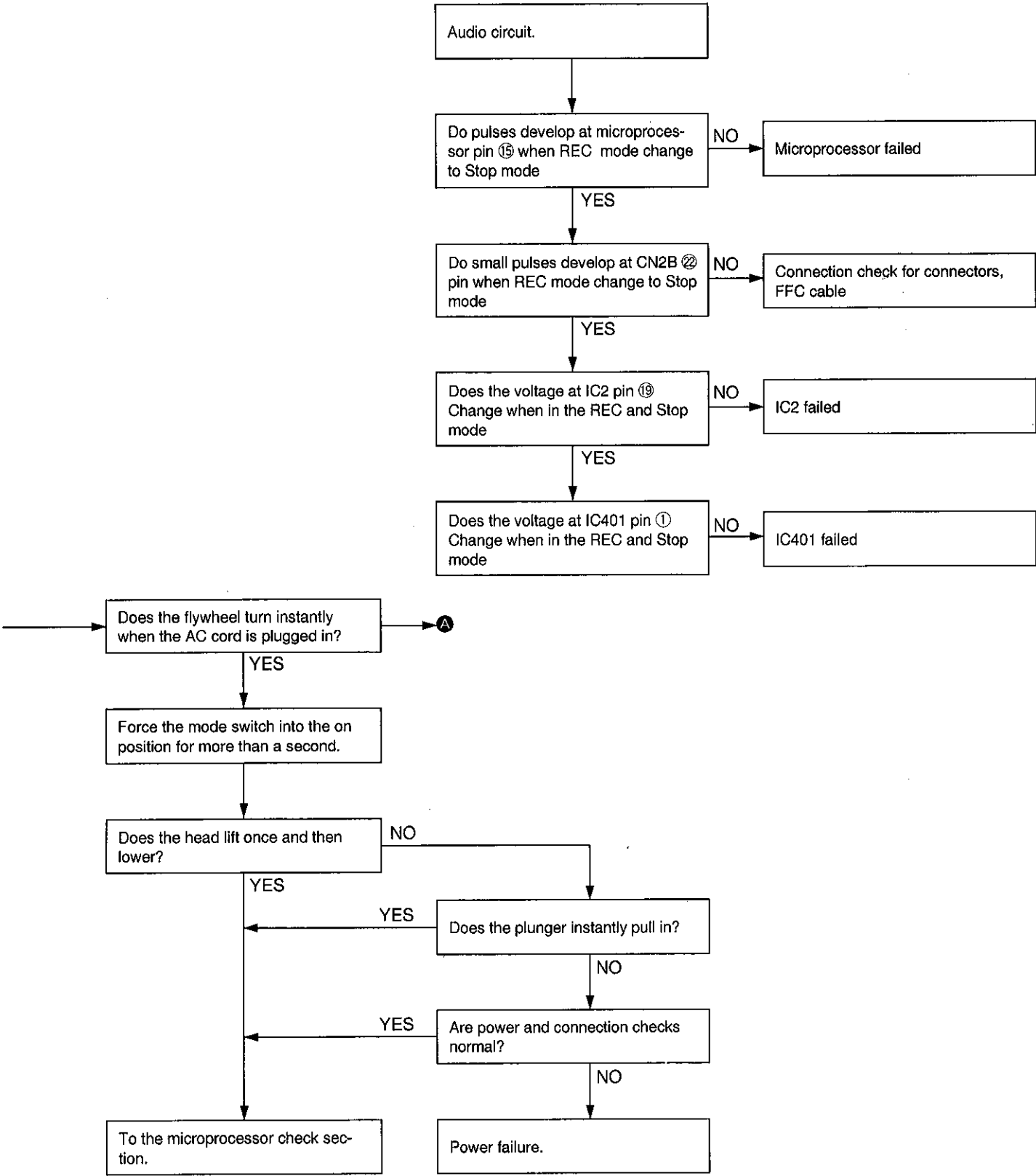
**Normal Overall frequency response chart (NR OUT)****Fig. 5****CrO₂ Metal Overall frequency response chart (NR OUT)****Fig. 6**

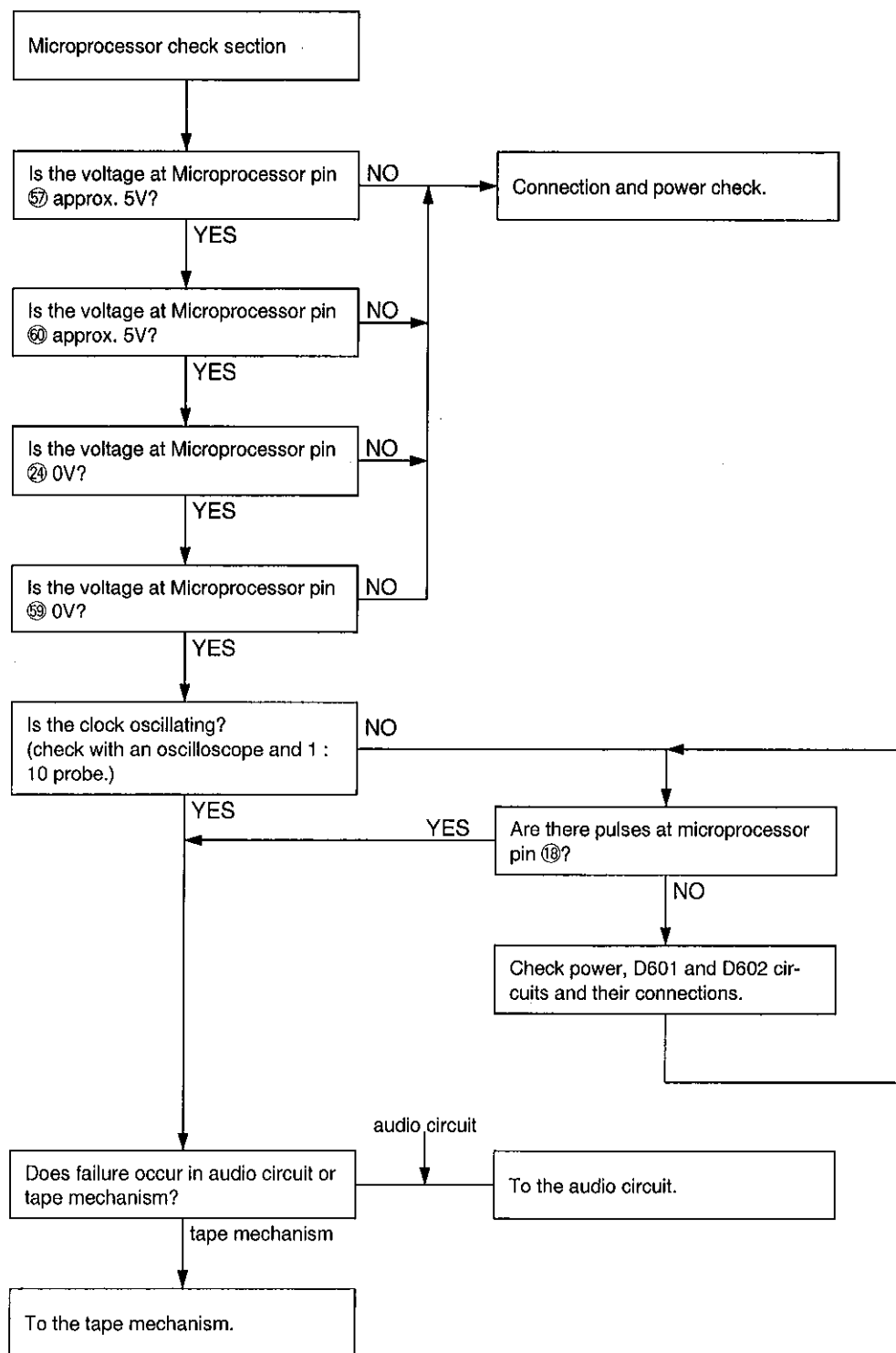
■TROUBLESHOOTING GUIDE

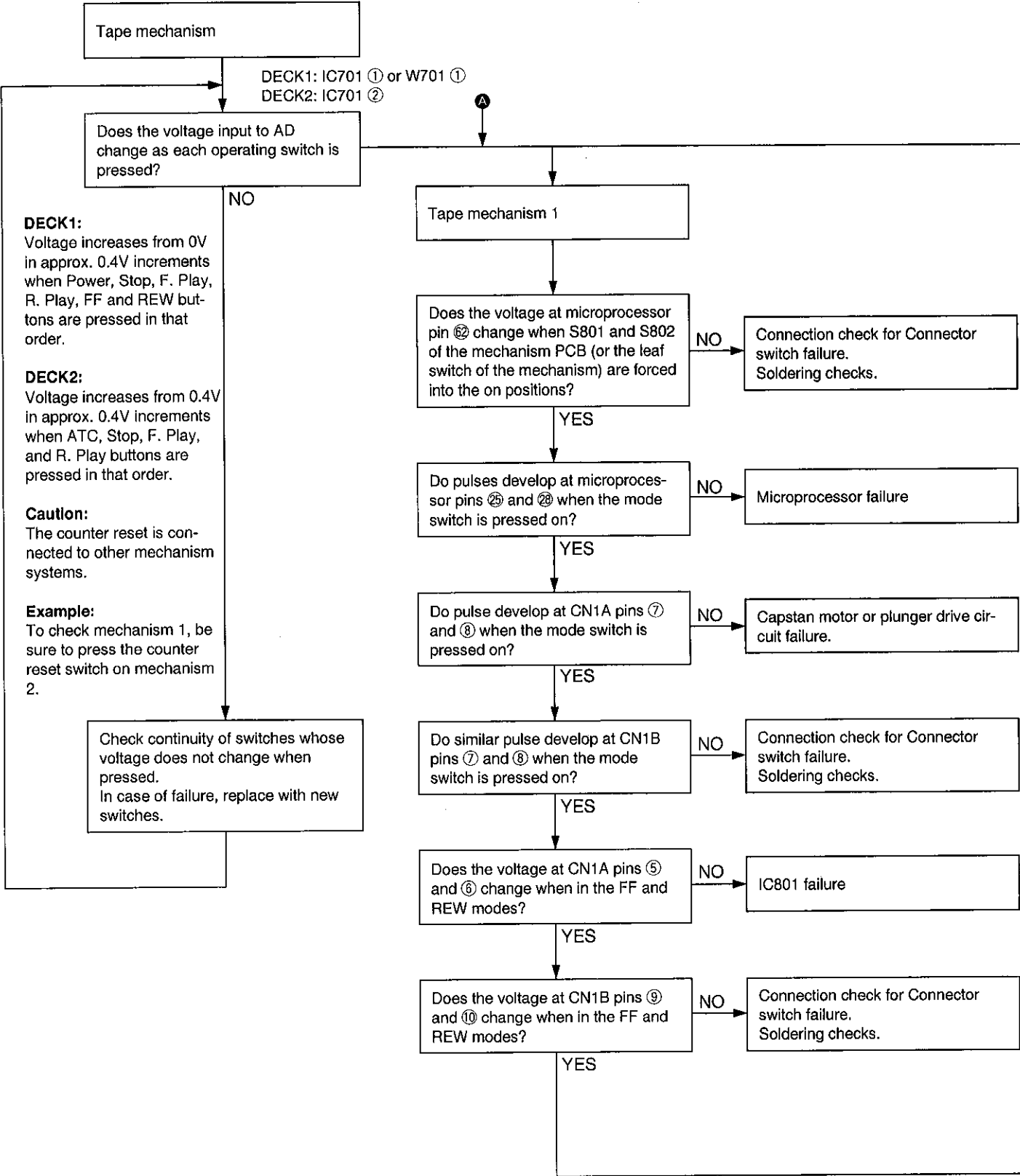
* To perform troubleshooting, set the unit to the state described in the "Checking procedure each P.C.B." on pages 2, 3.

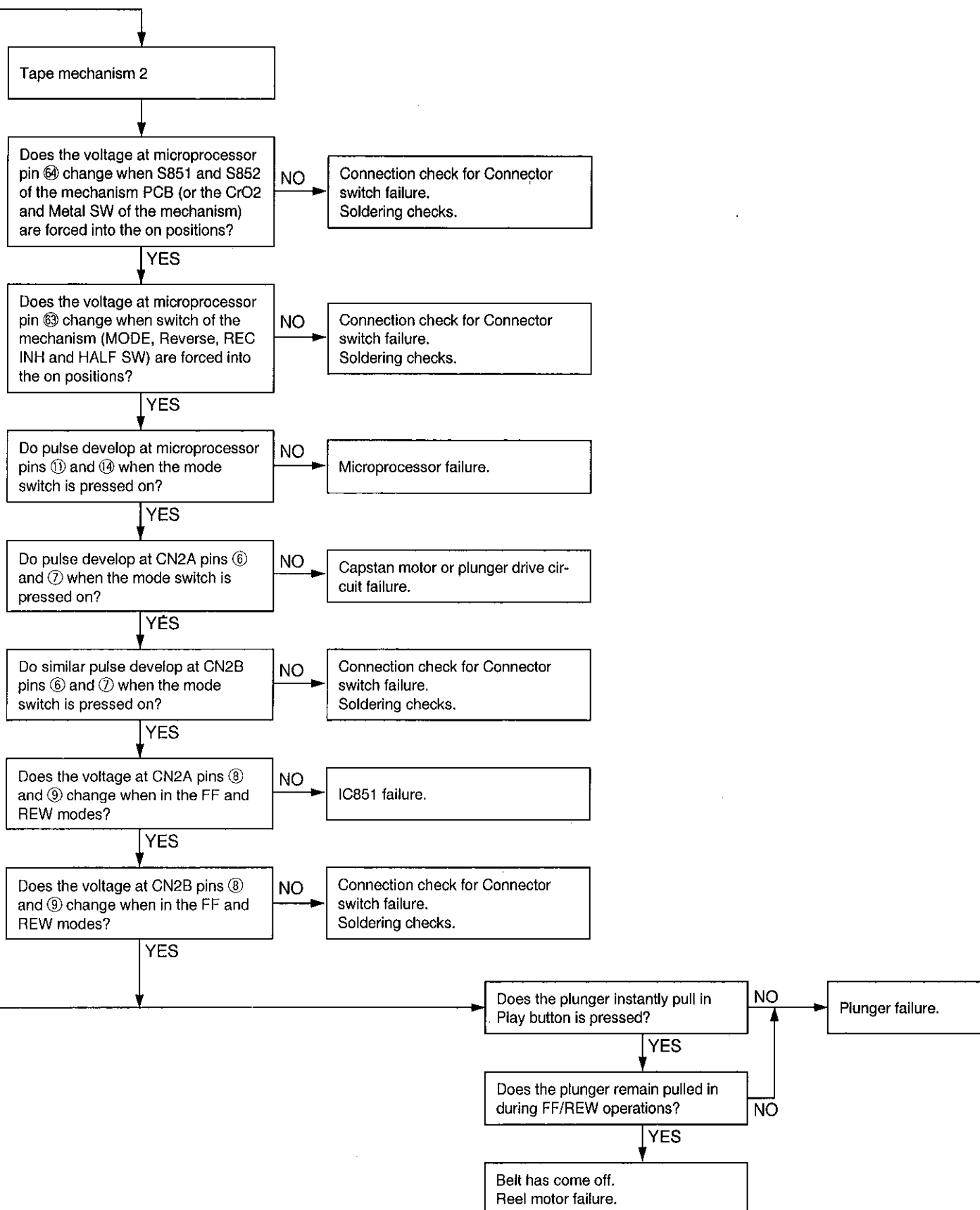






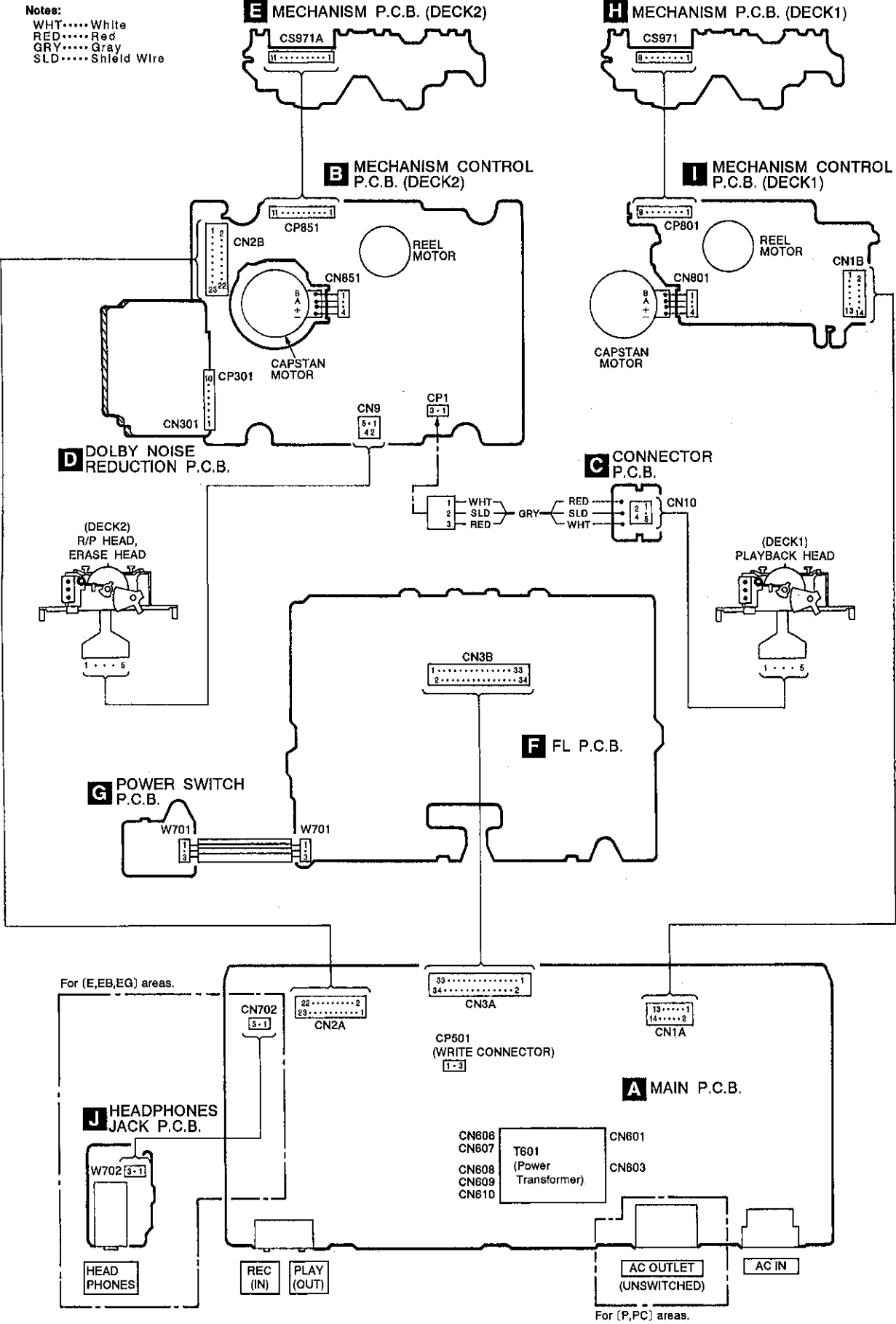






WIRING CONNECTION DIAGRAM

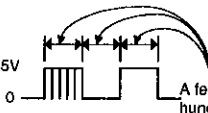
Notes:
WHT.....White
RED.....Red
GRY.....Gray
SLD.....Shield Wire

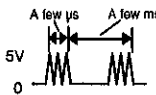
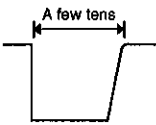


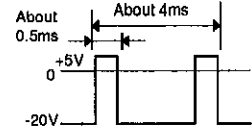
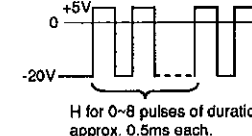
TERMINAL GUIDE

• IC501 (M38122M4251F): MICROCOMPUTER

* To check the IC terminal table, set the unit to the state described in the "Checking procedure each P.C.B." on pages 2,3.

