

Service Manual

Amplifier

SU-X820

Color

(K) Black Type

Area

Color	Areas
(K)	[EH] Holland
(K)	[EF] France
(K)	[Ei] Italy
(K)	[E] Continental Europe

Please use this manual together with the service manual for Model No. SU-X820, Order No. HAD8705150C2.

Note: Mentioned in this service manual are the differences from Model No. SU-X820 for the destination [EK] area.

CHANGES

REPLACEMENT PARTS LIST

Notes: * Mentioned in this parts list are only those different from Model No. SU-X820 for the destination [EK] area.
Other parts are the same as for Model No. SU-X820 for the destination [EK] area.

* Important safety notice:

Components identified by $\triangle$ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

Ref. No.	Change of Part No.		Part Name & Description	Remarks
	[EK]	➡ [EH, EF, Ei, E]		
FUSES				
F3 ⚠	_____	XBA2C20TBO	FUSE, 250V, T2A	Addition
COILS AND TRANSFORMERS				
T1 ⚠	SLTF5M12-W	SLTF5M13-W	POWER TRANSFORMER	
CABINET AND CHASSIS				
55	SGPF7A	SGPF7-3A [EH, EF, Ei]	REAR PANEL	
55	SGPF7A	SGPF7-3C [E]	REAR PANEL	
62 ⚠	SJS9332B	SJS9225	AC OUTLET	
63	SUWF17-3	SUWF17-2	BRACKET	
64	SJS9332A	_____	AC OUTLET COVER	Deletion
66 ⚠	SJA189	SFDAB31E01	AC POWER CORD	
CASSETTE DECK				
328	MMI6H2LWSC	MMA6D2LWFSX	DC MOTOR	
ACCESSORIES				
A1	SQFF12	SQFF14 [EH, E]	INSTRUCTION BOOK	
A1	SQFF12	SQFF19 [Ei]	INSTRUCTION BOOK	
A1	SQFF12	SQFF21 [EF]	INSTRUCTION BOOK	
PACKINGS				
P1	SPGF10	SPGF13 [EF]	CARTON BOX	

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Printed in Japan
S870602600MT

Service Manual

Stereo Double Cassette Amplifier

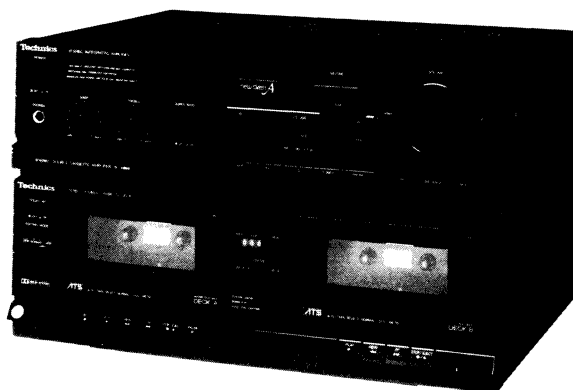


Amplifier

SU-X820

Color

(K)Black Type



Area

Color	Area
(K)	(EB)Belgium.
(K)	(EK)United Kingdom.

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

40 Hz ~ 16 kHz continuous power output both channels driven	2 x 28 W (THD 1%, 8Ω)
1 kHz continuous power output both channels driven	2 x 30 W (THD 1%, 8Ω)
Total harmonic distortion half power at 1 kHz	0.009% (8Ω)
Power bandwidth both channels driven, -3dB	20 Hz ~ 40 kHz (8Ω)
Damping factor	22 (8Ω)
Input sensitivity and impedance	
PHONO	2.5mV/47 kΩ
TUNER	200mV/47 kΩ
CD	250mV/4.8 kΩ
AUX	200mV/22 kΩ
Frequency response	
PHONO	RIAA standard curve
	30 Hz ~ 15 kHz, +0.8 dB, -0.8 dB
TUNER	18 Hz ~ 50 kHz (-3 dB)
CD	18 Hz ~ 50 kHz (-3 dB)
AUX	18 Hz ~ 50 kHz (-3 dB)
Tone controls	
BASS	50 Hz, +10 dB ~ -10 dB
TREBLE	12.5 kHz, +10 dB ~ -10 dB
SUPER BASS	80 Hz, +6 dB
Load impedance	8 Ω ~ 16 Ω

■ CASSETTE DECK SECTION

Deck system	Auto stop double cassette system
Track system	4-track, 2-channel
Heads	
PLAY (DECK B)	Solid Permalloy head
REC/PLAY (DECK A)	Solid Permalloy head
Erasing	Double-gap ferrite head
Motors	DC servo motor

Recording system

Erasing system

Tape speed

Frequency response

CrO₂

NORMAL

METAL

S/N (CrO₂ type tape)

DOLBY NR in

DOLBY NR out

Wow and flutter

Fast Forward and Rewind Time

Approx. 150 seconds with C-60 cassette tape

■ GENERAL

Power consumption

Power supply

For United Kingdom

For Belgium

Dimensions (W x H x D)

Weight

AC bias, 100 kHz

AC erase, 100 kHz

4.8 cm/sec. (1-7/8 ips)

30 Hz ~ 16 kHz (DIN)

40 Hz ~ 15 kHz, +3 dB ~ -6dB

30 Hz ~ 15 kHz (DIN)

40 Hz ~ 14 kHz, +3 dB ~ -6dB

30 Hz ~ 17 kHz (DIN)

40 Hz ~ 16 kHz, +3 dB ~ -6dB

66 dB (CCIR)

56 dB (A-WTD)

0.1% (WRMS)

± 0.2% (DIN-WTD)

155 W

AC 50 Hz, 240 V

AC 50 Hz, 220 V

360 x 229 x 292 mm

5.9 kg

Notes:

1. Specifications are subject to change without notice.

Weight and dimensions are approximate.

2. Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

3. Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"Dolby" and the double-D system are trade marks of Dolby Laboratories Licensing Corporation.

Technics

Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Central Osaka Japan

■ LOCATION OF CONTROLS AND FUNCTIONS

Amplifier section

Volume/balance level indicators (VOLUME/BALANCE)

These indicators usually show the volume level; when the balance control is pressed, however, the position of balance level is displayed for five seconds, after which the display returns again to indication of the volume level.

When the muting button is pressed, the indicator corresponding to the maximum displayed volume level point will flash.

Super-bass tone control (SUPER BASS)

The low-range sound can be reinforced when this button is pressed.

Tone controls (BASS/TREBLE)

The bass control is for the low-frequency sound range, and the treble control is for the high-frequency sound range.

Input selectors (INPUT SELECTOR)

These selectors are used for selection of the program source (tape, disc, or radio broadcast).

Balance controls (BALANCE)

While listening to an AM broadcast or a monaural FM broadcast, balance the sound so that it seems to be heard from the center, between the speakers.

If both ("LEFT" and "RIGHT") balance controls are pressed at the same time, balance will be set to the center position automatically.

Volume control (VOLUME)

Muting button (MUTING)

Press this button to temporarily reduce the volume level. The volume level is attenuated by 20 dB. (approx. 1/10)

Power switch (POWER)

Headphones jack (PHONES)

Cassette deck section

Dolby noise reduction switch (DOLBY NR)

Editing mode selector (EDITING MODE)

When using "DECK A"

Cassette holder

Record button (REC/●)

Press this button to record.

Playback button (PLAY/▶)

Rewind button (REW/◀◀)

Fast-forward button (FF/▶▶)

Stop/eject button (STOP/EJECT/■/▲)

Pause button (PAUSE/||)

Press this button to temporarily stop tape movement.

"DECK A" counter/reset button (DECK A COUNTER/RESET)

This indicates the amount of tape travel of "DECK A". When this button is pressed, the readout will be reset to "000".

When using "DECK B"

Playback button (PLAY/▶)

Press this button to playback a tape.

Rewind button (REW/◀◀)

Press this button to rewind the tape rapidly.

Fast-forward button (FF/▶▶)

Press this button to advance the tape rapidly.

Stop/eject button (STOP/EJECT/■/▲)

Press this button to stop the tape and to open the cassette holder.