Pin No.	Mark	I/O Division	Function	Check Point	Description
1	KEY1	I	Key switch input	CN3A(27) pin	DECK1: When no key is pressed: 5V When Stop key is pressed: 0.4V When Power key is pressed: 0V When any other key is pressed : 0 to 5V
2	KEY2	I	Key switch input	CN3A(28) pin.	DECK2: When no key is pressed: 5V When Stop key is pressed: 0V When any other key pressed 0-5V
3	LM/TPS	I	Display level and TPS det. input	CN2A(20) pin	TPS mode No program: "L" (0V) program: "H" (5V)
4	POWER	O	Power supply control output	IC501(4) pin	Power ON: "H" (5V) Power OFF: "L" (0V)
5	EDATA	O	EEPROM serial data input/output	IC502(5) pin CP501(3) pin	(ex...For ↔ REV PLAY mode is changed) Waveform appears in response to 6 below 
6	ECS	O	EEPROM chip select signal ON: "H", OFF "L"	IC502(3) pin CP501(1) pin	(ex... For ↑ REV PLAY mode is changed) 
7	X2	O	EDIT mode (X1, X2) select output	Q506(B) pin	X2 EDIT : "L" (0V)
8	CONTROL	—	—	IC501(6) pin	—
9	P51	I	Deck 2 reel pulse det. input (supply side)	Q502(C) pin	5V 0  Supply reel on deck 2 Fast FF/REW mode is disabled unless both signals 9 and 10 are below
10	P50	I	Deck 2 reel pulse det. input (Takeup side)	Q503(C) pin	5V 0  Take up reel on deck 2
11	SOL2	O	Deck 2 solenoid drive output	Q663(B) pin	Deck 2 STOP → PLAY...10~100ms : "H" (5V) STOP → FF...10~100ms : "H" (5V)
12	CSOL2	O	Deck 2 solenoid hold output	D653(K) pin	Deck 2 FF/REW : "H" (5V)
13	HSPD2	O	Deck 2 reel motor speed select output	IC501(13) pin	Deck 2 High speed FF/REW/TPS mode : "H" (5V)

Pin No.	Mark	I/O Division	Function	Check Point	Description
14	CAP2	O	Deck 2 capstan motor control output	Q865 (B) pin	STOP: "L" (0V) PLAY: "H" (5V)
15	CLK	I	Serial clock for audio IC (IC2, IC401) and EEPROM (IC502)	IC502 (4) pin CP501 (2) pin	 Pulse signal is emitted only when a mode change occurs.
16	SDATA	O	Serial data for audio IC (IC2, IC401)	IC501 (16) pin	 Data output in response to 15 above
17	REMOTE	I	Remocon signal input ON: "H", OFF: "L"	IC501 (17) pin	H and L pulse waveform appears on the input of a remote control signal.
18	POF	I	Power off det. input ON: "H", OFF: "L"	CN3A (29) pin	 Rectified waveform at both 50 and 60Hz (clamping at 5V) The microprocessor goes into standby mode when this signal is removed.
19	RESET	I	Reset input ON: "L", OFF: "H"	IC501 (18) pin	 Usually H (=5V) but L for a period of a few to a few tens of milliseconds is first plugged in when the player.
20	P71	I	Deck 1 reel pulse det. input (supply side)	Q504 (C) pin	 Supply reel on deck 1 Fast FF/REW mode is disabled unless both signals 53 are active.
21	P70	I	Deck 1 reel pulse det. input (Take up side)	Q505 (C) pin	 Changes within the 0↔5V range each time the take up reel on deck 1 is through approximately 30 degrees.
22	XIN	I	Microcomputer clock OSC terminal	Z501 (1) pin	 Oscillator waveform at 6MHz
23	XOUT	O	Microcomputer clock OSC terminal	Z501 (3) pin	 Oscillator waveform at 6MHz
24	VSS	-	Microcomputer GND	IC501 (24) pin	0V
25	SOL1	O	Deck 1 solenoid drive output	Q613 (B) pin	Deck 1 STOP → PLAY...10~100ms : "F" (5V) STOP → FF...10~100ms : "F" (5V) (Twice)
26	CSOL1	O	Seck 1 solenoid drive output	D603 (K) pin	Deck 1 FF/REW : "H" (5V)

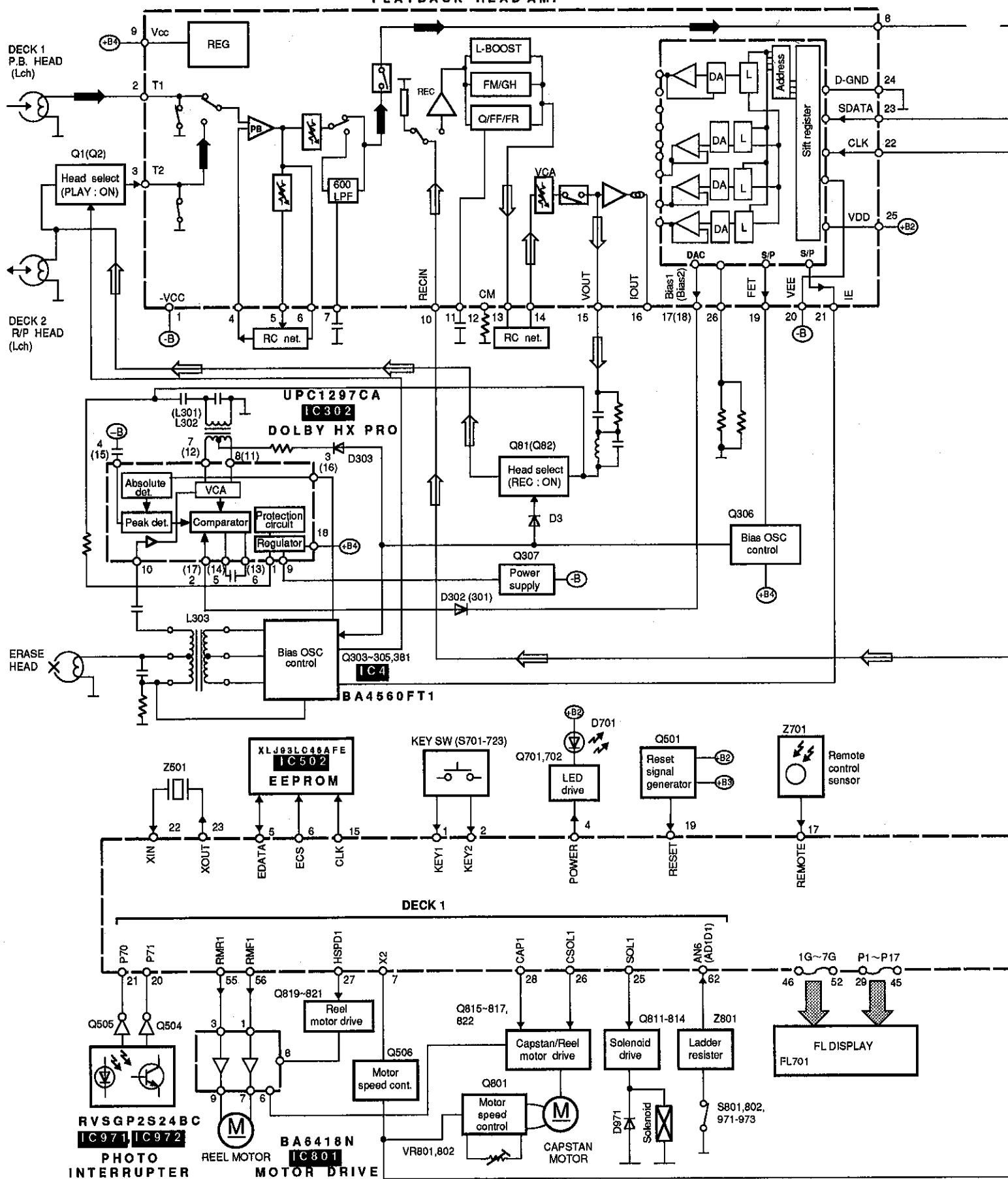
Pin No.	Mark	I/O Division	Function	Check Point	Description												
27	HSPD1	O	Deck 1 reel motor speed select output	IC501 ②7 pin IC501 ① pin	Deck1 High speed FF/REW/TPS mode : "H" (5V)												
28	CAP 1	O	Deck 1 capstan motor control output	Q815 ⑧ pin	Deck1 STOP: "L" (0V) PLAY: "H" (5V)												
29 ? 45	P1 ? P17	O	FL meter segment output ON: "H", OFF: "L"	FL701 ⑫ ~ ⑭ pin													
46 ? 52	1G ? 7G	O	FL meter glide output ON: "H", OFF: "L"	FL701 ⑤ ~ ⑪ pin													
53	RMR2	O	Deck 2 reel motor control output (REV)	IC851 ① pin	<table><tr><td></td><td>STOP</td><td>F. PLAY</td><td>R. PLAY</td></tr><tr><td>RMR2</td><td>L</td><td>L</td><td>H</td></tr><tr><td>RMF2</td><td>L</td><td>H</td><td>L</td></tr></table>		STOP	F. PLAY	R. PLAY	RMR2	L	L	H	RMF2	L	H	L
	STOP	F. PLAY	R. PLAY														
RMR2	L	L	H														
RMF2	L	H	L														
54	RMF2	O	Deck 2 reel motor control output (FWD)	IC851 ③ pin													
55	RMR1	O	Deck 1 reel motor control output (REV)	IC801 ① pin	<table><tr><td></td><td>STOP</td><td>F. PLAY</td><td>R. PLAY</td></tr><tr><td>RMR 1</td><td>L</td><td>L</td><td>H</td></tr><tr><td>RMF 1</td><td>L</td><td>H</td><td>L</td></tr></table>		STOP	F. PLAY	R. PLAY	RMR 1	L	L	H	RMF 1	L	H	L
	STOP	F. PLAY	R. PLAY														
RMR 1	L	L	H														
RMF 1	L	H	L														
56	RMF1	O	Deck 1 reel motor control output (FWD)	IC801 ③ pin													
57	VCC	—	Microcomputer terminal	IC501 ⑤7 pin	+5V, Backup												
58	-VP	—	FL meter pull down voltage input terminal	IC501 ⑤8 pin	-20V												
59	GND	—	GND terminal (A/D)	IC501 ⑤9 pin	0V												
60	VREF	I	Reference power supply (+5V) (A/D)	IC501 ⑥0 pin	Can be checked at pin ⑦ of connector CN801 or at pin of CN802												
61	AN7	I	Model select terminal	IC501 ⑥1 pin	Approx. 5V												
62	AD1D1	I	Deck 1 Mechanism switch (MODE, CrO ₂ , HALF, OPEN/CLOSE)	CN1A ⑪ pin	No tape load: Approx. 4.1V Normal tape with tab: Approx. 2.6V CrO ₂ tape with tab: Approx. 3.3V												
63	AD2D2	I	Deck 2 Mechanism switch (MODE, RINH, HALF) input	CN2A ⑩ pin	No tape load: Approx. 4.1V Normal tape with tab: Approx. 2.3V												
64	AD1D2	I	Deck 2 Mechanism switch (FINN, CrO ₂ , Metal, OPEN/CLOSE) input	CN2A ② pin	No tape load: Approx. 4.1V Normal tape with tab: Approx. 0V CrO ₂ tape with tab: Approx. 1.1V Metal tape with tab: Approx. 1.7V												

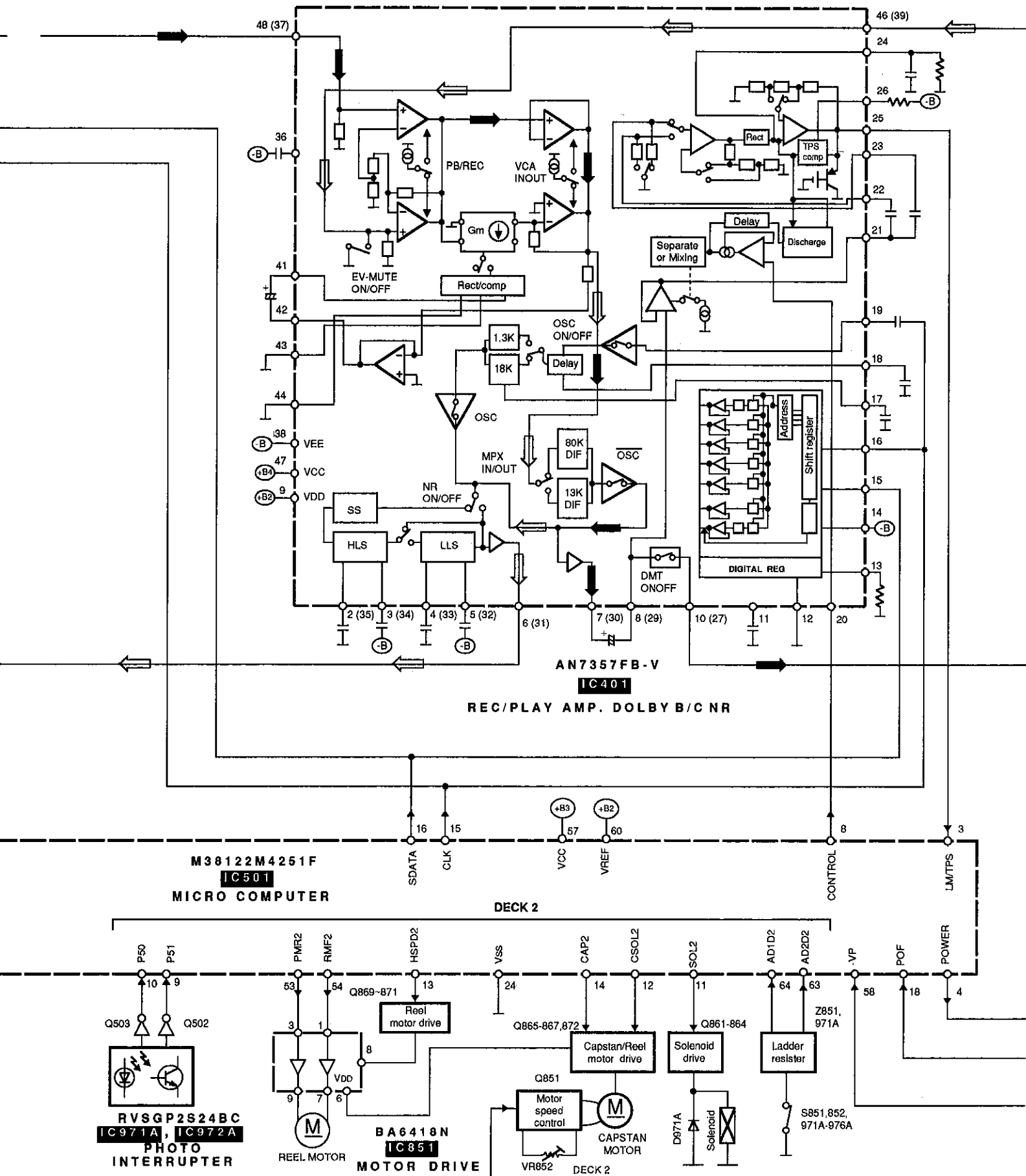
■ BLOCK DIAGRAM

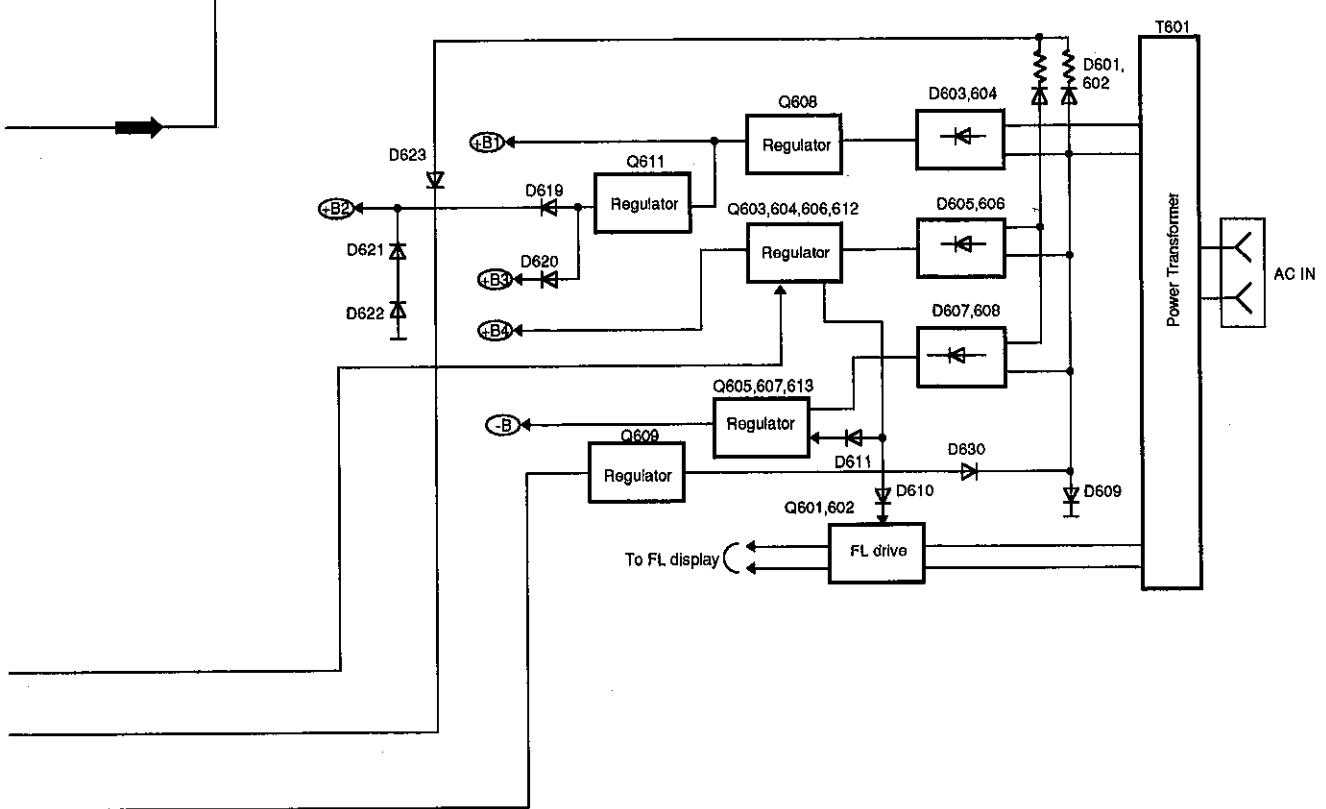
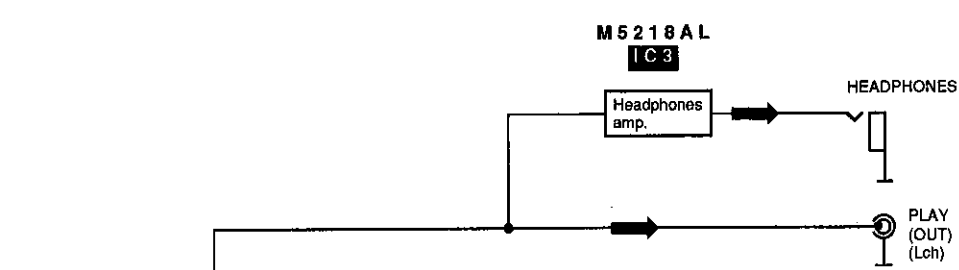
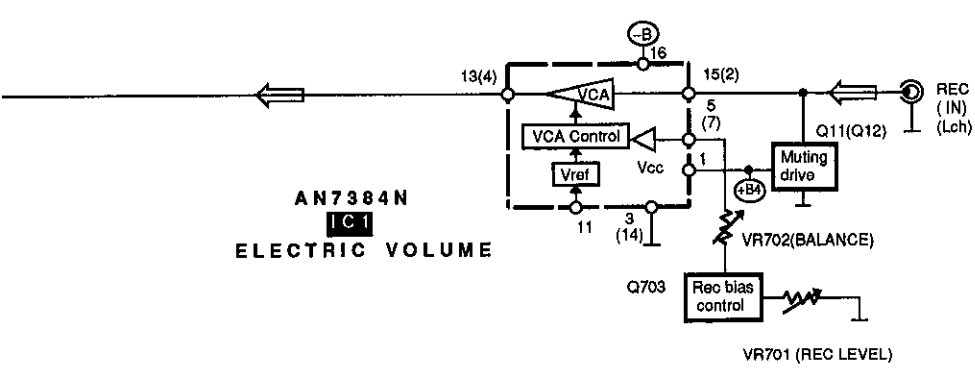
AN7356SC-E2

1 C 2

PLAYBACK HEAD AMP







- Signal line
- —▶ : Playback signal line
- —▶ : Recording signal line

■ SCHEMATIC DIAGRAM (Parts list on pages 50, 54)

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

Note:

- S701: Power "STANDBY $\odot$ /ON" (POWER, STANDBY $\odot$ ON) switch.
- S702: Stop (DECK 1) (■) switch.
- S703: Forward-side playback switch (▶). (DECK 1)
- S704: Reverse-side playback switch (◀). (DECK 1)
- S705: Fast-forward search switch (▶▶ TPS). (DECK 1)
- S706: Rewind search switch (◀◀ TPS). (DECK 1)
- S707: Open/close switch (▲ OPEN/CLOSE). (DECK 1)
- S708: Dolby noise-reduction switch (DOLBY NR; [B], [C])
- S709: Reverse-mode select switch (REVERSE MODE).
- S710: Synchro-start switch (SYNCHRO START).
- S711: Tape-to-tape recording-speed switch (SPEED; X1, X2).
- S712: Counter reset switch (COUNTER 2 RESET). (DECK 2)
- S713: Auto tape calibration switch (ATC).
- S714: Stop (DECK 2) (■) switch.
- S715: Forward-side playback switch (▶). (DECK 2)
- S716: Reverse-side playback switch (◀). (DECK 2)
- S717: Fast-forward search switch (▶▶ TPS). (DECK 2)
- S718: Rewind search switch (◀◀ TPS). (DECK 2)
- S719: Open/close switch (▲ OPEN/CLOSE). (DECK 2)
- S720: Record switch (● REC). (DECK 2)
- S721: Pause switch (■ PAUSE). (DECK 2)
- S722: Automatic-record-muting switch (● AUTO REC MUTE). (DECK 2)
- S723: Counter reset switch (COUNTER 1 RESET) (DECK 1)
- S801: DECK 1 Cassette holder open detection switch in "off" position.
- S802: DECK 1 Cassette holder close detection switch in "off" position.
- S851: DECK 2 Cassette holder open detection switch in "off" position.
- S852: DECK 2 Cassette holder close detection switch in "off" position.
- S971: DECK 1 Mode switch in "off" position.
- S971A: DECK 2 Mode switch in "off" position.
- S972: DECK 1 Half switch in "off" position.
- S972A: DECK 2 Half switch in "off" position.
- S973: DECK 1 ATS (CrO₂) switch in "off" position.
- S973A: DECK 2 ATS (CrO₂) switch in "off" position.
- S974A: DECK 2 Reverse rec. inhibit switch in "off" position.
- S975A: DECK 2 Forward rec. inhibit switch in "off" position.
- S976A: DECK 2 ATS (Metal) switch in "off" position.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
1K=1,000 (Ω), 1M=1,000k (Ω)
- Capacity are in micro-farads (μ F) unless specified otherwise.
- All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
().....Voltage value at record mode.
- For measurement us EVM.
- Important safety notice:
Components identified by Δ mark have special characteristics important for safety.
When replacing any of components, be sure to use only manufacturer's specified parts.
- (——— (+B) ———) indicates +B (bias).
- (——— (-B) ———) indicates -B (bias).
- (———▶) indicates the playback signal.
- (◀———) indicates the recording signal.
- The supply part number is described alone in the replacement parts list.

Part No.	Production Part no.	Supply Part No.
IC4	BA4560FT1	SVIBA4560FT1

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

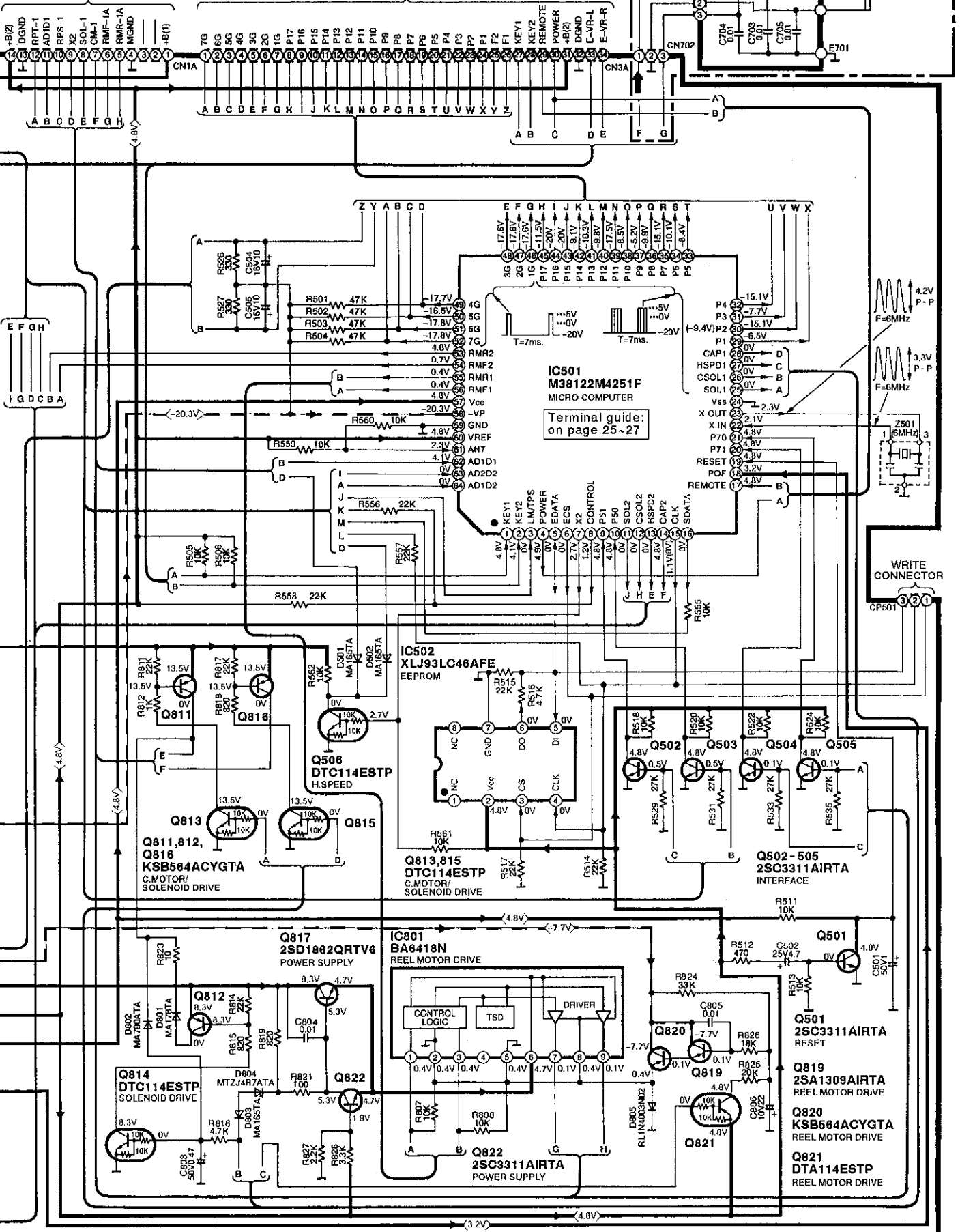
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

For (E, EB, EG) areas

J HEADPHONES JACK CIRCUIT (P.C. Board on page 40)

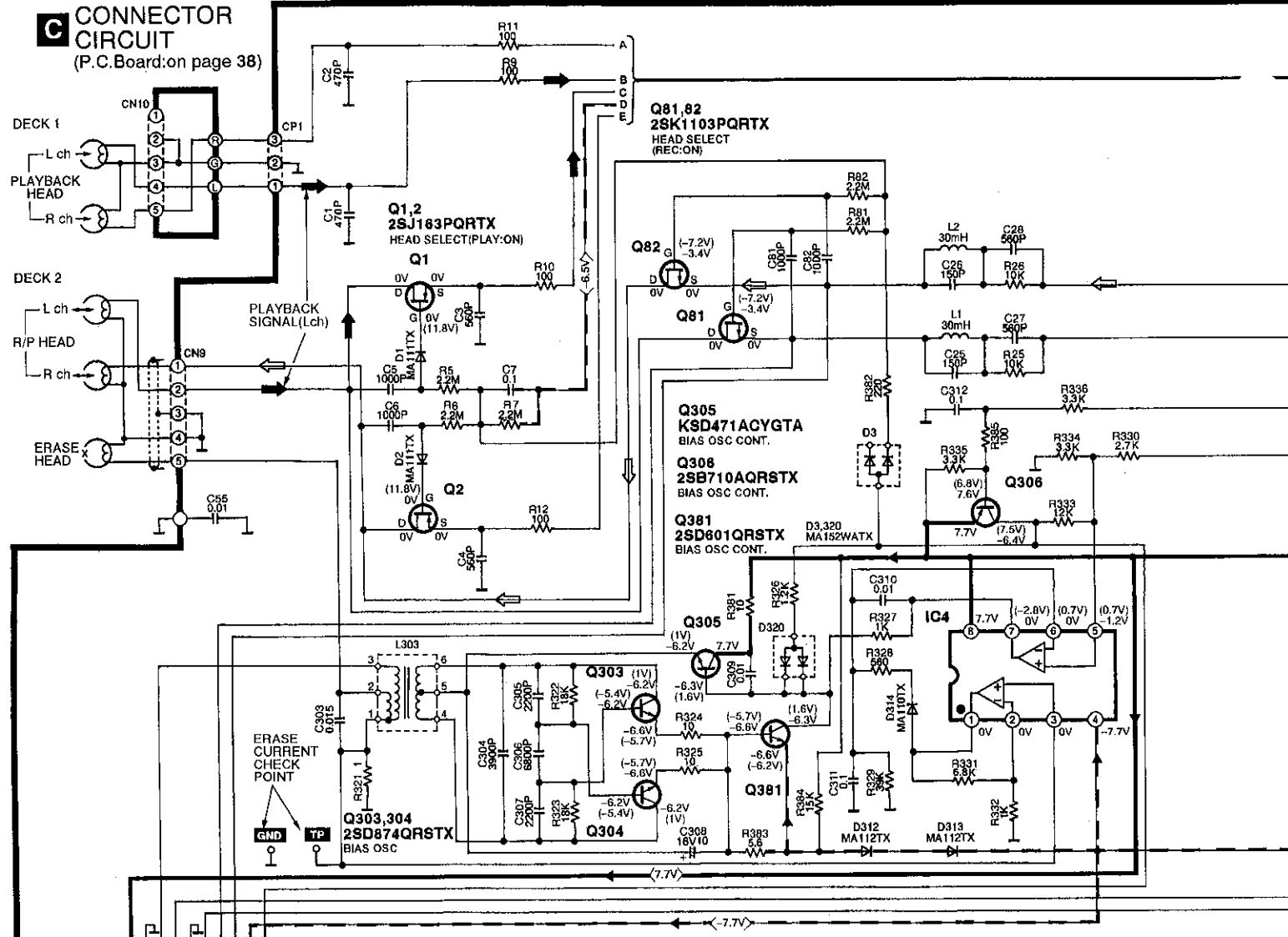
To **MECHANISM**
CONTROL CIRCUIT (DECK1)
(CN1B) on page 37

To **FL CIRCUIT (CN3B)** on page 37

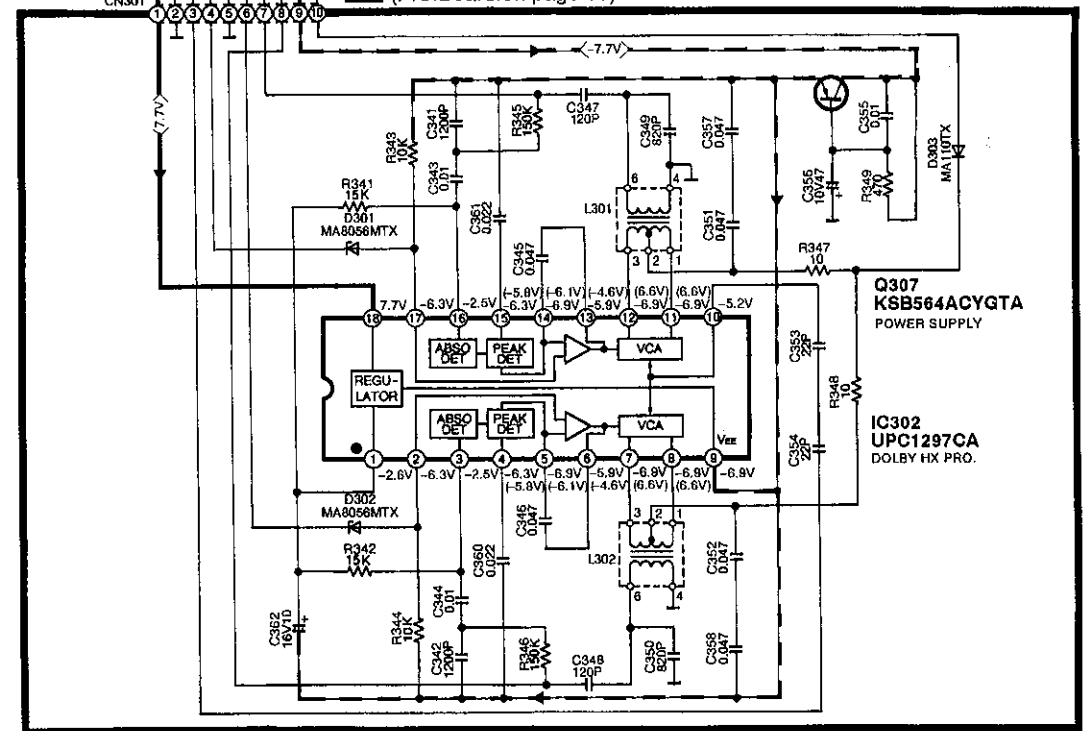


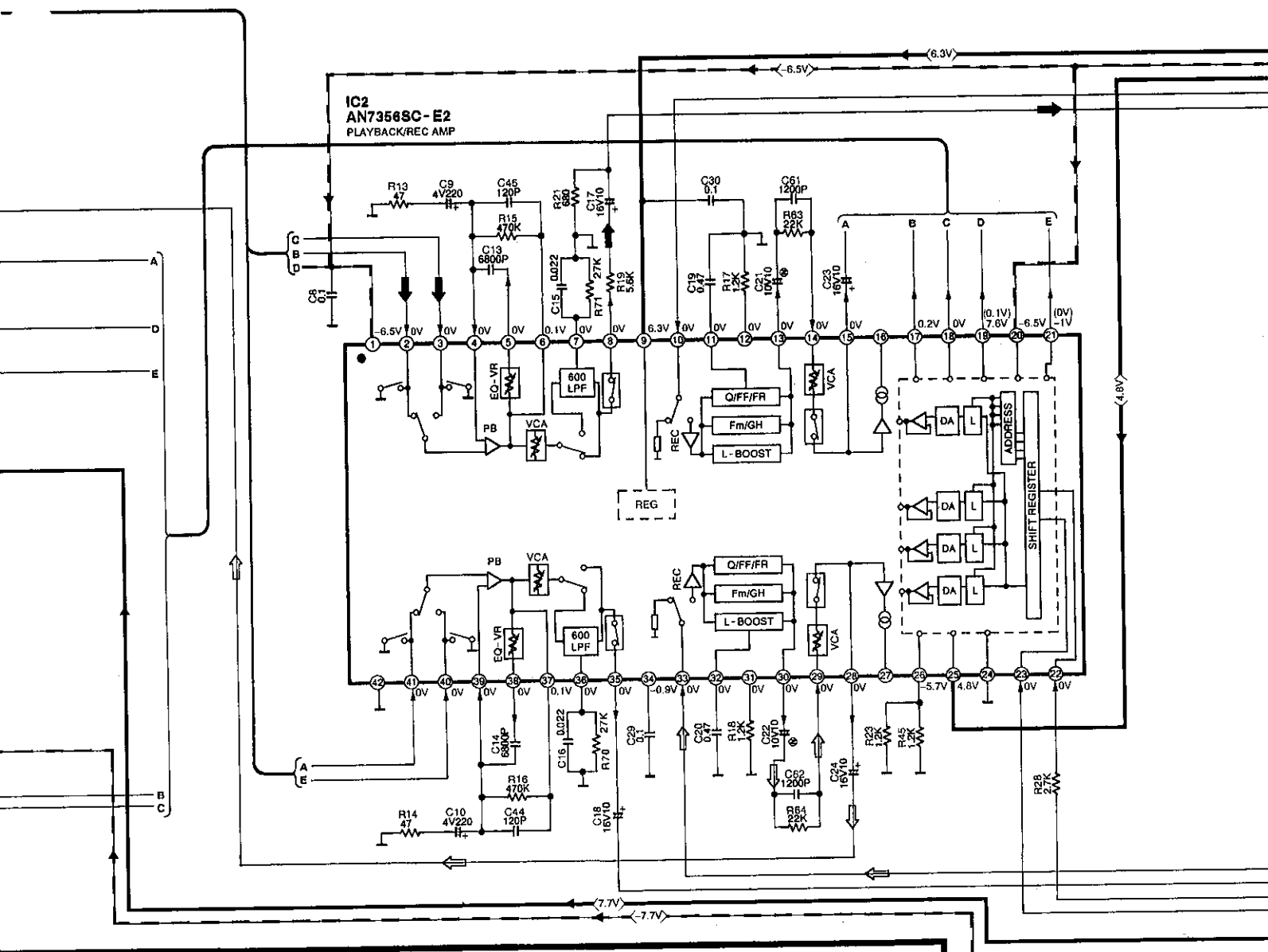
B MECHANISM CONTROL CIRCUIT(DECK2) (P.C.Board: on page 38)