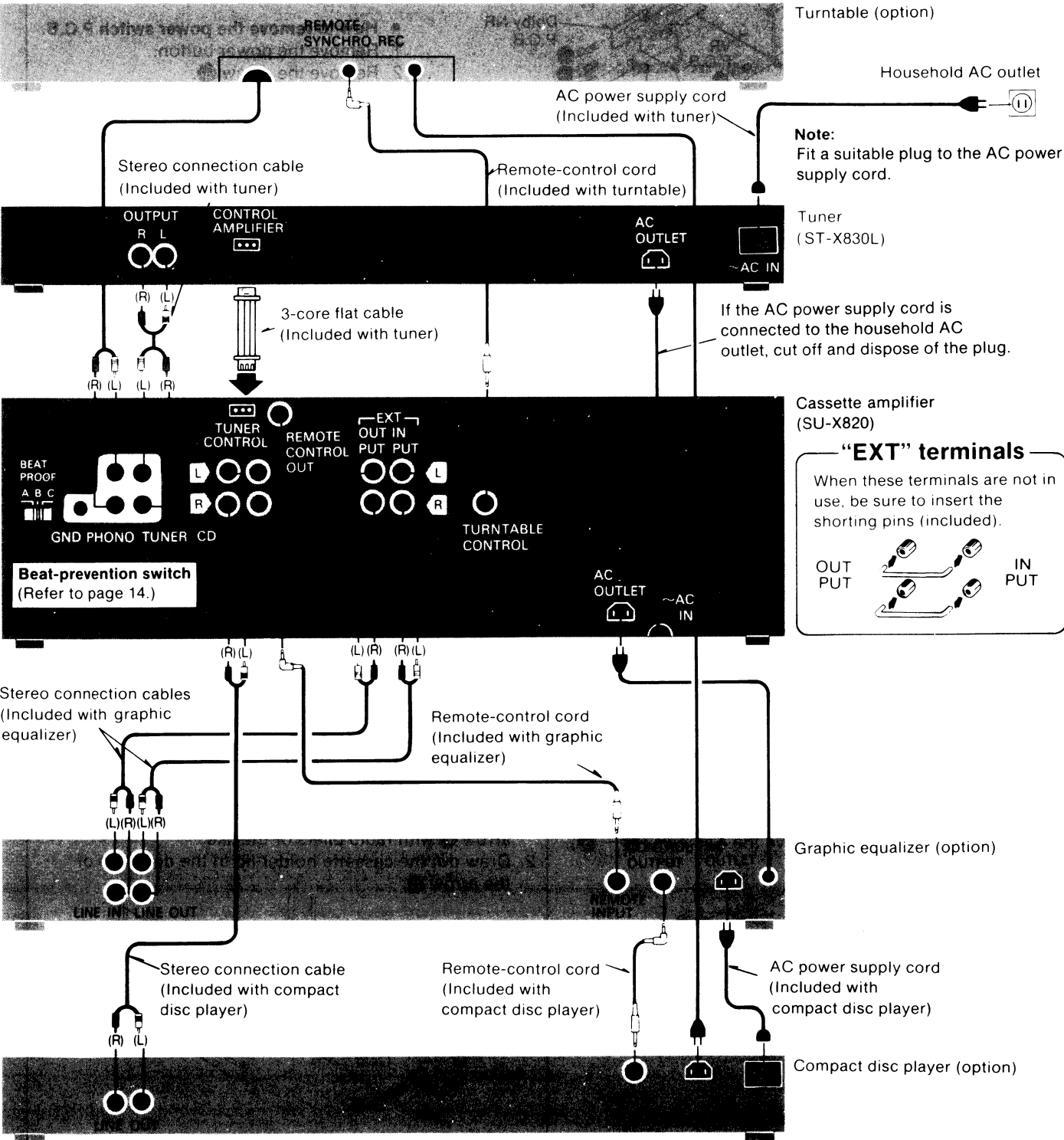
Cassette holder

Be sure to press the upper right side of the cassette holder (marked "PUSH") to close it.

■ CONNECTIONS

Stereo system components and their connections

- For a turntable with a ground terminal, be sure to connect the ground wire to the "GND" terminal of the cassette amplifier. (Refer to the operating instructions of the turntable.)
- Do not connect video-related equipment (such as a TV, etc.) to the AC outlets of these components. (These outlets are especially for audio equipment.) Also do not exceed the indicated power ratings when connecting to these outlets.
- "SWITCHED" outlets** (For tuner, cassette amplifier, compact disc player): Power is controlled by the power switch of each unit.
- "UNSWITCHED" outlet** (For graphic equalizer): Power is always available, regardless of power switch setting.
- If the graphic equalizer is not used in combination with these components, connect the AC power supply cord of the compact disc player to the AC outlet of the cassette amplifier and connect the remote-control cord of the compact disc player to the "REMOTE CONTROL" terminal ("OUT") of the cassette amplifier.



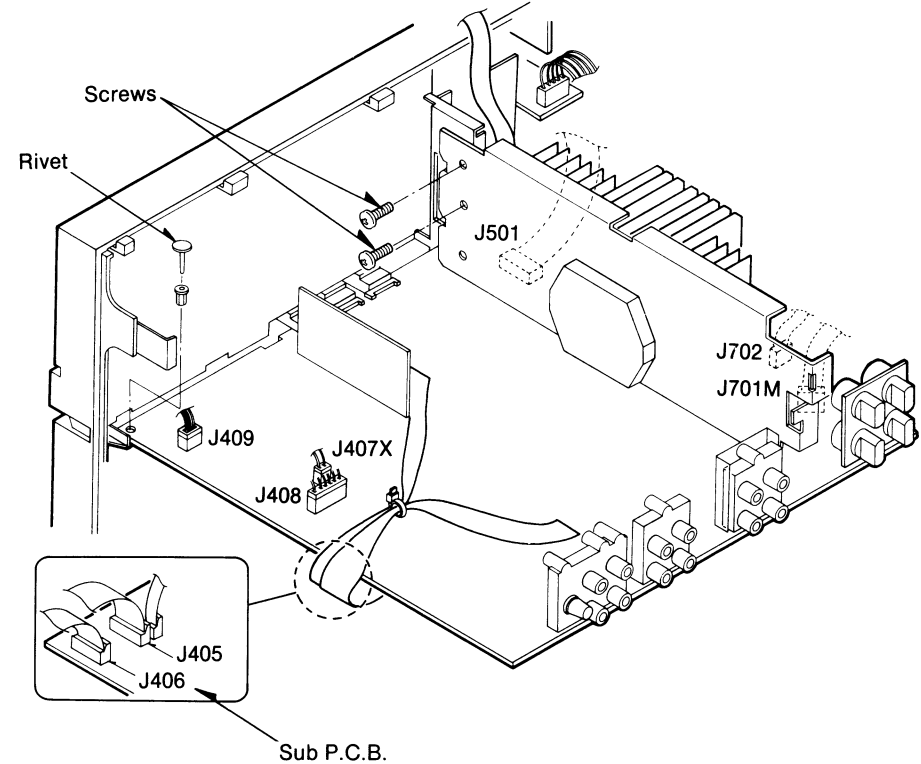
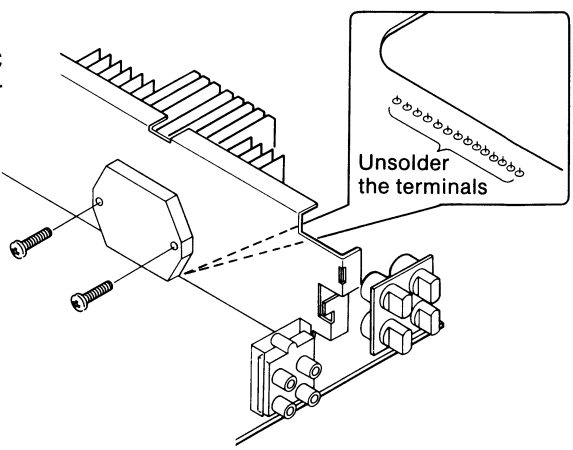
■ BEFORE REPAIR AND ADJUSTMENT