C CONNECTOR CIRCUIT
(P.C.Board: on page 38)

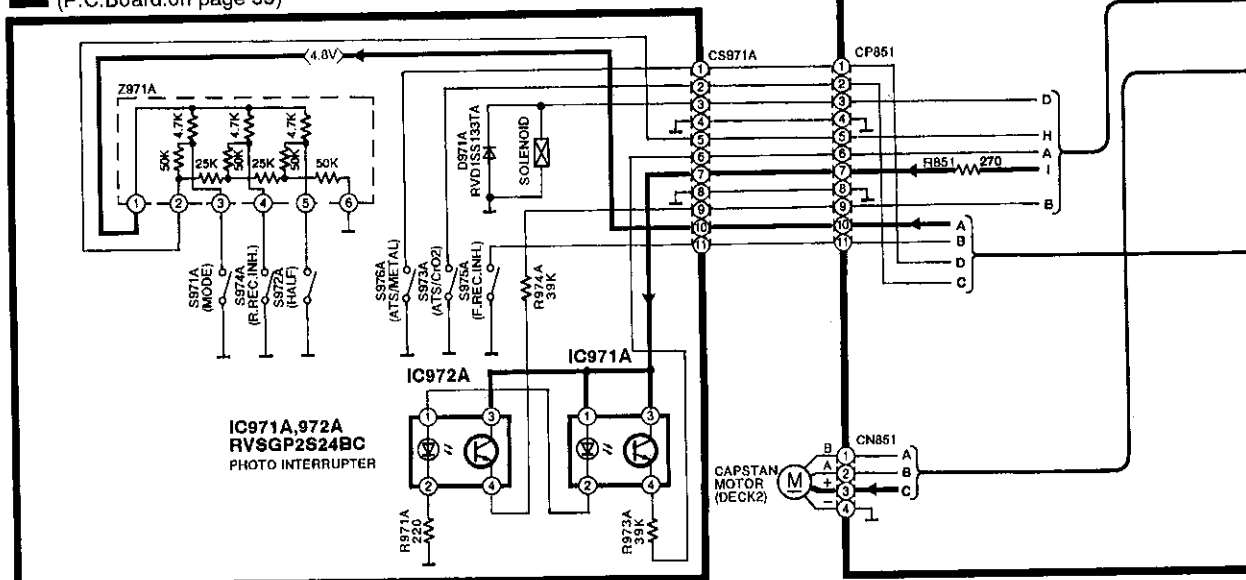


D DOLBY NOISE REDUCTION CIRCUIT
(P.C.Board: on page 38)

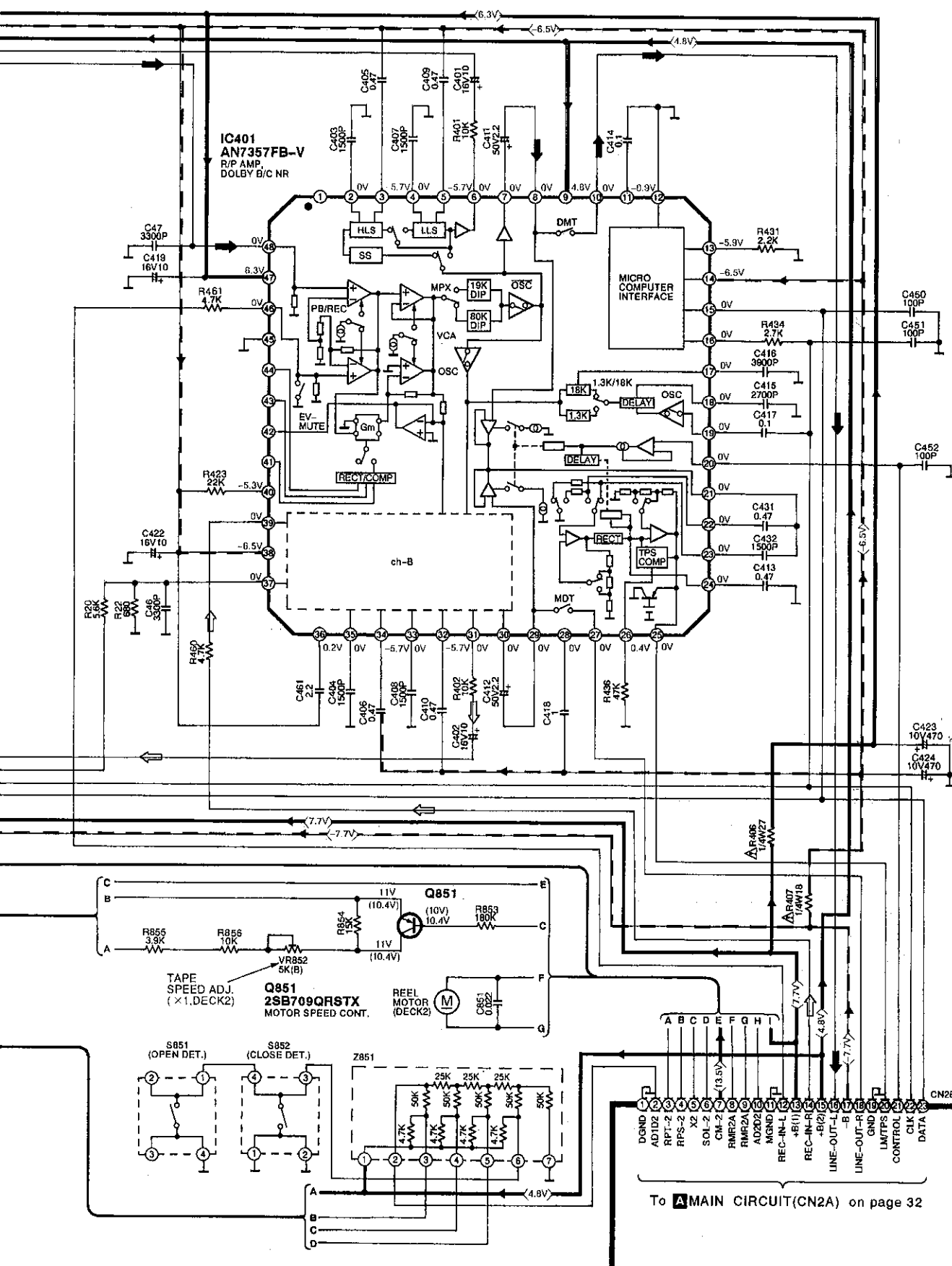




E MECHANISM CIRCUIT (DECK2) (P.C. Board: on page 39)

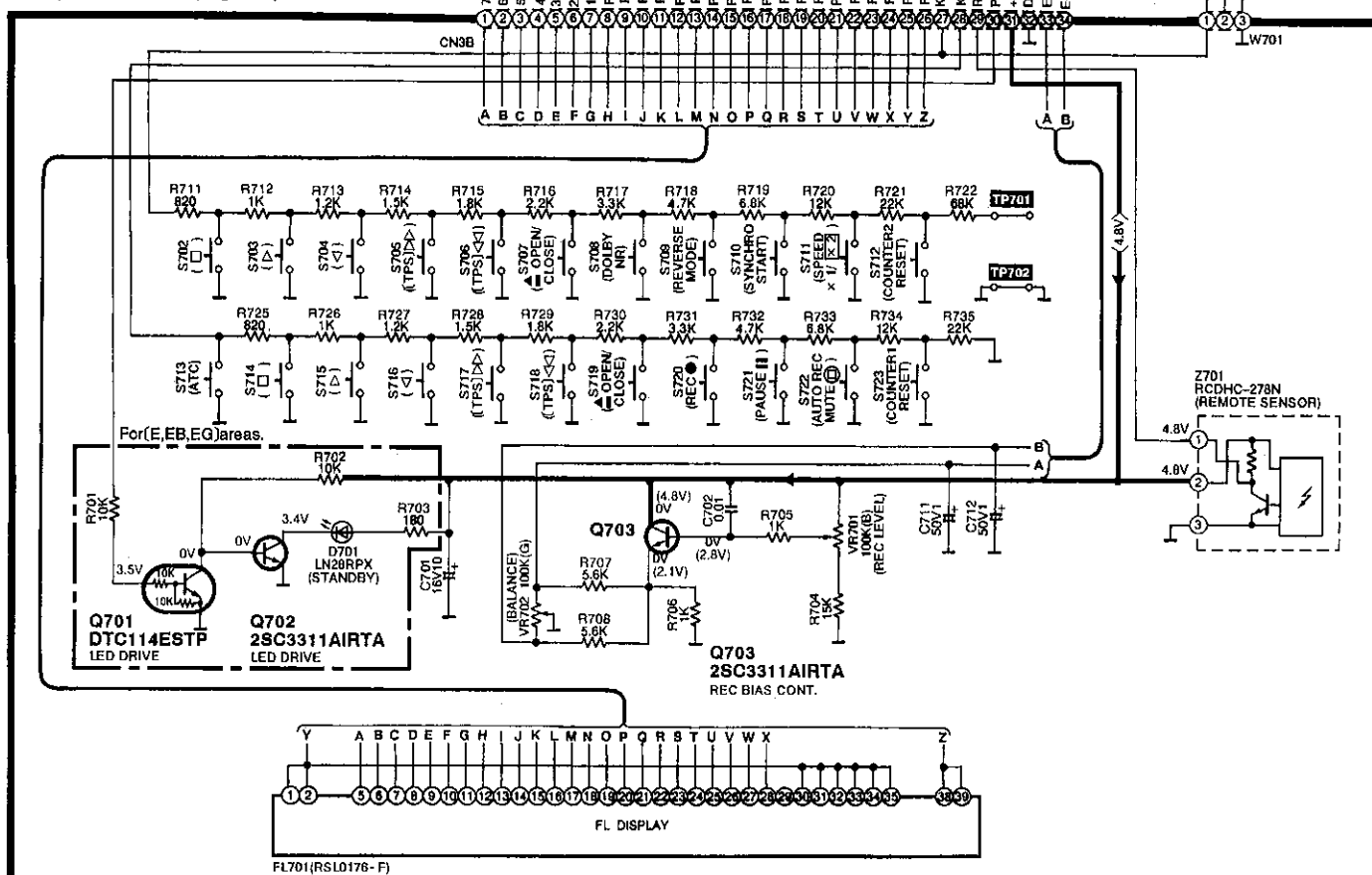


B MECHANISM CONTROL CIRCUIT(DECK2) (P.C.Board : on page 38)

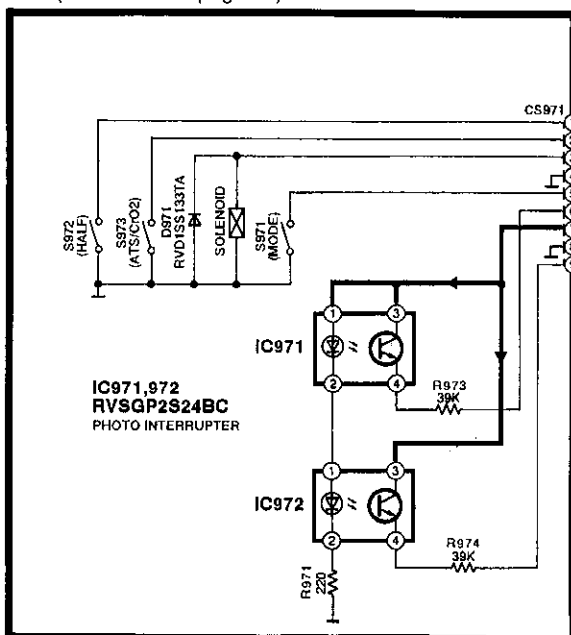


To **A** MAIN CIRCUIT(CN2A) on page 32

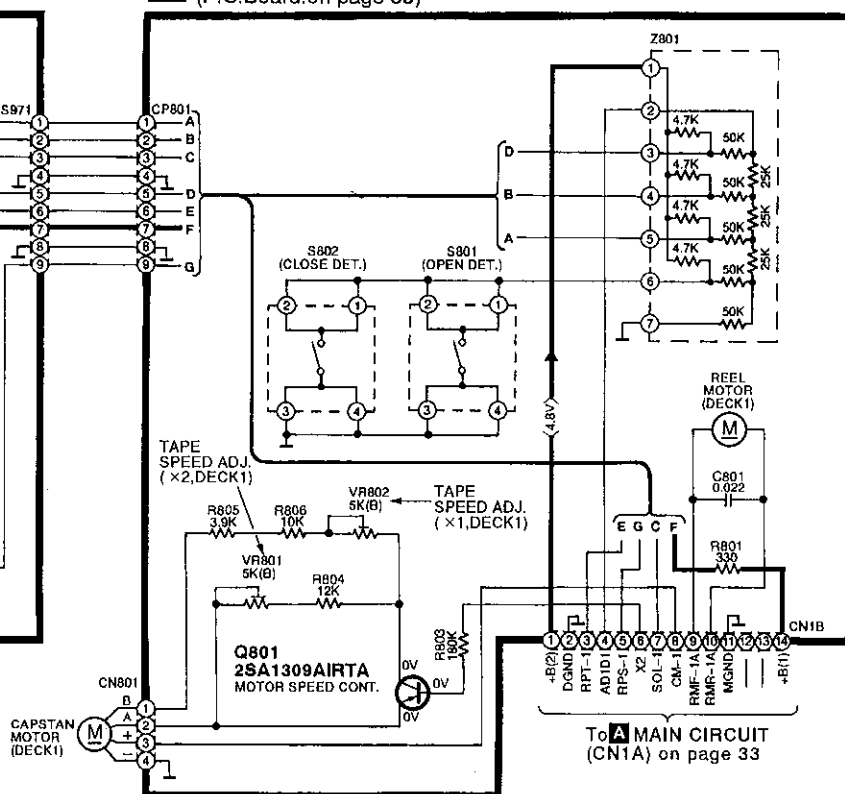
F FL CIRCUIT
(P.C.Board: on page 39)



H MECHANISM CIRCUIT(DECK1)



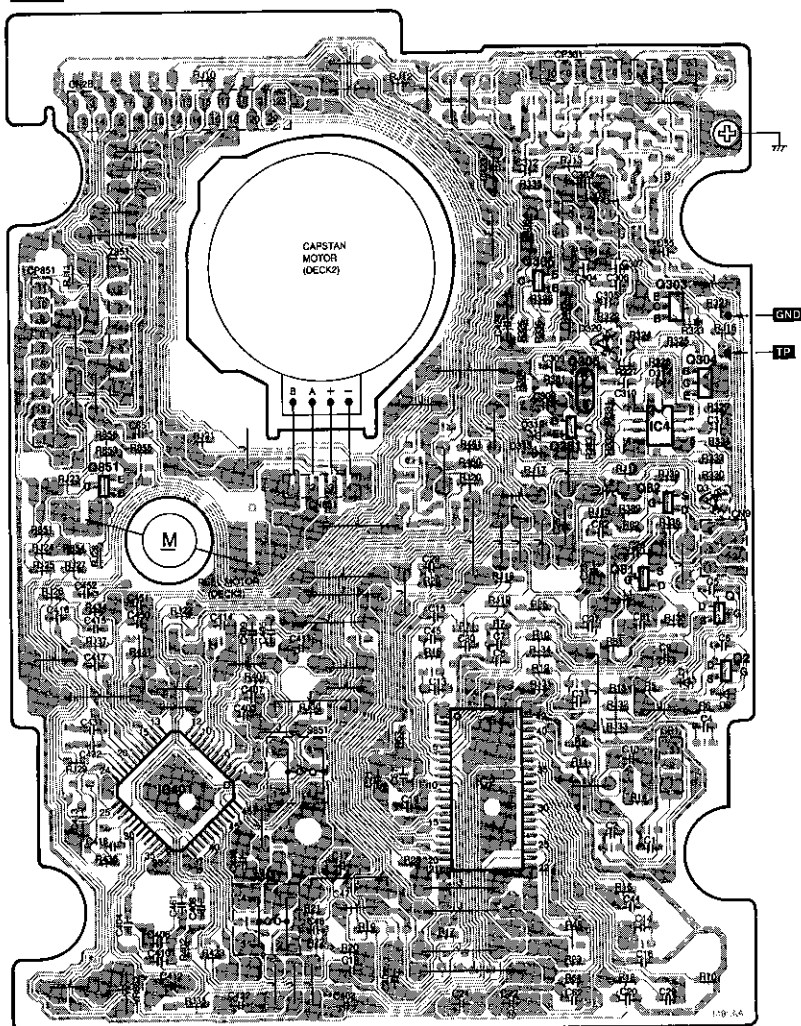
MECHANISM CONTROL CIRCUIT(DECK1)



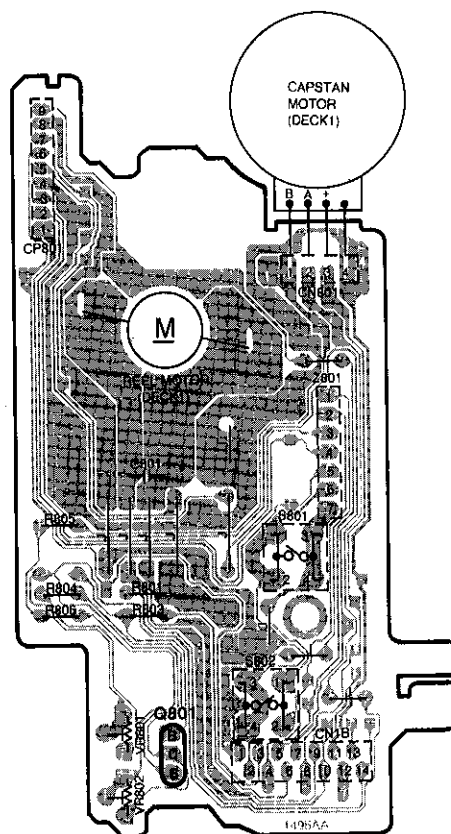
PRINTED CIRCUIT BOARDS

(This printed circuit board diagram may be modified at any time with the development of new technology.)

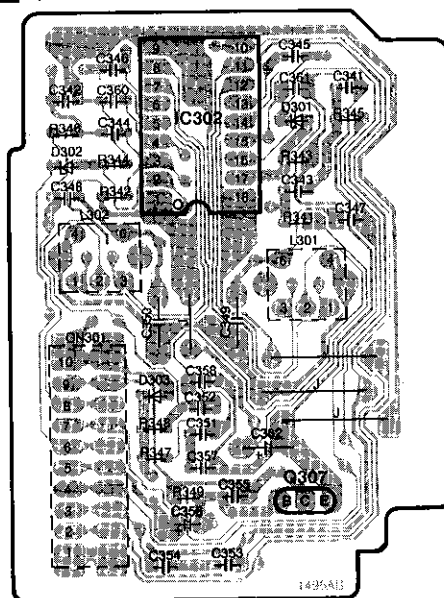
B MECHANISM CONTROL P.C.B. (DECK 2) (REP2166A-T)



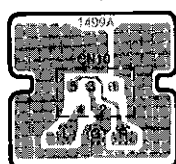
I MECHANISM CONTROL P.C.B. (DECK1) (REP2167A-T)



D DOLBY NOISE REDUCTION P.C.B. (REP2166A-T)



C CONNECTOR P.C.B. (REX0747)



6

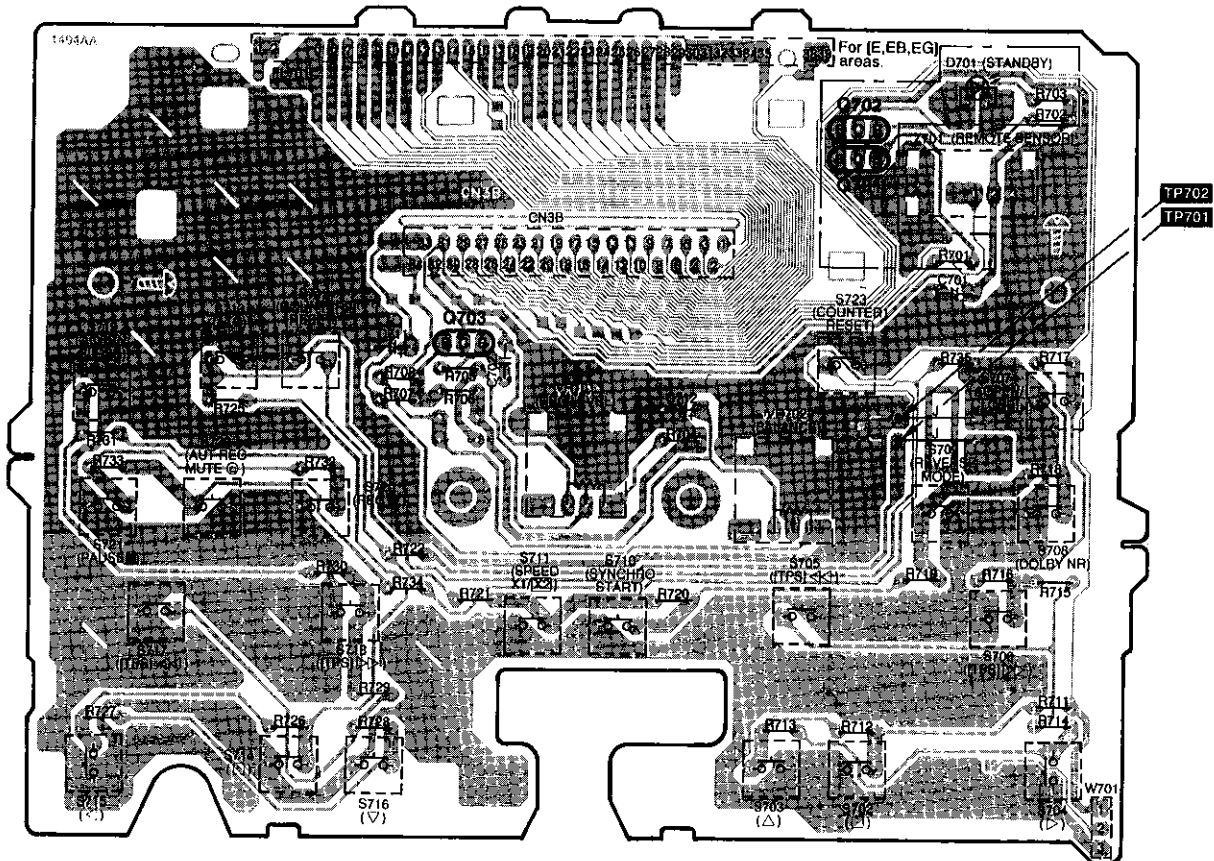
7

8

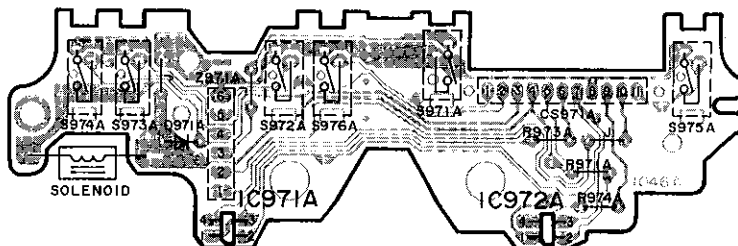
9

10

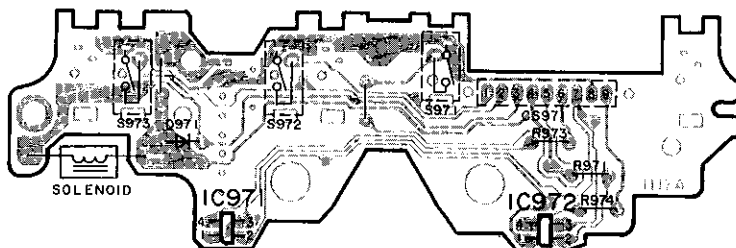
F FL P.C.B. (REP2165E-S...[P,PC] REP2165F-S...[E,EB,EG])



E MECHANISM P.C.B. (DECK2) (REP1656A)



H MECHANISM P.C.B. (DECK1) (REP1655A)



1

2

3

4

5

A MAIN P.C.B. (REP2164E-M...[P,PC]
REP2164F-M...[E,EB,EG])

A

B

C

D

E

F

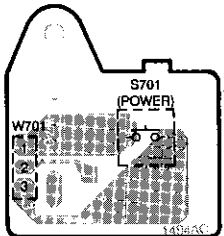
G

AC IN
(120V 60Hz...[P,PC]
230-240V 50/60Hz
...[E,EB,EG])

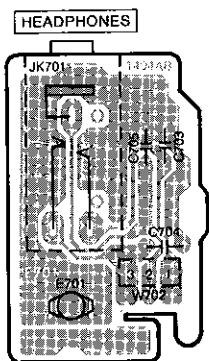
For [P,PC] areas.

AC OUTLET
(UNSWITCHED)

G POWER SWITCH P.C.B.
(REP2165E-S...[P,PC]
REP2165F-S...[E,EB,EG])

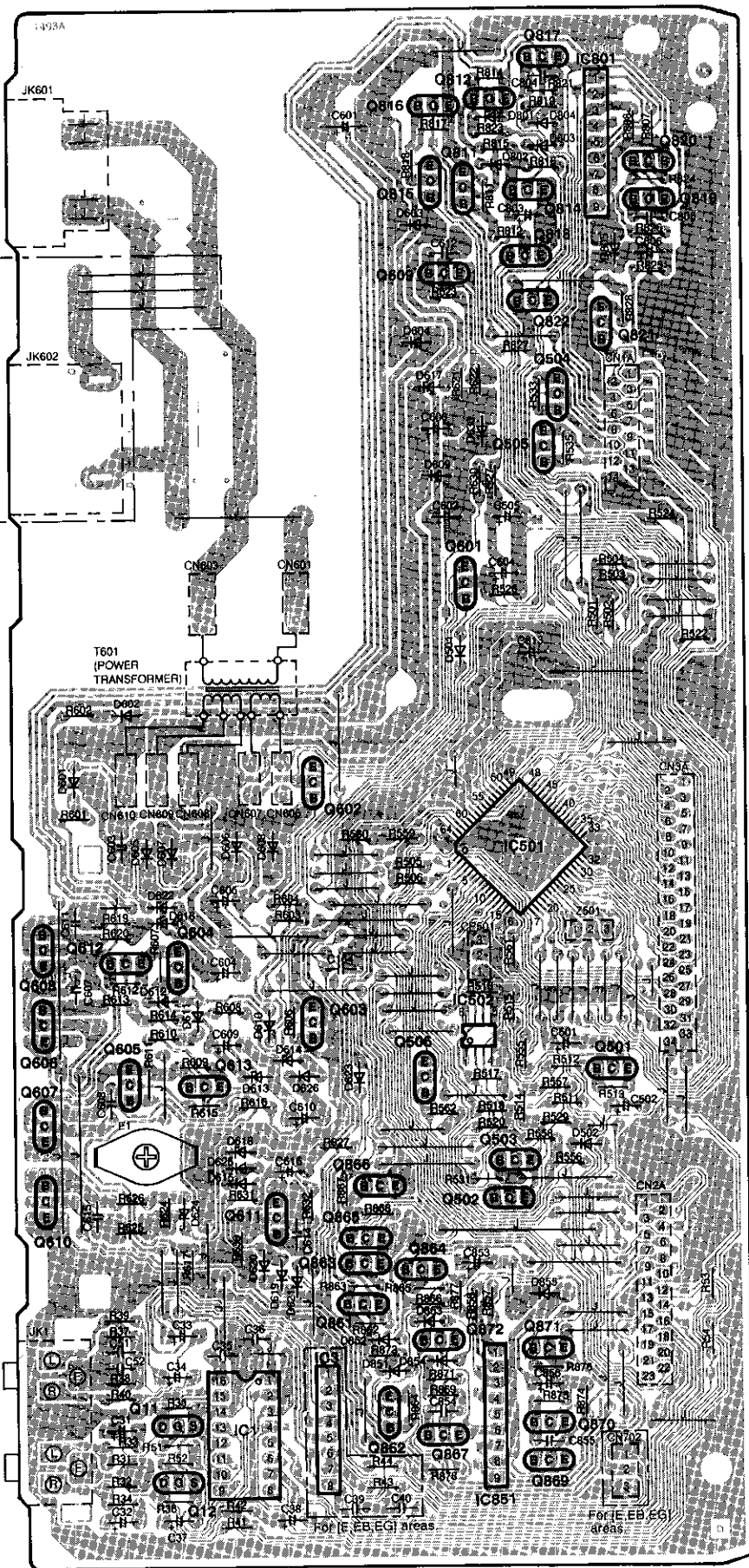


J HEADPHONES JACK P.C.B.
For [E,EB,EG] areas.
(REP2165F-S)

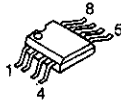
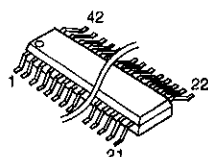
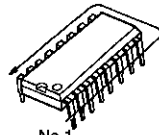
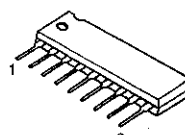
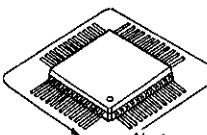
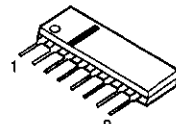
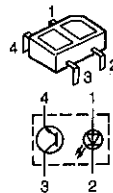
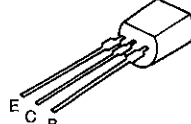
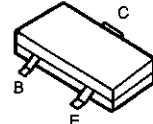
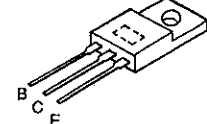
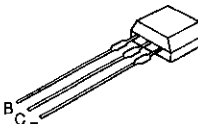
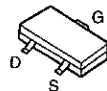
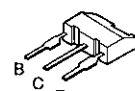
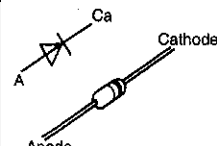
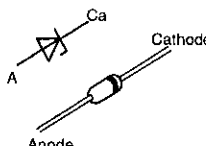
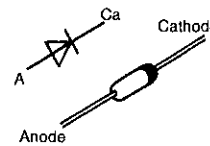
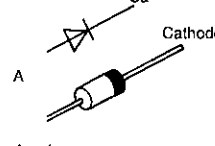
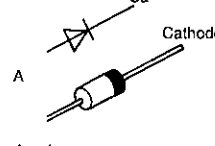
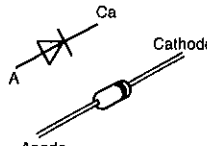
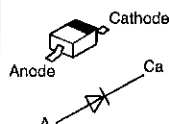
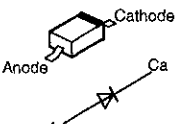
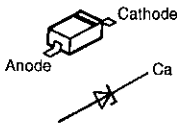
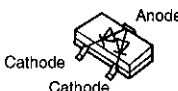
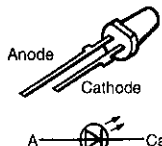


PLAY(OUT)

REC(IN)



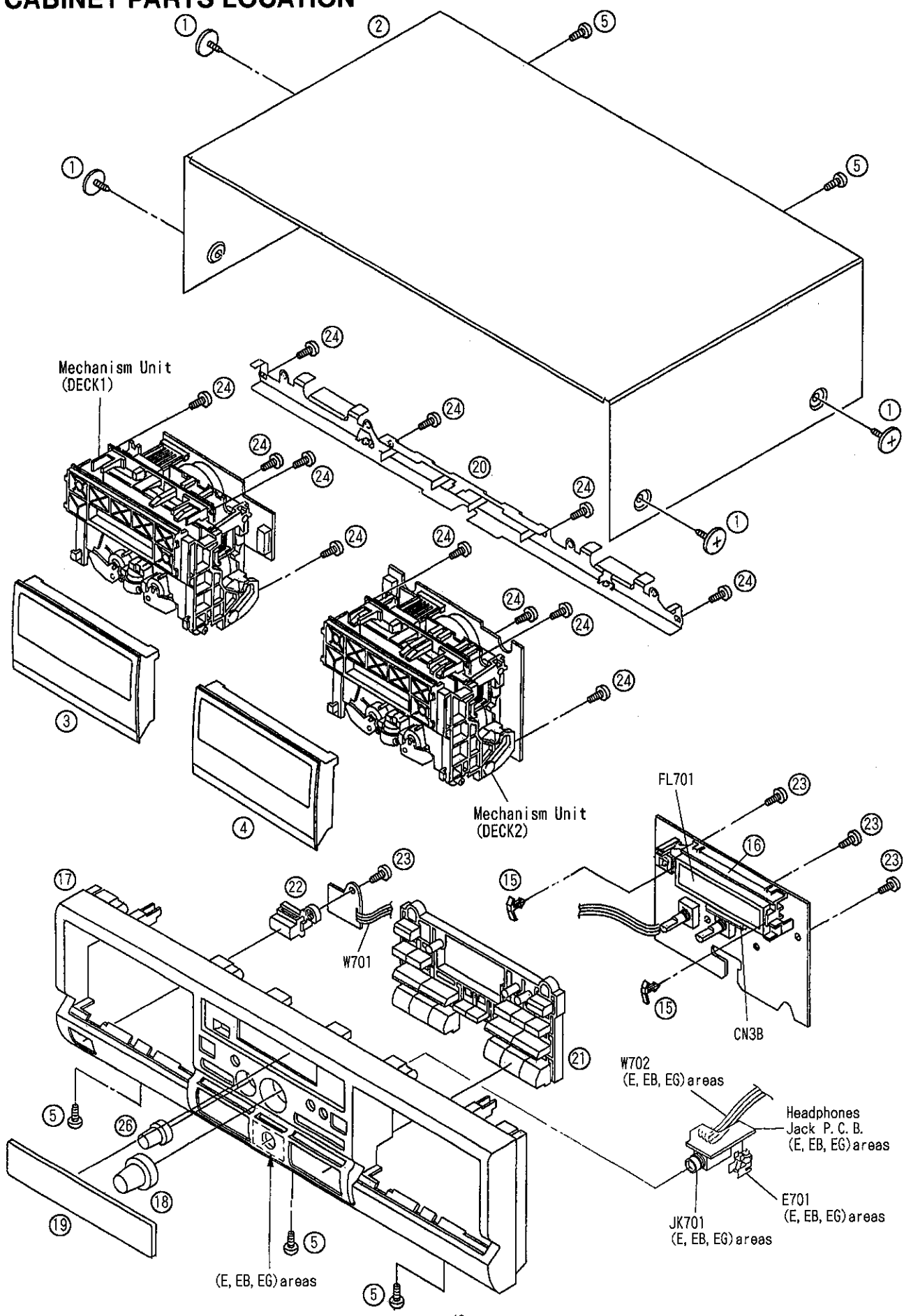
■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

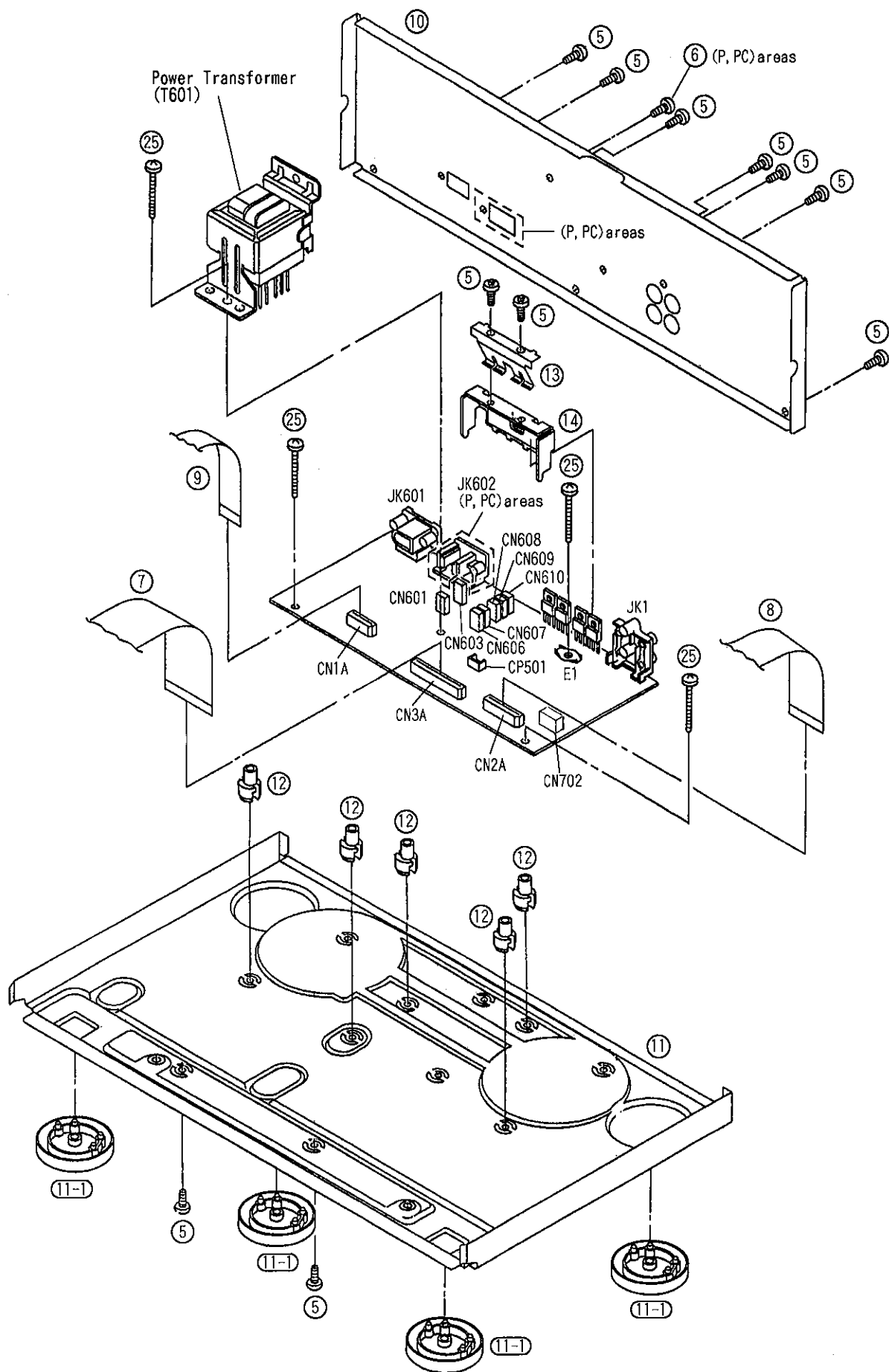
XLJ93LC46AFE BA4560FT1 	AN7356SC-E2 	<table border="1"><tr><td>AN7384N</td><td>16PIN</td></tr><tr><td>UPC1297CA</td><td>18PIN</td></tr></table> 	AN7384N	16PIN	UPC1297CA	18PIN	BA6418N 	<table border="1"><tr><td>AN7357FB-V</td><td>48PIN</td></tr><tr><td>M38122M4251F</td><td>64PIN</td></tr></table> 	AN7357FB-V	48PIN	M38122M4251F	64PIN	M5218AL 
AN7384N	16PIN												
UPC1297CA	18PIN												
AN7357FB-V	48PIN												
M38122M4251F	64PIN												
RVSGP2S24BC 		2SA1309AIRTA 2SC3311AIRTA 2SD1450RSTTA 	KSD471ACYGTA KSB564ACYGTA 	2SB709QRSTX 2SB710AQRSTX 2SD601QRSTX 	2SB1548PQAU 2SD2374PQAU 								
DTA114ESTP DTC114ESTP 	2SJ163PQRTX 2SK1103PQRTX 	2SD874QRSTX 	2SJ164PQRTA 	2SD1862QRTV6 	MA178TA MA700ATA 								
	MTZJ20DTA MTZJ4R7ATA MTZJ5R1BTA MTZJ6R2BTA MTZJ8R2ATA MTZJ8R2CTA MTZJ9R1CTA 	MA29TATA 	RL1N4003N02 	MA165TA RVD1SS133TA 	MA110TX 								
MA111TX MA112TX 	MA8056MTX 	MA152WATX 	LN28RPX 										