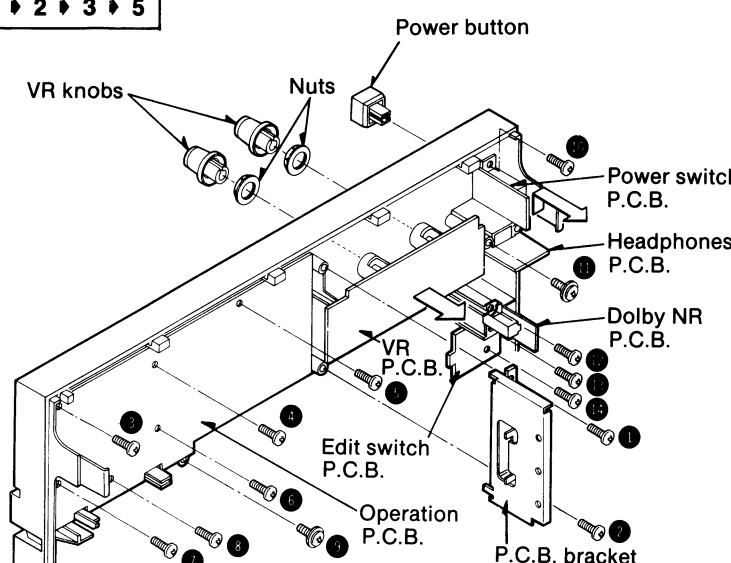
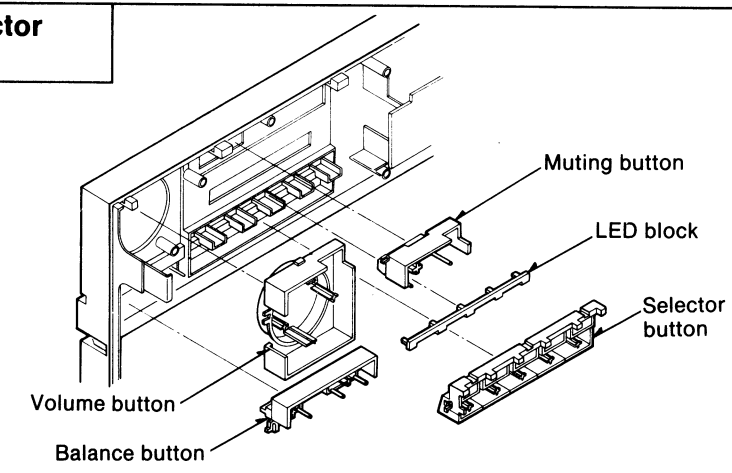
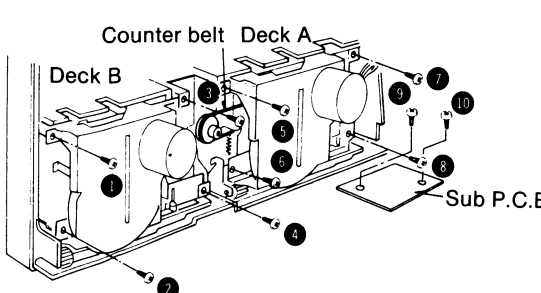
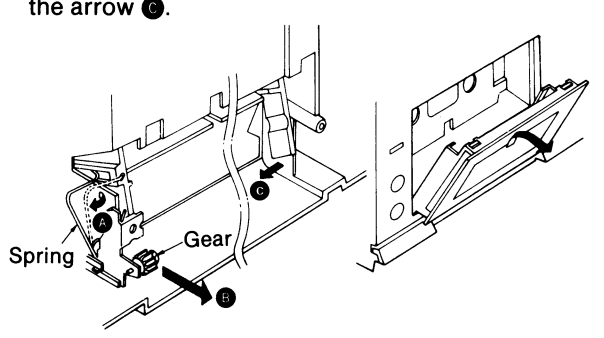
- Turn off the power, Discharge both power supply capacitors (C702, C703 3300 μ F) through a 10 Ω 5W resistor to ground. Do not short between C702 and C703. It may damage the capacitors.
- After completion of repair, slowly apply the primary voltage by using a variac to avoid over current. Current consumption at 50Hz/60Hz in no signal mode should be shown with respect to supply voltage 220 V/240 V.

Power supply voltage		AC 220V	AC 240V
Consumed current	50 Hz	40 ~ 140 mA	30 ~ 130 mA

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the cabinet	Ref. No. 2	How to remove the rear panel
Procedure 1	1. Remove the 10 screws. 2. Remove the cabinet in the direction of the arrow.	Procedure 1 + 2	1. Remove the 12 screws.

Ref. No. 3	How to remove the main P.C.B.
Procedure 1 → 2 → 3	- Remove the 8 connectors (J405, J406, J407X, J408, J409, J501, J701M, J702). - Remove the 2 screws. - Remove the rivet. 
Ref. No. 4	How to remove the power IC
Procedure 1 → 2 → 3 → 4	- Unsolder the terminals of the power IC. - Remove the 2 screws. Caution: When replacing the power IC, apply IC silicone compound (SZZ0L15) to the rear side of the power IC. 

Ref. No. 5	How to remove the operation, VR, power switch, headphones, Dolby NR and edit switch P.C.B.		
Procedure 1 → 2 → 3 → 5	 • How to remove the P.C.B. bracket - Remove the 2 screws (1, 2). • How to remove the operation P.C.B. - Remove the P.C.B. bracket. - Remove the 7 screws (3 ~ 9). • How to remove the VR P.C.B. - Pull off the 2 VR knobs. - Remove the P.C.B. bracket. - Remove the 2 nuts. • How to remove the power switch P.C.B. - Remove the power button. - Remove the screw 10. • How to remove the headphones P.C.B. - Remove the screw 11. • How to remove the Dolby NR P.C.B. - Remove the 2 screws (12, 13). • How to remove the edit switch P.C.B. - Remove the screw 14.		
Ref. No. 6	How to remove the selector buttons		
Procedure 1 → 2 → 3 → 5 → 6	Pull off each button from the front panel. 		
Ref. No. 7	How to remove the mechanism unit and sub P.C.B.	Ref. No. 8	How to remove the cassette lid
Procedure 1 → 2 → 3 → 7	• How to remove the mechanism unit - Push the eject button. - Remove the 4 screws (1 ~ 4) of deck B. - Remove the counter belt of deck A and remove the 4 screws (5 ~ 8).  • How to remove the sub P.C.B. - Remove the 2 screws (9, 10).	Procedure 1 → 2 → 3 → 7 → 8	- Remove the spring in the direction of the arrow A and dumper gear assembly in the direction of the arrow B with radio pliers or the like. - Draw out the cassette holder lid in the direction of the arrow C. 

MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Input selector: TAPE
- Noise reduction select switch: Off
- Make sure heads are clean.

- Make sure capstan and pressure roller are clean.
- Judgeable room temperature $20 \pm 5^{\circ}\text{C}$ ($68 \pm 9^{\circ}\text{F}$)

Measuring instruments

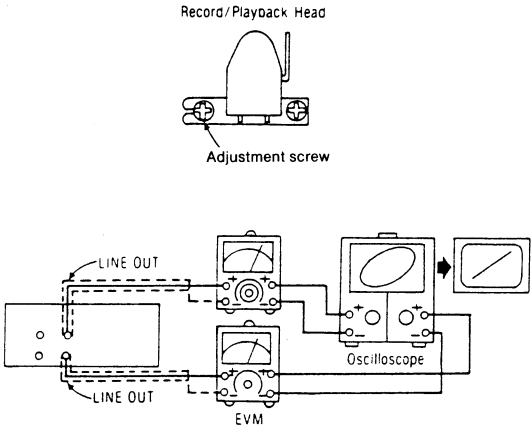
- EVM (electronic voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator
- DC voltmeter

Test tape

- Head azimuth adjustment (8 kHz, -20 dB): QZZCFM
- Tape speed adjustment (3 kHz, -10 dB): QZZCWAT
- Playback frequency response (315 Hz, 12.5 kHz, 10 kHz, 8 kHz, 4 kHz, 1 kHz, 250 kHz, 125 kHz, 63 kHz, -20 dB): QZZCFM
- Playback gain adjustment (315 Hz, 0 dB): QZZCFM
- Overall frequency response, Overall gain adjustment
Normal reference blank tape: QZZCRA
CrO₂ reference blank tape: QZZCRX
Metal reference blank tape: QZZCRZ

HEAD AZIMUTH ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Play back the azimuth adjusted part (8 kHz, -20 dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different for L-CH and R-CH, find a position where the outputs of L-CH and R-CH are balanced, and then make the adjustment.)
3. At the same time, obtain a Lissajous waveform and eliminate phase deflection.
4. After adjustment, lock the tape guide height and angle adjustment screws.



TAPE SPEED ADJUSTMENT (DECK A, B)

High speed (DECK A)

1. Test equipment connection is shown in figure.
2. Connect TP475 and TP476 with a lead wire.
3. Set the editing mode selector to "High" position.
4. Play back the middle part of the test tape (QZZCWAT).
5. Adjust VR475 so that the output is within the standard.

Normal speed

6. Disconnect the lead wire between TP475 and TP476.
7. Set the editing mode selector to "Normal" position.
8. Adjust VR477 so that the output is within the standard.

Standard value: 3000 $\pm$ 20 Hz (Normal)
6000 $\pm$ 40 Hz (High)

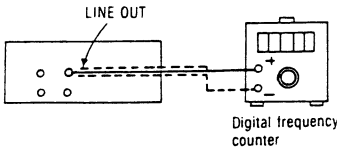
High speed (DECK B)

1. Test equipment connection is shown in figure.
2. Set the editing mode selector to "High" position.
3. Play back the middle part of the test tape (QZZCWAT).
4. Adjust VR476 so that the output is within the standard.

Normal speed

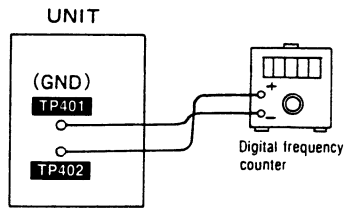
5. Set the editing mode selector to "Normal" position.
6. Adjust VR478 so that the output is within the standard.

Standard value: 3000 $\pm$ 20 Hz (Normal)
6000 $\pm$ 40 Hz (High)



BIAS OSCILLATION ADJUSTMENT (DECK A)

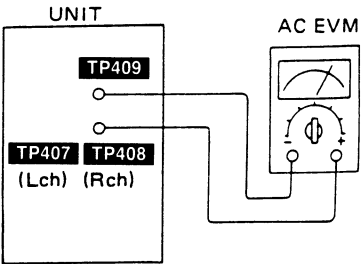
1. Test equipment connection is shown in figure.
2. Set the beat proof switch to "A" position.
3. Insert a metal tape and set the cassette deck to REC mode.
4. Adjust L431 for 95~105 kHz on frequency counter reading.



PLAYBACK GAIN ADJUSTMENT (DECK A,B)

1. Test equipment connection is shown in figure.
2. Play back the playback gain adjusted part (315 Hz, 0 dB) of the test tape (QZZACFM).
3. Adjust Deck B = VR301 (L-CH) (VR302 [R-CH]) and Deck A = VR303 (L-CH) (VR304 [R-CH]) so that the output is within the standard.

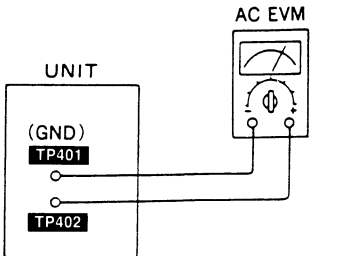
Standard value: 410 $\pm$ 10 mV



ERASE CURRENT ADJUSTMENT (DECK A)

1. Test equipment connection is shown in figure.
2. Insert a metal tape.
3. Press the record and pause buttons.
4. Adjust VR433 so that the output between TP402 and TP401 is within the standard.

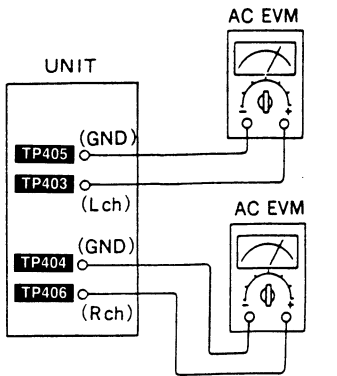
Standard value: Metal tape 145 $\pm$ 5 mV
Normal tape More than 65 mV
CrO₂ tape More than 90 mV



RECORDING BIAS ADJUSTMENT (DECK A)

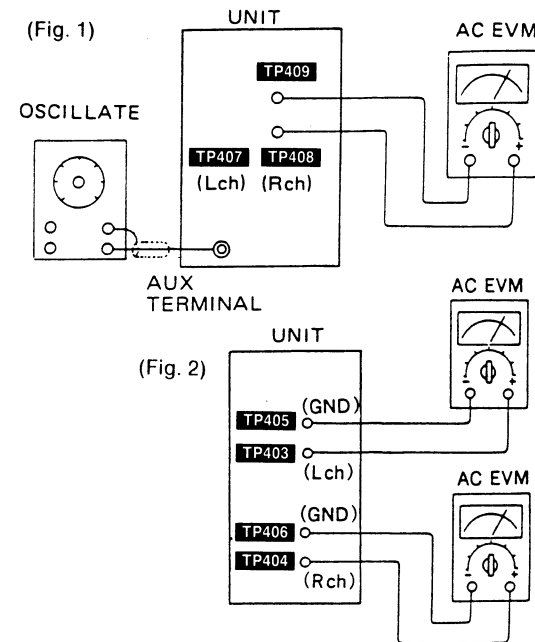
1. Test equipment connection shown in figure.
 2. Set the beat proof switch to "A" position.
 3. Insert the normal tape.
 4. Press the record and pause buttons.
- Minimize the input level control and adjust VR431, VR432 so that the output between TP405 (L-CH) (TP406 [R-CH]) and TP403 (L-CH) (TP404 [R-CH]) is within the standard.

Standard value: Normal tape 4.6 $\pm$ 0.1 mV
CrO₂ tape 5.5 ~ 7.5 mV
Metal tape 8.0 ~ 10.0 mV



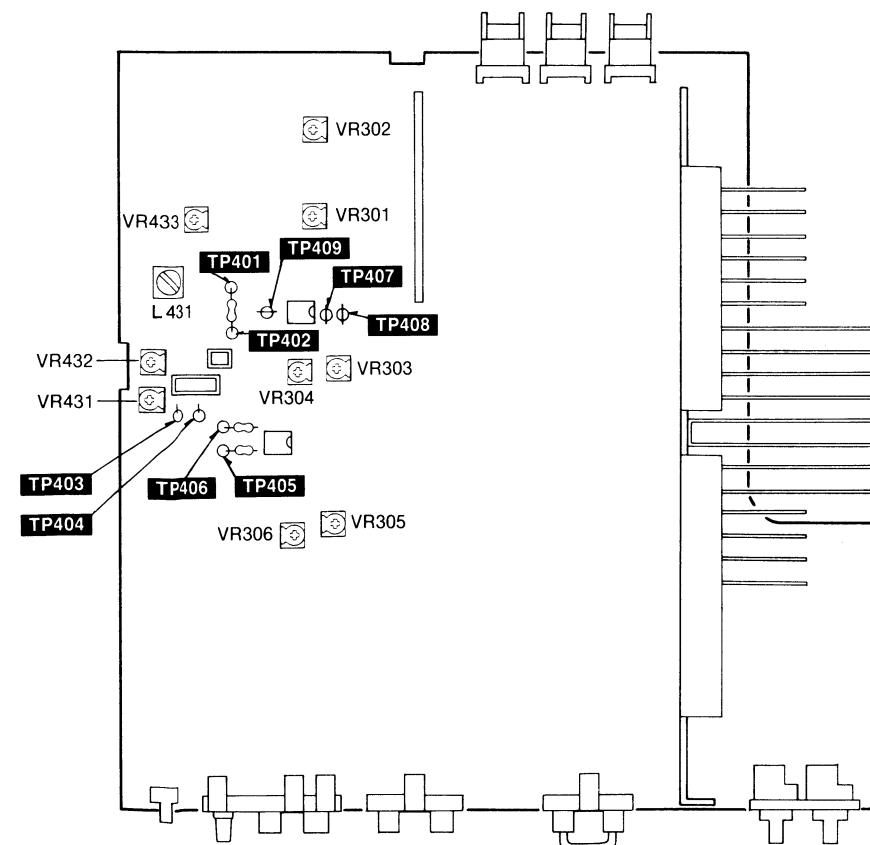
RECORDING CURRENT ADJUSTMENT (DECK A)

1. Test equipment connection is shown in figure. (Fig. 1)
2. Set the unit to **TAPE** position and the cassette deck into **STOP** mode.
3. Short circuit **TP407** and **TP408**.
4. Set the cassette deck to **REC** mode.
5. Supply AF oscillator signal (1 kHz) into **AUX** terminal and adjust the input level to get $410 \pm 10 \text{ mV}$ on AC electronic voltmeter (AC EVM).
6. Test equipment connection is shown in figure. (Fig. 2)
7. Set the cassette deck to **REC** mode. (QZZCRA)
8. Adjust **VR305** (L-CH) and **VR306** (R-CH) for $0.38 \pm 0.01 \text{ mV}$ on AC electronic voltmeter (AC EVM).

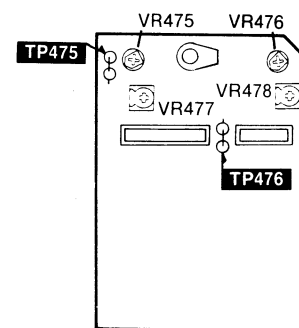


Adjustment Points

Main P.C.B.



Sub P.C.B.



TERMINAL FUNCTION OF LSI

M50720-408SP (Micro-computer)

Pin No.	Mark	I/O	Function
1	S1	O	Key scan output
2	S2	O	Key scan output
3	REM	I	Remote control data input
4	OSC1	O	Clock oscillation output
5	OSC2	I	Clock oscillation input
6	ST	I	Program start input (hot start at "H")
7	RES	I	Reset signal input (reset at "L")
8	VDD	I	Power supply (connected to +5V)
9	NC	---	Not connected
10	REM	I	Remote control data input
11	NC	---	Not connected
12	DATA	O	Selector and volume control
13	CLK	O	Selector and volume control
14	STB	O	Selector and volume control
15	TAPE2	O	Tape 2 LED display
16	1	O	Volume level LED 1 display
17	2	O	Volume level LED 2 display
18	3	O	Volume level LED 3 display
19	4	O	Volume level LED 4 display
20	---	I	GND terminal
21	---	I	GND terminal
22	5	O	Volume level LED 5 display

Pin No.	Mark	I/O	Function
23	6	O	Volume level LED 6 display
24	7	O	Volume level LED 7 display
25	S.BASS	O	Super bass LED display and super bass control
26	PH	O	Phono LED display
27	TU	O	Tuner LED display
28	CD	O	CD/aux LED display
29	TAPE1	O	Tape 1 LED display
30	CS2	O	Aux 2 LED display
31	MUTE	I	Muting control
32	PWR	I	Power detection (power down mode at "L")
33	STOP	O	Turntable stop control
34	ST	O	Turntable start control
35	REC	I	Deck on-recording signal input
36	PLAY	I	Deck control signal input
37	DECK	O	Deck control signal output
38	K0	I	Key scan input
39	K1	I	Key scan input
40	K2	I	Key scan input
41	K3	I	Key scan input
42	S0	O	Key scan output

TC9177P (Volume Control)

Pin No.	Mark	I/O	Function
1	VSS	I	Power supply (connected to -B)
2	---	I	Loudness terminal (not used)
3	---	O	Loudness terminal (not used)
4	OUT1	O	10 dB attenuator output
5	IN1	I	10 dB attenuator input
6	GND	I	GND terminal
7	IN2	I	2 dB attenuator input
8	OUT2	O	2 dB attenuator output
9	GND	I	GND terminal
10	CK	I	Clock input
11	DATA	I	Attenuation/channel select data input

Pin No.	Mark	I/O	Function
12	ST	I	Strobe input (attenuation/channel select data input)
13	OTT2	O	2 dB attenuator output
14	IN2	I	2 dB attenuator input
15	GND	I	GND terminal
16	IN1	I	10 dB attenuator input
17	OUT1	O	10 dB attenuator output
18	---	O	Loudness terminal (not used)
19	---	I	Loudness terminal (not used)
20	VDD	I	Power supply (connected to +B)

■ RESISTORS AND CAPACITORS

Notes: * Important safety notice:

Components identified by  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* Bracketed indications in Ref. No. columns specify the area.