1 2 3 4 5

■ CABINET PARTS LOCATION

A
B
C
D
E
F
G





REPLACEMENT PARTS LIST

Notes: * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS				MECHANISM PARTS	
1	RHD30035-K1	SCREW		DECK1			
2	RKM0260-K	CABINET		101	RXF0045	FLYWHEEL (F) ASS'Y	
3	RYF0262A-K	CASSETTE LID (DECK1)		102	RXF0046	FLYWHEEL (R) ASS'Y	
4	RYF0262B-K	CASSETTE LID (DECK2)		103	RML0272	SWITCH LEVER	
5	XTBS3+8JFZ1	SCREW		104	RXQ0265	HEAD BASE ASS'Y	
6	XTBS3+8JFZ1	SCREW	(P, PC)	104-1	RMB0266-1	SPRING, FOR. /REV. SIDE ROD	
7	REZ0787	FFC (34P)		104-2	RXMO036	FOR. /REV. SIDE ROD	
8	REZ0788	FFC (23P)		105	RKG0582-K	DRESSING PLATE	
9	REZ0789	FFC (14P)		106	RFKRSTR777	HEAD BLOCK (P. B.)	
10	RGR0228A-A	REAR PANEL	(P)	106-1	RHD17015	AZIMUTH ADJUSTMENT SCREW	
10	RGR0228A-B	REAR PANEL	(PC)	106-2	RMB0352-1	SPRING, HEAD HOLD	
10	RGR0228B-A1	REAR PANEL	(E, EG)	106-3	RMQ0360A	CONNECTOR HOLDER	
10	RGR0228B-B	REAR PANEL	(EB)	107	RDV108ZA	BELT	
11	RFKJLPG460-K	BOTTOM CHASSIS ASS'Y		108	RDK0019A-1J	MAIN GEAR	
11-1	RKAO053-A	FOOT		109	RMB0261	SPRING, HEAD BASE	
12	RKQ0089	P. C. B. HOLDER		110	RMB0262	SPRING, BRAKE ROD	
13	RMC0285	ANGLE		111	RMB0263	SPRING (F)	
14	RMY0168	HEAT SINK		112	RMB0264	SPRING (R)	
15	RMND195	FL. HOLDER PIECE		113	RUW147ZA	SPRING, TRIGGER LEVER	
16	RMND259	FL. HOLDER		114	RML0267A	TRIGGER LEVER	
17	RFKGSTR474PZ	FRONT PANEL ASS'Y	(P, PC)	115	RML0268A	FOR. /REV. SIDE LEVER	
17	RFKGSTR474EZ	FRONT PANEL ASS'Y	(E, EB, EG)	116	RMM0091A	BREAK ROD	
18	RGW0197-K	KNOB, REC. LEVEL		117	RMS0398-1	MOVING IRON CORE	
19	RKW0326-R	TRANSPARENT PLATE	(P, PC)	118	RSJ0003	SOLENOID	
19	RKW0326B-R	TRANSPARENT PLATE	(E, EB, EG)	119	RUS6092C	SPRING, TAPE PRESSURE	
20	RMA0766	ANGLE		120	RXG0036	REEL GEAR	
21	RGU1023A-K	BUTTON, OPERATION		121	RXL0106	IDLER GEAR	
22	RGU1026-K	BUTTON, POWER		122	RXP0052	PINCH ROLLER (F) ASS'Y	
23	XTBS26+8J	SCREW		122-1	RMB0259	SPRING, PINCH ROLLER (F)	
24	XTB3+10JFZ	SCREW		123	RXP0053	PINCH ROLLER (R) ASS'Y	
25	XTB3+20JFZ	SCREW		123-1	RMB0260	SPRING, PINCH ROLLER (R)	
26	RGW0198-K	KNOB, BALANCE		124	RDG0206A-1	LOADING GEAR	
				125	RDG0209A	INTERMEDIATE GEAR	
				126	REM0036-1	CAPSTAN MOTOR	
				127	REM0043	REEL MOTOR	
				128	RHD26013	SCREW	
				129	RMC0169	SHIELD PLATE	
				130	RMQ0314A	SURASUTO SPACER	
				131	RXG0037	FRICTION GEAR ASS'Y	
				132	RYF0263-K1	CASSETTE HOLDER ASS'Y	
				132-1	RUS757ZA	SPRING, TAPE PRESSURE	
				133	RMQ0430	RIVET	
				134	RMB0269	SPRING, DRIVE LEVER	
				135	RML0270A-1	DRIVE LEVER	
				136	RMQ0312A	DRIVE RACK	
				137	RMB0268	SPRING, HOLDER HOOK	
				138	RML0271A	HOLDER HOOK	

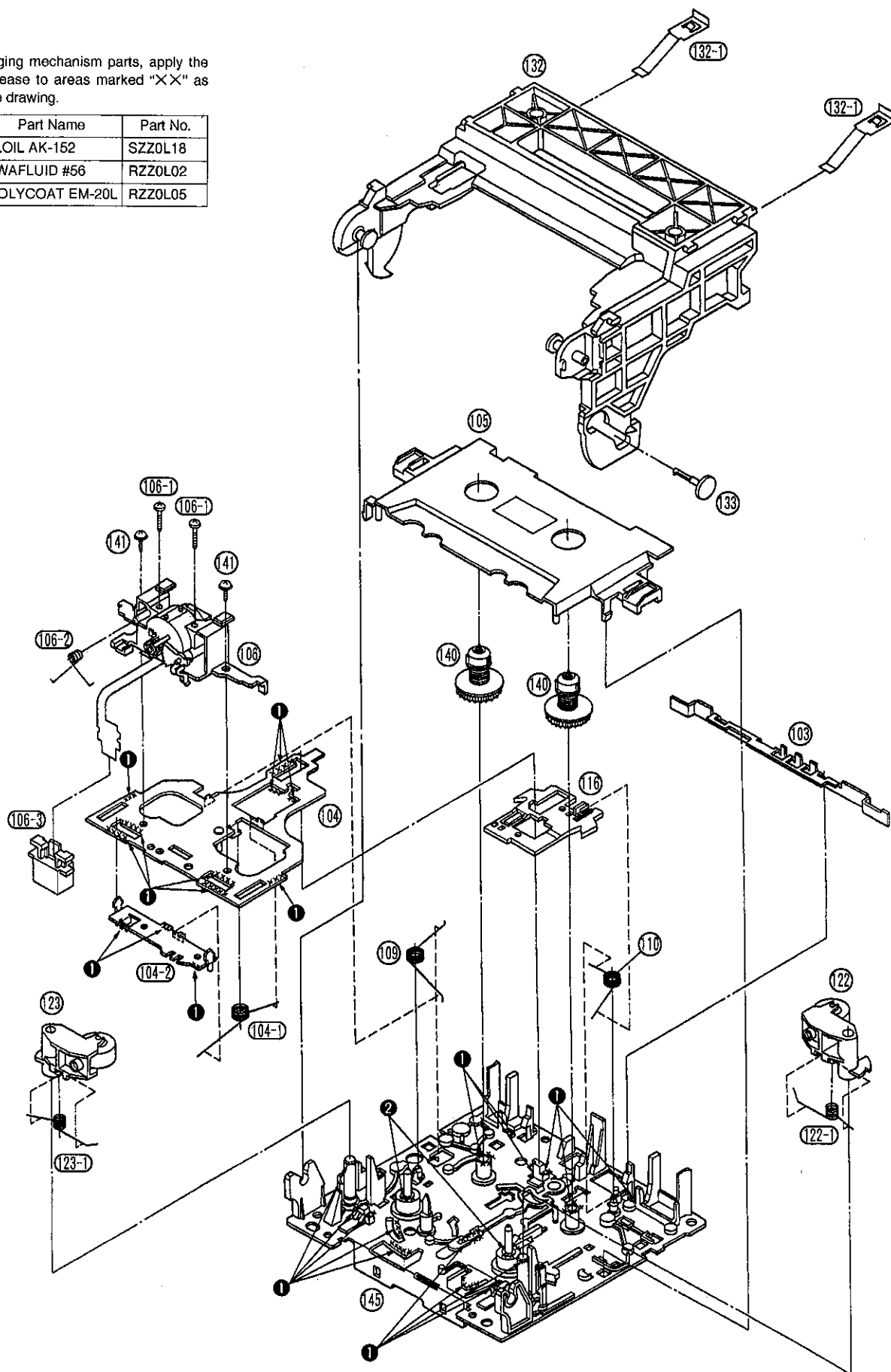
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
139	XTW2+6S	SCREW		232	RYF0263-K1	CASSETTE HOLDER ASS'Y	
140	RXR0018	REEL TABLE		232-1	RUS7572A	SPRING, TAPE PRESSURE	
141	XTW2+5L	SCREW		233	RMQ0430	RIVET	
142	XTW26+12S	SCREW		234	RMB0269	SPRING, DRIVE LEVER	
143	XTW26+6L	SCREW		235	RML0270A-1	DRIVE LEVER	
144	RFKJSCH404AK	SUB CHASSIS ASS'Y		236	RMQ0312A	DRIVE RACK	
145	RFKJSCH404BK	CHASSIS ASS'Y		237	RMB0268	SPRING, HOLDER HOOK	
146	RMQ0368	HOLDER		238	RML0271A	HOLDER HOOK	
149	REX0747	CONNECTOR ASS'Y (3P)		239	XTW2+6S	SCREW	
DECK2				240	RXR0018	REEL TABLE	
201	RXF0040	FLYWHEEL(F) ASS'Y	(E, EB, EG)	241	XTW2+5L	SCREW	
201	RXF0045	FLYWHEEL(F) ASS'Y	(P, PC)	242	XTW26+12S	SCREW	
202	RXF0047	FLYWHEEL(R) ASS'Y	(E, EB, EG)	243	XTW26+6L	SCREW	
202	RXF0046	FLYWHEEL(R) ASS'Y	(P, PC)	244	RFKJSCH404AK	SUB CHASSIS ASS'Y	
203	RML0272	SWITCH LEVER		245	RFKJSCH404BK	CHASSIS ASS'Y	
204	RXQ0265	HEAD BASE ASS'Y		247	RMA0898	ANGLE	
204-1	RMB0266-1	SPRING, FOR /REV. SIDE ROD		248	XYC26+JF6	SCREW	
204-2	RXM0036	FOR /REV. SIDE ROD					
205	RGK0582-K	DRESSING PLATE					
206	RFKRSTR979	HEAD BLOCK(R/P)					
206-1	RHD17015	AZIMUTH ADJUSTMENT SCREW					
206-2	RMB0352-1	SPRING, HEAD HOLD					
206-3	RMQ0360A	CONNECTOR HOLDER					
207	RDV0015	BELT	(E, EB, EG)				
207	RDV108ZA	BELT	(P, PC)				
208	RDK0019A-1J	MAIN GEAR					
209	RMB0261	SPRING, HEAD BASE					
210	RMB0262	SPRING, BRAKE ROD					
211	RMB0263	SPRING(F)					
212	RMB0264	SPRING(R)					
213	RJW147ZA	SPRING, TRIGGER LEVER					
214	RML0267A	TRIGGER LEVER					
215	RML0268A	FOR /REV. SIDE LEVER					
216	RMD0091A	BREAK ROD					
217	RMS0398-1	MOVING IRON CORE					
218	RSJ0003	SOLENOID					
219	RUS6092C	SPRING, TAPE PRESSURE					
220	RXG0036	REEL GEAR					
221	RXL0106	IDLER GEAR					
222	RXP0052	PINCH ROLLER(F) ASS'Y					
222-1	RMB0259	SPRING, PINCH ROLLER(F)					
223	RXP0053	PINCH ROLLER(R) ASS'Y					
223-1	RMB0260	SPRING, PINCH ROLLER(R)					
224	RDG0206A-1	LOADING GEAR					
225	RDG0209A	INTERMEDIATE GEAR					
226	REM0036-1	CAPSTAN MOTOR					
227	REM0043	REEL MOTOR					
228	RHD26013	SCREW					
229	RMC0169	SHIELD PLATE					
230	RMQ0314A	SURASUTO SPACER					
231	RXG0037	FRICTION GEAR ASS'Y					

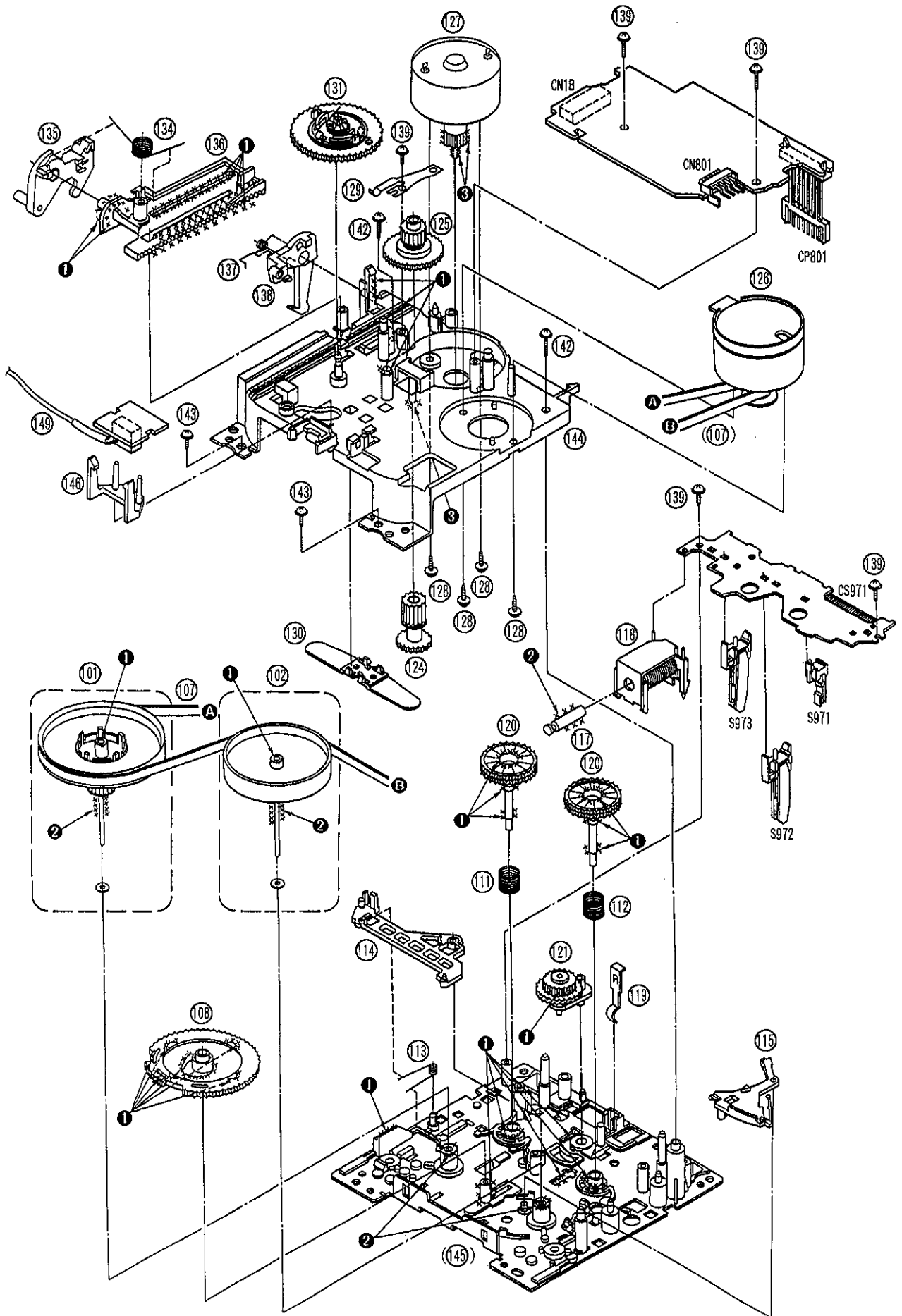
MECHANISM PARTS LOCATION (DECK 1)

Note:

When changing mechanism parts, apply the specified grease to areas marked "X" as shown in the drawing.