Parts without these indications can be used for all areas.

Numbering System of Resistor

Example

<u>ERD</u>	<u>25</u>	<u>F</u>	<u>J</u>	<u>102</u>
Type	Wattage	Shape	Tolerance	Value
<u>ERX</u>	<u>2</u>	<u>AN</u>	<u>J</u>	<u>471</u>
Type	Wattage	Shape	Tolerance	Value
				47x10 ¹ (ohm)

Numbering System of Capacitors

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity
ECEA	50	M		330
Type	Voltage	Peculiarity		Value (33x10 ⁰ microfarad)

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : $\pm 5\%$
ERG : Metal Oxide	12 : 1/2W	F : $\pm 1\%$
ERX : Metal Film	25 : 1/4W	G : $\pm 2\%$
ERQ : Fuse Type Metal	1A : 1W	K : $\pm 10\%$
ERD $\square$ L : Carbon (chip)	18 : 1/8W	
ERO $\square$ K : Metal Film (chip)	S2 : 1/4W	
ERC : Solid	S1 : 1/2W	
	2F : 1/4W	
	50 : 1/2W	
	2A : 2W	

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic	0J : 6.3V	C : $\pm 0.25\text{pF}$
ECCD : Ceramic	1A : 10V	J : $\pm 5\%$
ECKD : Ceramic	1C : 16V	K : $\pm 10\%$
ECQM : Polyester	1E : 25V	Z : $\pm 80\%$
	1H : 50V	-20%
ECQP : Polypropylene	1V : 35V	P : $\pm 100\%$
	50 : 50V	-0%
ECG : Ceramic	05 : 50V	M : $\pm 20\%$
ECEA□□□□ : Non Polar Electrolytic	2H : 500V	
	2A : 100V	D : $\pm 0.5\text{pF}$
QCU□ : Ceramic (Chip Type)	1 : 100V	G : $\pm 2\%$
ECUX : Ceramic (Chip Type)	KC : 400V AC	
ECF : Semiconductor	KC : 125VAC (UL)	
	1J : 63V	
EECW : Liquid electrolyte double layer capacitor		

Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code
RESISTORS			R373, R374	ERDS2TJ103	001 152 2347 3	R447	ERDS2TJ562	001 152 2445 2
R81, R82	ERDS2TJ332	001 152 2357 1	R375, R376	ERDS2TJ822	001 152 2455 0	R448, R449	ERDS2TJ103	001 152 2347 3
R83, R84	ERDS2TJ272	001 152 2354 4	R377, R378	ERDS2TJ272	001 152 2354 4	R450	ERDS2TJ223	001 152 2432 7
R85, R86	ERDS2TJ473	001 152 2363 3	R379, R380	ERDS2TJ102	001 152 2346 4	R451	ERDS2TJ104	001 152 2348 2
R87, R88	ERDS2TJ561	001 152 2364 2	R381, R382	ERDS2TJ122	001 152 2423 8	R452	ERDS2TJ102	001 152 2346 4
R89, R90	ERDS2TJ224	001 152 2433 6	R383, R384	ERDS2TJ822	001 152 2455 0	R453	ERDS2TJ223	001 152 2432 7
R91, R92	ERDS2TJ204	001 152 3002 1	R385, R386	ERDS2TJ123	001 152 2424 7	R454	ERDS2TJ103	001 152 2347 3
R301, R302	ERDS2TJ100	001 152 2420 1	R387, R388	ERDS2TJ273	001 152 2436 3	R457	ERDS2TJ332	001 152 2357 1
R303, R304	ERDS2TJ224	001 152 2433 6	R389, R390	ERDS2TJ101	001 152 2421 0	R458	ERDS2TJ103	001 152 2347 3
R305, R306	ERDS2TJ274	001 152 2347 2	R391, R392	ERDS2TJ102	001 152 2346 4	R459	ERDS2TJ222	001 152 2353 5
R307, R308	ERDS2TJ103	001 152 2347 3	R393, R394	ERDS2TJ392	001 152 2439 0	R460	ERDS2TJ102	001 152 2346 4
R309, R310	ERDS2TJ121	001 152 2349 1	R395, R396	ERDS2TJ392	001 152 2439 0	R461, R462	ERDS2TJ103	001 152 2347 3
R311, R312	ERDS2TJ394	001 152 2441 6	R397, R398	ERDS2TJ103	001 152 2347 3	R463, R464	ERDS2TJ332	001 152 2357 1
R313, R314	ERDS2TJ163	001 152 2763 1	R399, R400	ERDS2TJ103	001 152 2347 3	R465	ERDS2TJ104	001 152 2348 2
R315, R316	ERDS2TJ392	001 152 2439 0	R401, R402	ERDS2TJ103	001 152 2347 3	R466	ERDS2TJ473	001 152 2363 3
R317, R318	ERDS2TJ103	001 152 2347 3	R403, R404	ERDS2TJ103	001 152 2347 3	R468	ERDS2TJ222	001 152 2363 5
R319, R320	ERDS2TJ224	001 152 2433 6	R405	ERDS2TJ471	001 152 2361 5	R469	ERDS2TJ221	001 152 2431 8
R321, R322	ERDS2TJ472	001 152 2362 4	R406	ERDS2TJ103	001 152 2347 3	R470	ERD25FJ222	001 152 0261 6
R323, R324	ERDS2TJ224	001 152 2433 6	R407, R408	ERDS2TJ392	001 152 2439 0	R473	ERDS2TJ103	001 152 2347 3
R325, R326	ERDS2TJ272	001 152 2354 4	R409	ERDS2TJ223	001 152 2432 7	R474	ERDS2TJ472	001 152 2362 4
R327, R328	ERDS2TJ103	001 152 2347 3	R410	ERDS2TJ332	001 152 2357 1	R475, R476	ERDS2TJ332	001 152 2357 1
R331, R332	ERDS2TJ103	001 152 2347 3	R411, R412	ERDS2TJ472	001 152 2362 4	R477	ERDS2TJ103	001 152 2347 3
R333, R334	ERDS2TJ103	001 152 2347 3	R413, R414	ERDS2TJ224	001 152 2433 6	R478, R479	ERDS2TJ183	001 152 2429 2
R335	ERDS2TJ561	001 152 2364 2	R415, R416	ERDS2TJ103	001 152 2347 3	R480	ERDS2TJ103	001 152 2347 3
R337, R338	ERDS2TJ472	001 152 2362 4	R417, R418	ERDS2TJ472	001 152 2362 4	R481	ERDS2TJ222	001 152 2353 5
R339, R340	ERDS2TJ102	001 152 2346 4	R420	ERDS2TJ683	001 152 2450 5	R482, R483	ERDS2TJ105	001 152 2422 9
R341, R342	ERD25FJ100	001 152 0213 4	R421	ERDS2TJ224	001 152 2433 6	R484	ERDS2TJ101	001 152 2421 0
R343, R344	ERD25FJ101	001 152 0214 3	R423, R424	ERDS2TJ222	001 152 2353 5	R485	ERDS2TJ103	001 152 2347 3
R345, R346	ERDS2TJ224	001 152 2433 6	R425, R426	ERDS2TJ473	001 152 2363 3	R486	ERDS2TJ473	001 152 2363 3
R347, R348	ERDS2TJ121	001 152 2349 1	R427, R428	ERDS2TJ103	001 152 2347 3	R487	ERDS2TJ332	001 152 2357 1
R349, R350	ERDS2TJ394	001 152 2441 6	R431	ERD25FJ1R0	001 152 0208 1	R488	ERDS2TJ103	001 152 2347 3
R351, R352	ERDS2TJ163	001 152 2763 1	R432	ERDS2TJ471	001 152 2361 5	R489, R490	ERDS2TJ392	001 152 2439 0
R353, R354	ERDS2TJ392	001 152 2439 0	R433	ERDS2TJ391	001 152 2360 6	R491	ERDS2TJ223	001 152 2432 7
R355, R356	ERDS2TJ472	001 152 2362 4	R434	ERDS2TJ681	001 152 2449 8	R492	ERDS2TJ102	001 152 2346 4
R357, R358	ERDS2TJ224	001 152 2433 6	R435, R436	ERDS2TJ102	001 152 2346 4	R493	ERDS2TJ223	001 152 2432 7
R359, R360	ERDS2TJ103	001 152 2347 3	R437, R438	ERDS2TJ4R7	001 152 2826 3	R494	ERDS2TJ103	001 152 2347 3
R361, R362	ERDS2TJ152	001 152 2350 8	R439, R440	ERDS2TJ183	001 152 2429 2	R495, R496	ERDS2TJ223	001 152 2432 7
R363, R364	ERDS2TJ224	001 152 2433 6	R441	ERD2FCG100	001 152 0185 1	R497	ERDS2TJ103	001 152 2347 3
R365, R366	ERDS2TJ223	001 152 2432 7	R442	ERDS2TJ331	001 152 2356 2	R498	ERDS2TJ183	001 152 2429 2
R367, R368	ERDS2TJ272	001 152 2354 4	R443	ERDS2TJ471	001 152 2361 5	R499	ERDS2TJ223	001 152 2432 7
R369, R370	ERDS2TJ102	001 152 2346 4	R444	ERDS2TJ682	001 152 2365 1	R501, R502	ERDS2TJ391	001 152 2360 6
R371, R372	ERDS2TJ102	001 152 2346 4	R445	ERD25FJ181	001 152 0247 4	R503, R504	ERDS2TJ224	001 152 2433 6
			R446	ERDS2TJ103	001 152 2347 3	R505, R506	ERDS2TJ563	001 152 2446 1

Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code
R507, R508	ERDS2TJ181	001 152 2428 3	R822	ERDS2TJ472	001 152 2362 4	C453, C454	ECKR1H103ZF5	
R509, R510	ERDS2TJ680	001 152 2448 9	R829	ERDS2TJ104	001 152 2348 2	C455, C456	ECEA1CU220	001 120 2906 2
R511, R512	ERDS2TJ154	001 152 2427 4	R830	ERDS2TJ105	001 152 2422 9	C457	ECEA1CU101	001 120 2926 8
R513, R514	ERDS2TJ123	001 152 2424 7	R831, R832	ERDS2TJ103	001 152 2347 3	C459, C460	ECKR1H103ZF5	
R515, R516	ERDS2TJ563	001 152 2446 1	R833	ERDS2TJ223	001 152 2432 7	C461	ECEA1UA470	001 120 2832 3
R517, R518	ERDS2TJ102	001 152 2346 4	R834	ERDS2TJ823	001 152 2456 9	C475	ECEA1CU331	001 120 3200 5
R521, R522	ERDS2TJ222	001 152 2353 5	R835	ERDS2TJ273	001 152 2436 3	C477	ECEA1CU470	001 120 2835 0
R523, R524	ERDS2TJ332	001 152 2357 1	CAPACITORS			C501, C502	ECEA1HU3R3	001 120 3254 1
R525	ERD2FCG560	001 152 2478 3	C81, C82	ECEA1EU4R7	001 120 2840 3	C503, C504	ECKD1H101KB	001 103 1412 0
R526	ERDS2TJ560	001 152 2537 7	C83, C84	ECBS1H821KB	001 103 7587 4	C505, C506	ECKD1H471KB	001 103 1551 0
R527, R528	ERDS2TJ563	001 152 2446 1	C85, C86	ECEA1CU100	001 120 2905 3	C507, C508	ECEA0J330	001 120 3162 4
R529	ERDS2TJ563	001 152 2446 1	C87, C88	ECEA1CU100	001 120 2905 3	C509, C510	ECFTD223KXL	001 108 0342 6
R530, R531	ERDS2TJ103	001 152 2347 3	C89, C90	ECQB1H833JZ	001 106 4846 1	C511, C512	ECFTD682KXL	001 108 0363 1
R532	ERDS2TJ103	001 152 2347 3	C91, C92	ECQB1H103JZ	001 106 3225 8	C513, C514	ECEA1HU010	001 120 2842 1
R533, R534	ERDS2TJ224	001 152 2433 6	C93, C94	ECQB1H472JZ	001 106 3380 8	C515, C516	ECKR1H103ZF5	
R535, R536	ERDS2TJ102	001 152 2346 4	C95, C96	ECEA1CU100	001 120 2905 3	C517, C518	ECKR1H103ZF5	
R537, R538	ERDS2TJ272	001 152 2354 4	C97, C98	ECFD1V473KD	001 108 0256 3	C519	ECCD1H470K	001 103 0627 1
R539	ERDS2TJ391	001 152 2360 6	C99, C100	ECEA1HS0R1	001 120 3250 5	C521, C522	ECEA1HU010	001 120 2842 1
R540	ERDS2TJ471	001 152 2361 5	C101, C102	ECAG25ER33	001 120 1103 3	C523, C524	ECFTD473KXL	001 108 0361 3
R541, R542	ERDS2TJ102	001 152 2346 4	C103	ECEA1UAJ21	001 120 3131 1	C525, C526	ECEA1CU220	001 120 2906 2
R543, R544	ERDS2TJ224	001 152 2433 6	C301, C302	ECKD1H121KB	001 103 1455 9	C527, C528	ECKR1H103ZF5	
R545, R546	ERDS2TJ224	001 152 2433 6	C303, C304	ECKD1H331KB	001 103 1523 4	C529, C530	ECKD1H101KB	001 103 1412 0
R547, R548	ERDS2TJ473	001 152 2363 3	C305, C306	ECEA0JU470	001 120 3125 9	C531, C532	ECKR1H103ZF5	
R549, R550	ERDS2TJ391	001 152 2360 6	C307, C308	ECKD1H331KB	001 103 1523 4	C533, C534	ECEA1HU3R3	001 120 3254 1
R551, R552	ERDS2TJ682	001 152 2365 1	C309, C310	ECQB1H822JZ	001 106 3383 5	C535, C536	ECKD1H101KB	001 103 1412 0
R553, R554	ERDS2TJ223	001 152 2432 7	C311, C312	ECEA1HU010	001 120 2842 1	C537, C538	ECKD1H101KB	001 103 1412 0
R555, R556	ERDS2TJ392	001 152 2439 0	C313, C314	ECQB1H153JZ	001 106 2817 4	C539, C540	ECFTD333KXL	001 108 0817 2
R557, R558	ERDS2TJ223	001 152 2432 7	C315, C316	ECQB1H153JZ	001 106 2817 4	C541, C542	ECEA1HUR47	001 120 3249 8
R559, R560	ERDS2TJ332	001 152 2357 1	C317, C318	ECKD1H561KB	001 103 1576 1	C543, C544	ECEA1HU010	001 120 2842 1
R561, R562	ERDS2TJ102	001 152 2346 4	C319, C320	ECEA0JU470	001 120 3125 9	C545, C546	ECEA1HU010	001 120 2842 1

■ REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Code	Description	Ref. No.	Part No.	Part Code	Description
INTEGRATED CIRCUITS				D703, D704	GP15GLF	001 032 8222 0	DIODE
IC61	TA7770N	001 061 4022 9	I.C., DOLBY	D706, D707 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
IC301, IC302	AN6558F	001 060 4009 1	I.C., AMP	D708 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
IC303	AN6558F	001 060 4009 1	I.C., AMP	D709	MA4120	001 032 7292 0	DIODE
IC304	AN6552F	001 060 0274 2	I.C., OPERATION AMP.	D710	MA4062-M	001 032 7211 7	DIODE
IC306	MN6634	001 061 0884 7	I.C., NR SELECTOR	D801, D802	LN078396P	001 033 0156 0	L.E.D. ASS'Y
IC307, IC501	AN6552F	001 060 0274 2	I.C., OPERATION AMP.	D803, D804	LN078396P	001 033 0156 0	L.E.D. ASS'Y
IC502	TC9163N	001 061 0203 2	I.C., INPUT SELECTOR	D805, D806	LN078396P	001 033 0156 0	L.E.D. ASS'Y
IC503	TC9177P	001 061 0639 2	I.C., VOLUME CONTROL	D807	LN078396P	001 033 0156 0	L.E.D. ASS'Y
IC504, IC505	AN6558F	001 060 4009 1	I.C., BUFFER	D808, D809	SVGLB74UR3HL	001 032 7553 8	L.E.D.
IC601	SV13101A	001 061 4831 4	I.C., POWER AMP	D810, D811	SVGLB74UR3HL	001 032 7553 8	L.E.D.
IC701	AN7812	001 060 3756 7	I.C., REGULATOR	D812	SVGLB74UR3HL	001 032 7553 8	L.E.D.
IC801	M50720-408SP	001 061 5760 8	I.C., MICRO COMPUTER	D814, D815	MA165	001 032 0494 0	DIODE
TRANSISTORS				D816, D817	MA165	001 032 0494 0	DIODE
Q301, Q302	2SD1450RS	001 030 6115 0	TRANSISTOR	D819	MA165	001 032 0494 0	DIODE
Q303, Q304	2SC2785F	001 030 5076 4	TRANSISTOR	VARIABLE RESISTORS			
Q305, Q306	2SC2785F	001 030 5076 4	TRANSISTOR	VR301, VR302	EVND4AA00B24	001 180 2244 1	V.R., 20KΩ(B)
Q307, Q308	2SC2785F	001 030 5076 4	TRANSISTOR	VR303, VR304	EVND4AA00B24	001 180 2244 1	V.R., 20KΩ(B)
Q309	2SC2785F	001 030 5076 4	TRANSISTOR	VR305, VR306	EVND4AA00B54	001 180 2246 9	V.R., 50KΩ(B)
Q310, Q311	2SC2784PFE	001 030 6019 9	TRANSISTOR	VR431, VR432	EVND4AA00B25	001 180 2245 0	V.R., 200KΩ(B)
Q312	2SC2784PFE	001 030 6019 9	TRANSISTOR	VR433	EVND4AA00B53	001 180 2319 9	V.R., 5KΩ(B)
Q313, Q314	2SC2785F	001 030 5076 4	TRANSISTOR	VR475, VR476	EVN4LCA00B14	001 180 3116 4	V.R., 10KΩ(B)
Q315, Q316	2SC2785F	001 030 5076 4	TRANSISTOR	VR477, VR478	EVND4AA00B14	001 180 2242 3	V.R., 10KΩ(B)
Q317, Q318	2SD1450RS	001 030 6115 0	TRANSISTOR	VR501, VR502	EWG2XAF25C15	001 174 9046 3	V.R., 100KΩ(C)
Q319, Q320	2SC2785F	001 030 5076 4	TRANSISTOR	COILS AND TRANSFORMERS			
Q321, Q322	2SC2785F	001 030 5076 4	TRANSISTOR	L301, L302	SLQX303-1K	001 211 1756 6	CHOKE COIL
Q323, Q324	2SC2785F	001 030 5076 4	TRANSISTOR	L303, L304	QLB5X2722D	001 210 7152 9	COIL
Q325, Q326	2SC2785F	001 030 5076 4	TRANSISTOR	L305, L306	SLQX303-1K	001 211 1756 6	CHOKE COIL
Q327, Q328	2SC2785F	001 030 5076 4	TRANSISTOR	L431	SL09C9-K	001 211 0882 5	OSCILLATOR COIL
Q331, Q332	2SD1450RS	001 030 6115 0	TRANSISTOR	L801, L802	ELEPK220KA	001 211 4429 6	COIL
Q431, Q432	2SD1512R	001 030 5015 7	TRANSISTOR	L803, L804	ELEPK101KA	001 211 0855 8	CHOKE COIL
Q433, Q434	2SD592ANCQ	001 030 1752 7	TRANSISTOR	T1 ⚠	SLTF5M12-W	001 202 9211 3	POWER TRANSFORMER
Q435	2SC1384A-R	001 030 0937 4	TRANSISTOR	(EK)			
Q436	2SA1175EFTA	001 030 7024 8	TRANSISTOR	T1 ⚠	SLTF5M13-W	001 202 9205 1	POWER TRANSFORMER
Q437, Q439	2SC2785F	001 030 5076 4	TRANSISTOR	(EB)			
Q440, Q441	2SC2785F	001 030 5076 4	TRANSISTOR	COMPONENT COMBINATIONS			
Q442, Q443	2SC2785F	001 030 5076 4	TRANSISTOR	Z801	EXBF9E103J	001 230 2204 2	COMPONENT COMBINATION
Q444	2SC2785F	001 030 5076 4	TRANSISTOR	Z802	EXBF8E221J	001 230 2976 5	CNMBINATION COM
Q446, Q449	2SA1175EFTA	001 030 7024 8	TRANSISTOR	Z803	EXBF4E472J	001 230 1745 2	CNMBINATION COM
Q450	DTC144A	001 030 2708 7	TRANSISTOR	OSCILLATORS			
Q452	2SC2785F	001 030 5076 4	TRANSISTOR	X801	ECF0FC2004A3	001 241 1458 5	CERAMIC FILTER
Q475	2SC1384A-R	001 030 0937 4	TRANSISTOR	FUSES			
Q476, Q477	2SA1175EFTA	001 030 7024 8	TRANSISTOR	F1 ⚠	XBA2C06TB0	002 380 1364 6	FUSE 250V, T600mA
Q478	2SC2785F	001 030 5076 4	TRANSISTOR	F2 ⚠	XBA2C10TB0	002 380 1351 1	FUSE 250V, T1A
Q479	DTC124ESTP	001 030 5647 1	TRANSISTOR	F3 (EB) ⚠	XBA2C20TB0	002 380 1352 0	FUSE
Q480	2SA684-RNC	001 030 0352 3	TRANSISTOR	SWITCHES			
Q481	2SC2785F	001 030 5076 4	TRANSISTOR	S1 ⚠	ESB823V	003 435 3504 4	SW, POWER SW
Q483	DTC124ESTP	001 030 5647 1	TRANSISTOR	S401	SSS178	003 431 3841 0	SW, DUBBING
Q484	DTC114ESTP	001 030 5025 5	TRANSISTOR	S402	SSH1220	003 435 6008 3	SW, N.R
Q502	2SA1175EFTA	001 030 7024 8	TRANSISTOR	S403	SSS150	003 431 3104 6	SW, BEAT SW
Q503, Q504	2SC2785F	001 030 5076 4	TRANSISTOR	S404	SSP82-1	003 434 1015 9	SW, A.T.S SW
Q505, Q506	2SD1450RS	001 030 6115 0	TRANSISTOR	S501	SSH1198	003 435 5171 7	SW, S.BASS
Q701	2SB941-P	001 030 2636 4	TRANSISTOR	S801, S802	EVQQS205K	003 439 1236 3	SW, TAPE/AUX
Q702	2SC1384A-R	001 030 0937 4	TRANSISTOR	S803, S804	EVQQS205K	003 439 1236 3	SW, CD/TUNER
Q802	2SA1175EFTA	001 030 7024 8	TRANSISTOR	S805, S806	EVQQS205K	003 439 1236 3	SW, PHONO/MUT
Q803, Q804	DTA114ESTP	001 030 5275 9	TRANSISTOR	S807, S808	EVQQS205K	003 439 1236 3	SW, DOWN/UP
DIODES				S809, S810	EVQQS205K	003 439 1236 3	SW, BAL(L/R)
D403, D404	MA165	001 032 0494 0	DIODE	(DECK A)			
D431, D432	MA165	001 032 0494 0	DIODE	SWITCHES			
D433	MA165	001 032 0494 0	DIODE	S301	SMQT1615	003 434 0993 2	LEAF SWITCH
D434	MA4082M	001 032 4955 6	DIODE	S302	SMQT1451	003 434 0905 8	LEAF SWITCH
D436, D443	MA165	001 032 0494 0	DIODE	S303	SMQT1466	003 434 0907 6	LEAF SWITCH
D444, D445	MA165	001 032 0494 0	DIODE	S304, S305	SSP82-1	003 434 1015 9	SW
D475, D476	MA165	001 032 0494 0	DIODE	(DECK B)			
D478, D479	MA165	001 032 0494 0	DIODE	SWITCHES			
D482, D483	MA165	001 032 0494 0	DIODE	S302	SMQT1451	003 434 0905 8	LEAF SWITCH
D484	MA165	001 032 0494 0	DIODE	S303	SMQT1466	003 434 0907 6	LEAF SWITCH
D485 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER	S304	SSP82-1	003 434 1015 9	SW
D501, D502	MA165	001 032 0494 0	DIODE	(DECK A)			
D503, D504	MA165	001 032 0494 0	DIODE	SWITCHES			
D505	MA165	001 032 0494 0	DIODE	S302	SMQT1451	003 434 0905 8	LEAF SWITCH
D701, D702	GP15GLF	001 032 8222 0	DIODE	S303	SMQT1466	003 434 0907 6	LEAF SWITCH
				S304	SSP82-1	003 434 1015 9	SW