Ref. No.	Part Name	Part No.
①	FLOIL AK-152	SZZ0L18
②	SWAFLUID #56	RZZ0L02
③	MOLYCOAT EM-20L	RZZ0L05





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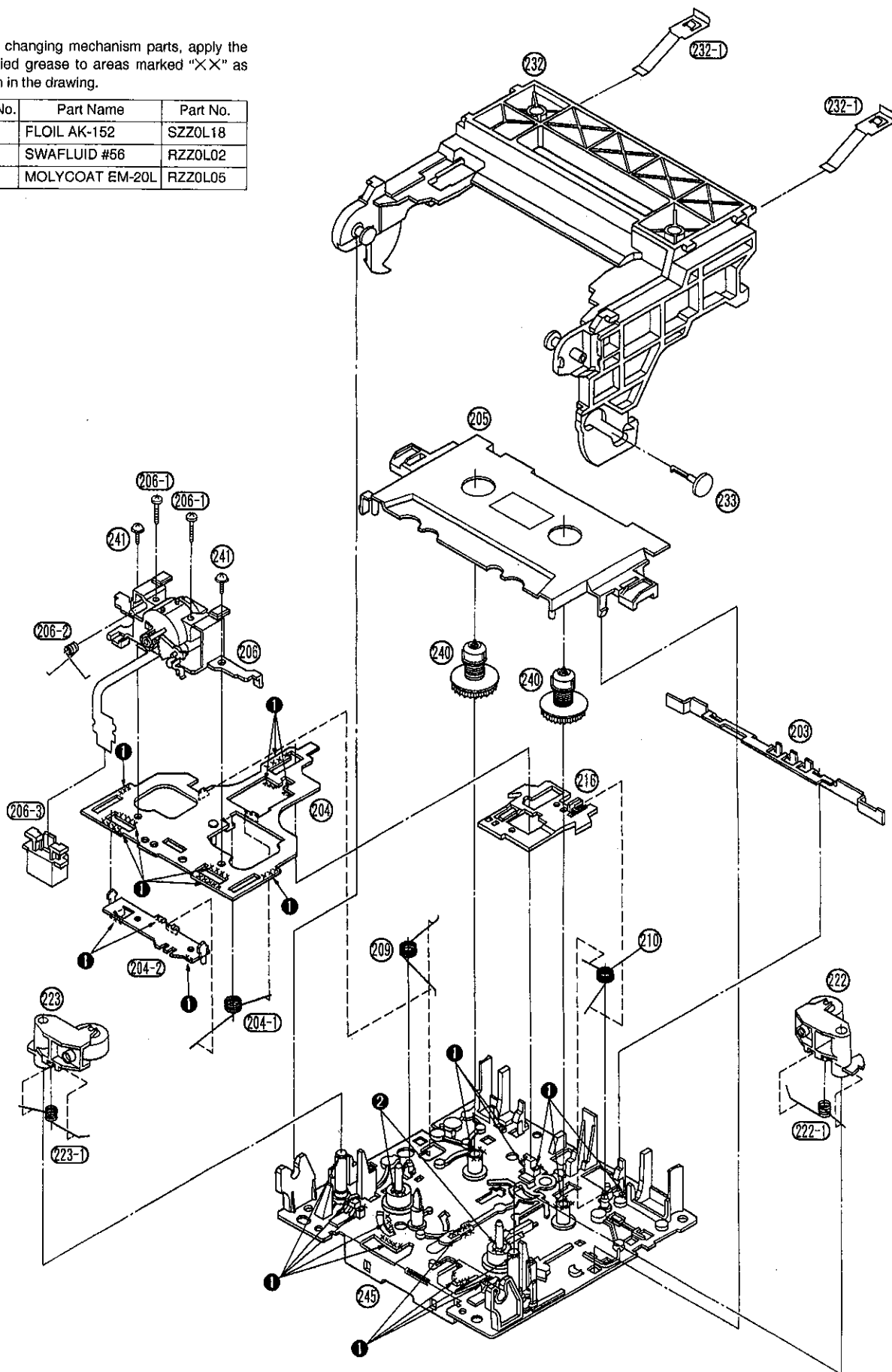
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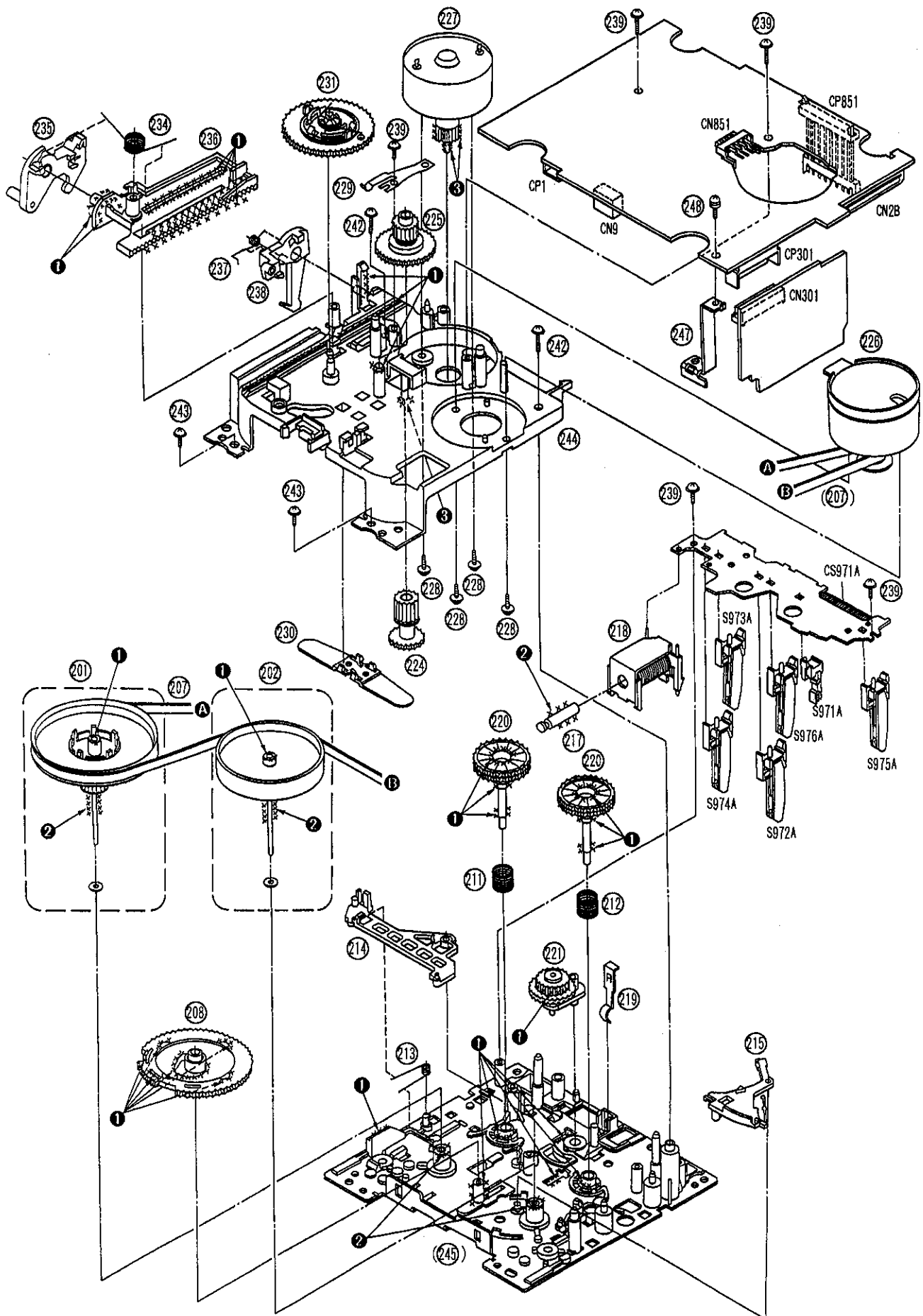
MECHANISM PARTS LOCATION (DECK 2)

Note:

When changing mechanism parts, apply the specified grease to areas marked "X" as shown in the drawing.

Ref. No.	Part Name	Part No.
①	FLOIL AK-152	SZZ0L18
②	SWAFLUID #56	RZZ0L02
③	MOLYCOAT EM-20L	RZZ0L05





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	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R401, 402	ERJ6GEYJ103V	1/10W 10K	R630	ERDS2TJ2R7T	1/4W 2.7
			R406	ERD2FCVG270T	1/4W 27 Δ	R631	ERDS2TJ331	1/4W 330
			R407	ERD2FCVG180T	1/4W 18 Δ	R632	ERDS2TJ101	1/4W 100
R5-7	ERJ6GEYJ225V	1/10W 2.2M	R423	ERJ6GEYJ223V	1/10W 22K	R639	ERD2FCVGJ6R8T	1/4W 6.8 Δ
R9	ERJ6GEYJ101V	1/10W 100	R431	ERJ6GEYJ222V	1/10W 2.2K	R701, 702	ERDS2TJ103T	1/4W 10K (E, EB, EG)
R10-12	ERJ6GEYJ101V	1/10W 100	R434	ERJ6GEYJ272V	1/10W 2.7K	R703	ERDS2TJ181T	1/4W 180 (E, EB, EG)
R13, 14	ERJ6GEYJ470V	1/10W 47	R436	ERJ6GEYJ473V	1/10W 47K	R704	ERDS2TJ153	1/4W 15K
R15, 16	ERJ6GEYJ474V	1/10W 470K	R460, 461	ERJ6GEYJ472V	1/10W 4.7K	R705, 706	ERDS2TJ102	1/4W 1K
R17, 18	ERJ6GEYJ122V	1/10W 1.2K	R501-504	ERDS2TJ473	1/4W 47K	R707, 708	ERDS2TJ562	1/4W 5.6K
R19, 20	ERJ6GEYJ562V	1/10W 5.6K	R505, 506	ERDS2TJ103	1/4W 10K	R711	ERDS2TJ821	1/4W 820
R21, 22	ERJ6GEYJ681V	1/10W 680	R511	ERDS2TJ103	1/4W 10K	R712	ERDS2TJ102	1/4W 1K
R23	ERJ6GEYJ122V	1/10W 1.2K	R512	ERDS2TJ471	1/4W 470	R713	ERDS2TJ122	1/4W 1.2K
R25, 26	ERJ6GEYJ103V	1/10W 10K	R513	ERDS2TJ103	1/4W 10K	R714	ERDS2TJ152	1/4W 1.5K
R28	ERJ6GEYJ272V	1/10W 2.7K	R514, 515	ERDS2TJ223	1/4W 22K	R715	ERDS2TJ182	1/4W 1.8K
R31, 32	ERDS2TJ394	1/4W 390K	R516	ERDS2TJ472	1/4W 4.7K	R716	ERDS2TJ222	1/4W 2.2K
R33, 34	ERDS2TJ393	1/4W 39K	R517	ERDS2TJ223	1/4W 22K	R717	ERDS2TJ332	1/4W 3.3K
R35, 36	ERDS2TJ183T	1/4W 18K	R518	ERDS2TJ103	1/4W 10K	R718	ERDS2TJ472	1/4W 4.7K
R37, 38	ERDS2TJ222	1/4W 2.2K	R520	ERDS2TJ103	1/4W 10K	R719	ERDS2TJ682T	1/4W 6.8K
R39, 40	ERDS2TJ561	1/4W 560	R522	ERDS2TJ103	1/4W 10K	R720	ERDS2TJ123	1/4W 12K
R41, 42	ERDS2TJ103	1/4W 10K	R524	ERDS2TJ103	1/4W 10K	R721	ERDS2TJ223	1/4W 22K
R43, 44	ERDS2TJ101T	1/4W 100 (E, EB, EG)	R526, 527	ERDS2TJ331	1/4W 330	R722	ERDS2TJ683	1/4W 68K
R45	ERJ6GEYJ122V	1/10W 1.2K	R529	ERDS2TJ273	1/4W 27K	R725	ERDS2TJ821	1/4W 820
R51, 52	ERDS2TJ225	1/4W 2.2M	R531	ERDS2TJ273	1/4W 27K	R726	ERDS2TJ102	1/4W 1K
R53, 54	ERDS2TJ102	1/4W 1K	R533	ERDS2TJ273	1/4W 27K	R727	ERDS2TJ122	1/4W 1.2K
R63, 64	ERJ6GEYJ223V	1/10W 22K	R535	ERDS2TJ273	1/4W 27K	R728	ERDS2TJ152	1/4W 1.5K
R70, 71	ERJ6GEYJ273V	1/10W 27K	R555	ERDS2TJ103	1/4W 10K	R729	ERDS2TJ182	1/4W 1.8K
R81, 82	ERJ6GEYJ225V	1/10W 2.2M	R556-558	ERDS2TJ223	1/4W 22K	R730	ERDS2TJ222	1/4W 2.2K
R321	ERJ6GEYJ180V	1/10W 1.0	R559-562	ERDS2TJ103	1/4W 10K	R731	ERDS2TJ332	1/4W 3.3K
R322, 323	ERJ6GEYJ183V	1/10W 18K	R601, 602	ERDS2TJ472	1/4W 4.7K	R732	ERDS2TJ472	1/4W 4.7K
R324, 325	ERJ6GEYJ100	1/10W 10	R603, 604	ERDS2TJ562	1/4W 5.6K	R733	ERDS2TJ682T	1/4W 6.8K
R326	ERJ6GEYJ122V	1/10W 1.2K	R606, 607	ERDS2TJ472	1/4W 4.7K	R734	ERDS2TJ123	1/4W 12K
R327	ERJ6GEYJ102V	1/10W 1K	R608	ERDS2TJ103	1/4W 10K	R735	ERDS2TJ223	1/4W 22K
R328	ERJ6GEYJ561V	1/10W 560	R609	ERDS2TJ1R5T	1/4W 1.5	R801	ERDS2TJ331	1/4W 330
R329	ERJ6GEYJ393V	1/10W 39K	R610	ERDS2TJ472	1/4W 4.7K	R803	ERDS2TJ184T	1/4W 180K
R330	ERJ6GEYJ272V	1/10W 2.7K	R611	ERDS2TJ104	1/4W 100K	R804	ERDS2TJ123	1/4W 12K
R331	ERJ6GEYJ682V	1/10W 6.8K	R612	ERDS2TJ1R5T	1/4W 1.5	R805	ERDS2TJ392T	1/4W 3.9K
R332	ERJ6GEYJ102V	1/10W 1K	R613	ERDS2TJ101	1/4W 100	R806	ERDS2TJ103	1/4W 10K
R333	ERJ6GEYJ123V	1/10W 12K	R614, 615	ERDS2TJ471	1/4W 470	R807, 808	ERDS2TJ103	1/4W 10K
R334-336	ERJ6GEYJ332V	1/10W 3.3K	R616	ERDS2TJ101	1/4W 100	R811	ERDS2TJ223	1/4W 22K
R341, 342	ERJ6GEYJ153V	1/10W 15K	R617	ERDS2TJ102	1/4W 1K	R812	ERDS2TJ102	1/4W 1K
R343, 344	ERJ6GEYJ103V	1/10W 10K	R619	ERDS2TJ391	1/4W 390	R814	ERDS2TJ223	1/4W 22K
R345, 346	ERJ6GEYJ154V	1/10W 150K	R620	ERDS2TJ101	1/4W 100	R815	ERDS2TJ821	1/4W 820
R347, 348	ERJ6GEYJ100	1/10W 10	R621	ERDS2TJ222	1/4W 2.2K	R816	ERDS2TJ472	1/4W 4.7K
R349	ERJ6GEYJ471V	1/10W 470	R622	ERD2FCVG100T	1/4W 10 Δ	R817	ERDS2TJ223	1/4W 22K
R381	ERJ6GEYJ100	1/10W 10	R623	ERDS2TJ101	1/4W 100	R818, 819	ERDS2TJ821	1/4W 820
R382	ERJ6GEYJ221V	1/10W 220	R624	ERDS2TJ391	1/4W 390	R821	ERDS2TJ101	1/4W 100
R383	ERJ6GEYJ5R6V	1/10W 5.6	R625	ERD2FCVJ4R7T	1/4W 4.7 Δ	R823	ERDS2TJ100	1/4W 10
R384	ERJ6GEYJ153V	1/10W 15K	R626	ERDS2TJ101	1/4W 100	R824	ERDS2TJ333	1/4W 33K
R385	ERJ6GEYJ101V	1/10W 100	R627	ERDS2TJ103	1/4W 10K	R825	ERDS2TJ203T	1/4W 20K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R826	ERDS2TJ183T	1/4W 18K	C33, 34	RCE1CKA100BG	16V 10U	C504, 505	RCE1CKA100BG	16V 10U
R827	ERDS2TJ222	1/4W 2.2K	C35, 36	ECBT1E103ZF	25V 0.01U	C601	ECA1EM332B	25V 3300U Δ
R828	ERDS2TJ332	1/4W 3.3K	C37, 38	ECEA1AKA220B	10V 22U	C602	ECA1EM221B	25V 220U
R851	ERJ6GEYJ271V	1/10W 270	C39, 40	ECBT1E103ZF	25V 0.01U (E, EB, EG)	C603	ECKR2H682PE	500V 6800P
R853	ERJ6GEYJ184V	1/10W 180K	C44, 45	ECUV1H121KCN	50V 120P	C604, 605	ECA1EM102B	25V 1000U Δ
R854	ERJ6GEYJ153V	1/10W 15K	C46, 47	ECUV1H332KBN	50V 3300P	C606	RCE1HM221BV	50V 220U Δ
R855	ERJ6GEYJ392V	1/10W 3.9K	C51, 52	ECBT1C332KR5	16V 3300P	C607, 608	ECBT1E103ZF	25V 0.01U
R856	ERJ6GEYJ103V	1/10W 10K	C55	ECUV1H103ZFN	50V 0.01U	C609	ECEA1AKA221B	10V 220U
R857, 858	ERDS2TJ103	1/4W 10K	C61, 62	ECUV1H122KBN	50V 1200P	C610	ECA1AM471B	10V 470U
R862	ERDS2TJ223	1/4W 22K	C81, 82	ECUV1H102KBN	50V 1000P	C611, 612	ECBT1E103ZF	25V 0.01U
R863	ERDS2TJ102	1/4W 1K	C164	ECBT1E103ZF	25V 0.01U	C613	ECA0JM102B	6.3V 1000U
R864	ERDS2TJ223	1/4W 22K	C303	ECQP1153JZ	100V 0.015U	C614, 615	ECBT1E103ZF	25V 0.01U
R865	ERDS2TJ821	1/4W 820	C304	ECUV1H392KBN	50V 3900P	C616	RCE1AKA101BG	10V 100U
R866	ERDS2TJ472	1/4W 4.7K	C305	ECUV1H222KBN	50V 2200P	C701	RCE1CKA100BG	16V 10U
R867	ERDS2TJ223	1/4W 22K	C306	ECUV1H682KBN	50V 6800P	C702	ECBT1E103ZF	25V 0.01U
R868, 869	ERDS2TJ821	1/4W 820	C307	ECUV1H222KBN	50V 2200P	C703-705	ECBT1E103ZF	25V 0.01U (E, EB, EG)
R871	ERDS2TJ101	1/4W 100	C308	RCE1CKS100IV	16V 10U	C711, 712	ECEA1HKA010B	50V 1U
R873	ERDS2TJ100	1/4W 10	C309, 310	ECUV1H103ZFN	50V 0.01U	C801	ECBT1E223ZF	25V 0.022U
R874	ERDS2TJ333	1/4W 33K	C311, 312	ECUVNE104ZFN	25V 0.1U	C803	RCE1HKAR47BG	50V 0.47U
R875	ERDS2TJ183T	1/4W 18K	C341, 342	ECUV1H122KBN	50V 1200P	C804, 805	ECBT1E103ZF	25V 0.01U
R876	ERDS2TJ203T	1/4W 20K	C343, 344	ECUV1H103KBN	50V 0.01U	C806	ECEA1AKA220B	10V 22U
R877	ERDS2TJ222	1/4W 2.2K	C345, 346	ECUV1E473KBN	25V 0.047U	C851	ECUV1H223ZFN	50V 0.022U
R878	ERDS2TJ332	1/4W 3.3K	C347, 348	ECUV1H121KCN	50V 120P	C853	RCE1HKAR47BG	50V 0.47U
R971	ERDS2TJ221	1/4W 220	C349, 350	ECKR2H821KB5	500V 820P	C854, 855	ECBT1E103ZF	25V 0.01U
R971A	ERDS2TJ221	1/4W 220	C351, 352	ECUV1E473ZFN	25V 0.047U	C856	ECEA1AKA220B	10V 22U
R973	ERDS2TJ393	1/4W 39K	C353, 354	ECUV1H220KCN	50V 22P			
R973A	ERDS2TJ393	1/4W 39K	C355	ECUV1H103ZFN	50V 0.01U			
R974	ERDS2TJ393	1/4W 39K	C356	ECEA1AKS470	10V 47U			
R974A	ERDS2TJ393	1/4W 39K	C357, 358	ECUV1E473ZFN	25V 0.047U			
			C360, 361	ECUV1E223KBN	25V 0.022U			
		CHIP JUMPERS	C362	RCE1CKA100BG	16V 10U			
			C401, 402	ECEA1ASN100I	10V 10U			
RJ10-39	ERJ6GEYOR00V	CHIP JUMPER	C403, 404	ECUV1H152KBN	50V 1500P			
			C405, 406	ECUVNC474KBM	16V 0.47U			
		CAPACITORS	C407, 408	ECUV1H152KBN	50V 1500P			
			C409, 410	ECUVNC474KBM	16V 0.47U			
C1, 2	ECUV1H471KBN	50V 470P	C411, 412	ECEA1HKS2R2I	50V 2.2U			
C3, 4	ECUV1H561KBN	50V 560P	C413	ECUVNC474KBM	16V 0.47U			
C5, 6	ECUV1H102KBN	50V 1000P	C414	ECUVNE104ZFN	25V 0.1U			
C7, 8	ECUVNE104ZFN	25V 0.1U	C415	ECUV1H272KBN	50V 2700P			
C9	RCE0GKS221IG	4V 220U	C416	ECUV1H392KBN	50V 3900P			
C10	RCE0GKS221IG	4V 220U	C417	ECUVNE104ZFN	25V 0.1U			
C13, 14	ECU1IC682JB5	16V 6800P	C418	ECUVNC105ZFN	16V 1U			
C15, 16	ECUV1E223KBN	25V 0.022U	C419	RCE1CKS100IV	16V 10U			
C17, 18	RCE1CKS100IV	16V 10U	C422	ECEA1ASN100I	10V 10U			
C19, 20	ECUVNC474KBM	16V 0.47U	C423, 424	RCE1ARC471BG	10V 470U			
C21, 22	ECEA1ASN100I	10V 10U	C431	ECUV1C474ZFN	16V 0.47U			
C23, 24	RCE1CKS100IV	16V 10U	C432	ECUV1H152KBN	50V 1500P			
C25, 26	ECKR2H151KB5	500V 150P	C450-452	ECUV1H101KCN	50V 100P			
C27, 28	ECUV1H561KBN	50V 560P	C461	ECUVNC225ZFM	16V 2.2U			
C29, 30	ECUVNE104ZFN	25V 0.1U	C501	ECEA1HKA010B	50V 1U			
C31, 32	ECEA1HKA010B	50V 1U	C502	ECEA1EKA4R7B	25V 4.7U			

REPLACEMENT PARTS LIST

Notes: * Important safety notice:

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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 parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)

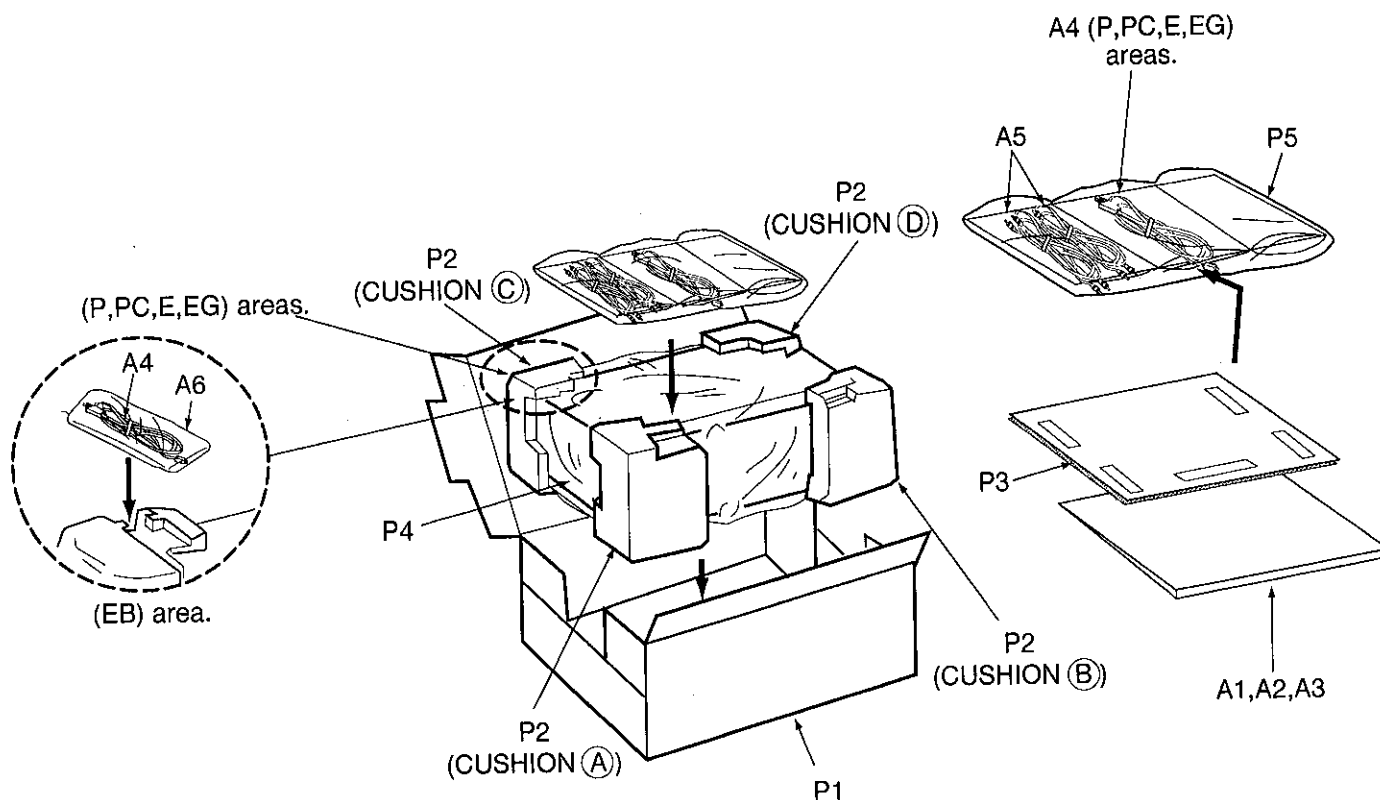
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT (S)		Q811, 812	KSB564ACYGTA	TRANSISTOR	
				Q813-815	DTC114ESTP	TRANSISTOR	
				Q816	KSB564ACYGTA	TRANSISTOR	
IC1	AN7384N	ELECTRIC VOLUME		Q817	2SD1862QRTV6	TRANSISTOR	
IC2	AN7356SC-E2	PLAYBACK/REC AMP (DECK2)		Q819	2SA1309AIRTA	TRANSISTOR	
IC3	M5218AL	HEADPHONES AMP	(E, EB, EG)	Q820	KSB564ACYGTA	TRANSISTOR	
IC4	SV1BA4560FT1	E. CURRENT ADJ. CONT. (DECK2)		Q821	DTA114ESTP	TRANSISTOR	
IC302	UPC1297CA	DOLBY HX PRO (DECK2)		Q822	2SC3311AIRTA	TRANSISTOR	
IC401	AN7357FB-V	R/P AMP, DOLBY B/C NR		Q851	2SB709QRSTX	TRANSISTOR (DECK2)	
IC501	M38122M4251F	MICROCOMPUTER		Q861, 862	KSB564ACYGTA	TRANSISTOR	
IC502	XLJ93LC46AFE	EEPROM		Q863-865	DTC114ESTP	TRANSISTOR	
IC801	BA6418N	REEL MOTOR DRIVE (DECK1)		Q866	KSB564ACYGTA	TRANSISTOR	
IC851	BA6418N	REEL MOTOR DRIVE (DECK2)		Q867	2SD1862QRTV6	TRANSISTOR	
IC971	RVSGP2S24BC	PHOTO INTERRUPTER (DECK1)		Q869	KSB564ACYGTA	TRANSISTOR	
IC971A	RVSGP2S24BC	PHOTO INTERRUPTER (DECK2)		Q870	2SA1309AIRTA	TRANSISTOR	
IC972	RVSGP2S24BC	PHOTO INTERRUPTER (DECK1)		Q871	DTA114ESTP	TRANSISTOR	
IC972A	RVSGP2S24BC	PHOTO INTERRUPTER (DECK2)		Q872	2SC3311AIRTA	TRANSISTOR	
		TRANSISTOR (S)				DIODE (S)	
Q1, 2	2SJ163PQRTX	TRANSISTOR (DECK2)		D1, 2	MA111TX	DIODE (DECK2)	
Q11, 12	2SJ164PQRTA	TRANSISTOR		D3	MA152WATX	DIODE (DECK2)	
Q81, 82	2SK1103PQRTX	TRANSISTOR (DECK2)		D301, 302	MA8056MTX	DIODE (DECK2)	
Q303, 304	2SD874QRSTX	TRANSISTOR (DECK2)		D303	MA110TX	DIODE (DECK2)	
Q305	KSD471ACYGTA	TRANSISTOR (DECK2)		D312, 313	MA112TX	DIODE (DECK2)	
Q306	2SB710AQRSTX	TRANSISTOR (DECK2)		D314	MA110TX	DIODE (DECK2)	
Q307	KSB564ACYGTA	TRANSISTOR (DECK2)		D320	MA152WATX	DIODE (DECK2)	
Q381	2SD601QRSTX	TRANSISTOR (DECK2)		D501, 502	MA165	DIODE	
Q501-505	2SC3311AIRTA	TRANSISTOR		D601, 602	MA165	DIODE	Δ
Q506	DTC114ESTP	TRANSISTOR		D603-609	RL1N4003N02	DIODE	Δ
Q601, 602	2SD1450RTA	TRANSISTOR		D610-612	MA165	DIODE	
Q603	DTC114ESTP	TRANSISTOR		D613	MTZJ8R2CTA	DIODE	Δ
Q604	2SA1309AIRTA	TRANSISTOR	Δ	D614	MTZJ6R2BTA	DIODE	Δ
Q605	2SC3311AIRTA	TRANSISTOR	Δ	D615	MA165	DIODE	
Q606	2SD2374PQAU	TRANSISTOR	Δ	D616	MTZJ9R1CTA	DIODE	Δ
Q607	2SB1548PQAU	TRANSISTOR	Δ	D617	MTZJ20DTA	DIODE	Δ
Q608	2SD2374PQAU	TRANSISTOR	Δ	D618	MTZJ5R1BTA	DIODE	Δ
Q609	KSB564ACYGTA	TRANSISTOR	Δ	D619	MA178TA	DIODE	
Q610	2SB1548PQAU	TRANSISTOR	Δ	D620	RL1N4003N02	DIODE	
Q611	KSD471ACYGTA	TRANSISTOR	Δ	D621	MA165	DIODE	
Q612	2SA1309AIRTA	TRANSISTOR	Δ	D622	MTZJ5R1BTA	DIODE	Δ
Q613	2SC3311AIRTA	TRANSISTOR	Δ	D623	MA165	DIODE	
Q701	DTC114ESTP	TRANSISTOR	(E, EB, EG)	D624	MTZJ8R2ATA	DIODE	Δ
Q702	2SC3311AIRTA	TRANSISTOR	(E, EB, EG)	D625	MA165	DIODE	
Q703	2SC3311AIRTA	TRANSISTOR		D626	MA29TATA	DIODE	
Q801	2SA1309AIRTA	TRANSISTOR (DECK1)		D630	RL1N4003N02	DIODE	Δ

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
D701	LN28RPX	L. E. D.	(E, EB, EG)	S706	EVQ21405R	REW. SEARCH (DECK1)	
D801	MA178TA	DIODE		S707	EVQ21405R	OPEN/CLOSE (DECK1)	
D802	MA700	DIODE		S708	EVQ21405R	DLOBY NR(B, C)	
D803	MA165	DIODE		S709	EVQ21405R	REVERSE MODE	
D804	MTZJ4R7ATA	DIODE		S710	EVQ21405R	SYNCHRO START	
D805	RL1N4003N02	DIODE		S711	EVQ21405R	SPEED (X1, X2)	
D851	MA178TA	DIODE		S712	EVQ21405R	COUNTER RESET (DECK2)	
D852	MA700	DIODE		S713	EVQ21405R	ATC	
D853	MA165	DIODE		S714	EVQ21405R	STOP (DECK2)	
D854	MTZJ4R7ATA	DIODE		S715	EVQ21405R	F. -SIDE PLAYBACK (DECK2)	
D855	RL1N4003N02	DIODE		S716	EVQ21405R	R. -SIDE PLAYBACK (DECK2)	
D971	RVD1SS133TA	DIODE (DECK1)		S717	EVQ21405R	F. F. SEARCH (DECK2)	
D971A	RVD1SS133TA	DIODE (DECK2)		S718	EVQ21405R	REW. SEARCH (DECK2)	
				S719	EVQ21405R	OPEN/CLOSE (DECK2)	
		VARIABLE RESISTOR(S)		S720	EVQ21405R	REC (DECK2)	
				S721	EVQ21405R	PAUSE (DECK2)	
VR701	EVJ02FFA7B15	REC LEVEL CONTROL		S722	EVQ21405R	AUTO REC MUTE (DECK2)	
VR702	EVJ02SFA7G15	BALANCE CONTROL		S723	EVQ21405R	COUNTER RESET (DECK1)	
VR801	EVNDCAA03B53	TAPE SPEED ADJ. (DECK1:X2)		S801	RSIIIA024-U	OPEN DETECTION (DECK1)	
VR802	EVNDCAA03B53	TAPE SPEED ADJ. (DECK1:X1)		S802	RSIIIA024-U	CLOSE DETECTION (DECK1)	
VR852	EVNDCAA03B53	TAPE SPEED ADJ. (DECK2:X1)		S851	RSIIIA024-U	OPEN DETECTION (DECK2)	
				S852	RSIIIA024-U	CLOSE DETECTION (DECK2)	
		COIL (S)		S971	RSIIIA018-1U	MODE (DECK1)	
				S971A	RSIIIA018-1U	MODE (DECK2)	
L1, 2	RLQX303JT-K	COIL (DECK2)		S972	RSIIIA019-2U	HALF (DECK1)	
L301, 302	SL09B1-Z	COIL (HX PRO ADJ.) (DECK2)		S972A	RSIIIA019-2U	HALF (DECK2)	
L303	SL09B4-K	COIL (DECK2)		S973	RSIIIA019-2U	ATS (DECK1)	
				S973A	RSIIIA019-2U	ATS (DECK2)	
		TRANSFORMER (S)		S974A	RSIIIA019-2U	R. REC. INH. (DECK2)	
				S975A	RSIIIA019-2U	F. REC. INH. (DECK2)	
T601	RTP1K4B026-V	POWER TRANSFORMER	(E, EB, EG) △	S976A	RSIIIA019-2U	ATS (DECK2)	
T601	RTP1K4C022-V	POWER TRANSFORMER	(P, PC) △				
						CONNECTOR(S) AND SOCKET(S)	
		OSC. (S) AND COMBINATION(S)					
				CN1A	RJS1A6814	CONNECTOR (14P)	
Z501	EFOEC6004T4	CERAMIC OSCILLATOR (6MHz)		CN1B	RJS1A6714-D	CONNECTOR (14P) (DECK1)	
Z701	RCDHC-278N	REMOTE SENSOR		CN2A	RJS1A6823	CONNECTOR (23P)	
Z801	EXBF7L355SYV	COMBINATION PARTS (DECK1)		CN2B	RJS1A6723	CONNECTOR (23P) (DECK2)	
Z851	EXBF7L355SYV	COMBINATION PARTS (DECK2)		CN3A	RJS1A6834	CONNECTOR (34P)	
Z971A	EXBF6L306SYV	COMBINATION PARTS (DECK2)		CN3B	RJS1A6234-1	CONNECTOR (34P)	
				CN9	RJS2A0205-2S	CONNECTOR (5P) (DECK2)	
		DISPLAY TUBE (S)		CN301	RJU057W010	SOCKET (10P) (DECK2)	
				CN601	RJS1A1101T1	CONNECTOR (1P)	
FL701	RSL0176-F	DISPLAY TUBE		CN603	RJS1A1101T1	CONNECTOR (1P)	
				CN606-610	RJS1A1101T1	CONNECTOR (1P)	
		SWITCH (ES)		CN702	RJS1A1703	CONNECTOR (3P)	(E, EB, EG)
				CN801	RJR0113	MOTOR CONNECTOR (4P) (DECK1)	
S701	EVQ21405R	POWER		CN851	RJR0113	MOTOR CONNECTOR (4P) (DECK2)	
S702	EVQ21405R	STOP (DECK1)		CP1	RJP3G17ZA	CONNECTOR (3P) (DECK2)	
S703	EVQ21405R	F. -SIDE PLAYBACK (DECK1)		CP301	RJT057W010-1	CONNECTOR (10P) (DECK2)	
S704	EVQ21405R	R. -SIDE PLAYBACK (DECK1)		CP501	RJT029W03VT	CONNECTOR (3P)	
S705	EVQ21405R	F. F. SEARCH (DECK1)		CP801	RJT071H09A	CONNECTOR (9P) (DECK1)	

[illegible]

■ PACKAGING



<CUSHION (A), (B), (C), (D) Part No.: RPN0664-1(P,PC,E,EG), RPN0665 (EB)>

REPLACEMENT PARTS LIST

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 * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
 Parts without these indications can be used for all areas.
 * The "(SF)" mark denotes the standard part.
 * [V] indicates in Remarks columns parts that are supplied by Video Recoder Division.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL		A3	RQCB0391	SERVICENTER LIST	(P)
				A3	RQCB0169	SERVICENTER LIST	(E, EB, EG)
				A3	SQX9131	SERVICENTER LIST	(PC)
P1	RPG1913	PACKING CASE	(P, PC)	A4	RJA0019-2K	AC POWER SUPPLY CORD	(E, EG) Δ (SF)
P1	RPG1914	PACKING CASE	(E, EG)	A4	SJA172	AC POWER SUPPLY CORD	(P, PC) Δ (SF)
P1	RPG1915	PACKING CASE	(EB)	A4	VJA0733	AC POWER SUPPLY CORD	(EB) Δ (SF) (V)
P2	RPN0664-1	CUSHION	(P, PC, E, EG)	A5	SJP2249-3	STEREO CONNECTION CABLE	
P2	RPN0665	CUSHION	(EB)			<GREASE OR JIG/TOOL>	
P3	RPQ0164	ACCESSORIES PAD				TEST TAPE	
P4	XZB50X65A02	PROTECTION COVER (THIS UNIT)					
P5	RPF0139	PROTECTION BAG (F. B., ACC.)		SA1	QZZCFM	HEAD AZIMUTH ADJ. CHECK	
P6	RPH0032	MIRROR SHEET	(EB)	SA2	QZZCWAT	TAPE SPEED ADJ. CHECK	
		ACCESSORIES		SA3	QZZCRA	BLANK TAPE (Normal Position)	
				SA4	QZZCRX1	BLANK TAPE (Cr02 Position)	
A1	RFKSSTR373PC	INSTRUCTION MANUAL	(PC)	SA5	QZZCRZ5	BLANK TAPE (Metal Position)	
A1	RFKSSTR373E	INSTRUCTION MANUAL	(E)			GREASE	
A1	RFKSSTR373EG	INSTRUCTION MANUAL	(EG)				
A1	RQT2233-P	INSTRUCTION MANUAL	(P)	SA6	SZZ0L18	FLOIL AK-152	
A1	RQT2237-B	INSTRUCTION MANUAL	(EB)	SA7	RZZ0L02	SWAFLUID #56	
A2	RQA0114	WARRANTY CARD	(P)	SA8	RZZ0L05	MOLYCOAT EM-20L	
A2	RQA0117	WARRANTY CARD	(E, EB, EG)				
A2	SQX7183	WARRANTY CARD	(PC)				