Ref. No.	Part No.	Part Code	Description	Ref. No.	Part No.	Part Code	Description
CASSETTE DECK				352	SMQT1553	016 718 3272 4	STOP BUTTON LEVER
301	SJHE700XE	001 270 1361 0	DUMMY HEAD	353	SMQT1552	016 718 3273 3	FF BUTTON LEVER
			(DECK B)	354	SMQT1551	016 718 3274 2	REW BUTTON LEVER
301	SJH94	001 270 0774 7	E HEAD	355	SMQT1550	016 718 3275 1	PLAY BUTTON LEVER
			(DECK A)	357	SMQT1618	016 630 1708 0	ANGLE
302	SJH92	001 270 1308 5	R/P HEAD	358	RFS462Z	015 728 1267 1	SPRING
303	SMQT1469	016 726 0432 2	SPRING	359	SMQT1558	016 726 0727 0	SPRING
304	RFS447Z	015 726 2437 7	SPRING	360	SMQT1675	016 630 1844 3	PLATE
305	SMQT1670	016 630 1835 4	HEAD BASE	361	SMQT1568	016 650 5145 5	ANGLE
306	SMQT1653	016 630 1747 3	SENSING PLATE	362	SMQT1628	016 643 0940 7	P.R STOPPER
307	SMQT1669	016 630 1836 3	HEAD PANEL	363	SMQT1641	016 643 0939 0	COLLER
308	SMQT1622	016 726 0767 2	SPRING	364	SMQT1580	016 718 3279 7	LEVER REC
309	SMQT1643	016 913 0002 7	SUPPLY REEL ASS'Y				(DECK A)
310	SMQT1639	016 726 0776 1	SPRING	365	SMQT1554	016 718 3271 5	PAUSE BUTTON LEVER
311	RFR29ZA	015 740 0302 7	ROLLER				(DECK A)
312	RFS531ZA	015 726 2470 6	SPRING	366	RFY420Z	015 718 3445 9	PAUSE LEVER
313	SMQT1637	016 765 0054 9	TAKE UP REEL ASS'Y				(DECK A)
314	SMQT1621	016 726 0766 3	SPRING	367	RFS459Z	015 726 2444 8	SPRING
316	RFG61ZA	015 745 0849 2	GEAR				(DECK A)
317	SMQT1658	016 630 1745 5	PLATE	368	SMQT1463	016 643 0597 2	STOPPER
318	RFS450Z	015 726 2440 2	SPRING				(DECK A)
319	RFS467Z	015 727 0783 5	PACK SPRING	369	SMQT1465	016 726 0434 0	SPRING
320	SMQT1564	016 630 1678 9	REEL BASE ASS'Y				(DECK A)
321	SMQT1620	016 745 0182 4	FF GEAR	370	SMQT1605	016 718 3302 5	REC LEVER
322	RFY549ZA	015 718 3506 3	LEVER				(DECK A)
323	RFS453Z	015 726 2442 0	SPRING	391	XTB2+6F	005 501 2750 1	SCREW
324	SMQT1720	016 718 3399 0	LEVER				(DECK A)
325	RFS454Z	015 726 2443 9	COIL SPRING	392	XWA2B	005 513 1232 6	WASHER
327	RFY585ZA	015 718 4091 1	LEVER				(DECK A)
328	MM16H2LWSC	002 310 2558 6	DC MOTOR	SCREWS, WASHERS & NUTS			
329	SMQT1735	016 741 0097 0	MOTOR PULLEY	371	XTN2+4H	005 501 2158 1	SCREW
330	SMQT1719	016 754 0072 8	BELT	372	XYN2D8	005 503 0922 7	SCREW
331	RF127Z	015 653 0531 2	MOTOR RUBBER	373	XYN2DB7	005 503 0920 9	SCREW
			(DECK A)	374	XYN2D7	005 501 0921 8	SCREW
331	SMQT4916	016 653 1227 5	MOTOR RUBBER	375	RFN142Z	005 513 3262 2	WASHER
			(DECK B)	376	XTN2+C5	005 501 3458 8	SCREW
332	SMQT1721	016 650 5387 9	BRACKET	377	XTN2+5H	005 501 2162 5	SCREW
336	RFF40ZA	015 756 0407 3	WHEEL	378	XTN2+3H	005 501 4724 5	SCREW
337	SMQT1563	016 752 0118 1	RF BELT	379	RFN149Z	005 513 3269 5	WASHER
338	SMQT1601	016 641 0239 1	METAL GUIDE	380	SMQT1537	005 500 5082 7	SCREW
339	SMQT1557	016 630 1675 2	SUB CHASSIS	381	XTB2+5G	005 501 2615 7	SCREW
340	RFS530ZA	015 726 2469 9	COIL SPRING	383	SMQ4918	016 643 0446 6	SCREW
342	RFS532ZA	015 728 1316 9	SPRING	385	RFN153ZA	005 513 3274 8	WASHER
343	SMQT1667	016 717 0267 8	ARM	386	SMQT1624	005 500 5729 1	SCREW
344	SMQT1555	016 718 3270 6	REW LEVER	387	RFN123Z	005 513 3685 3	WASHER
345	RFS466Z	015 726 2449 3	SPRING	388	XTN2+6G	005 501 1622 2	SCREW
346	SMQT1548	016 630 1676 1	PUSH BUTTON ACTUATOR	390	XYN2+C5	005 500 1291 6	SCREW
347	SMQT1734	016 632 1955 7	ANGLE				

MECHANICAL PARTS LOCATION

NOTE

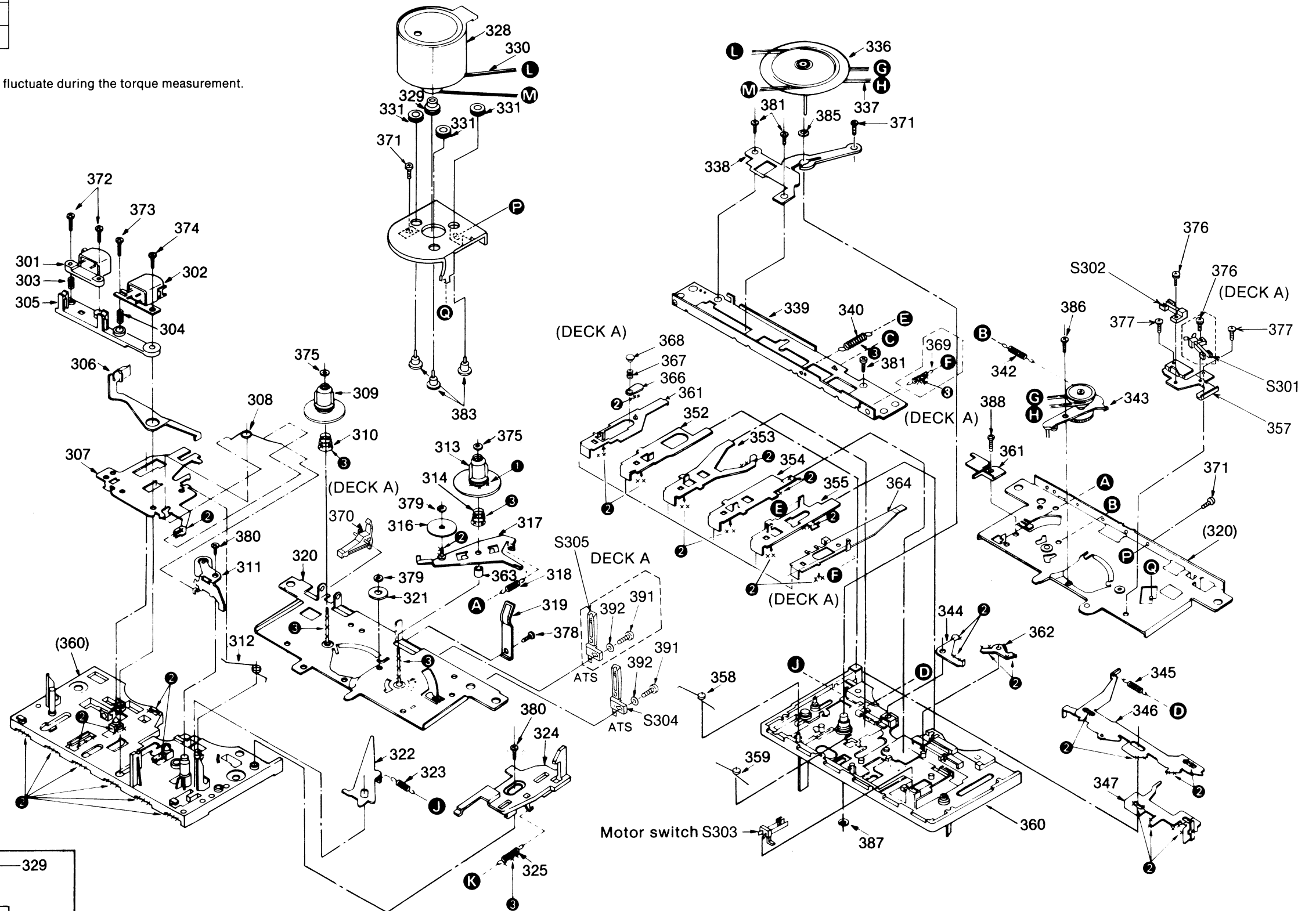
- When changing mechanism parts, apply the specified grease to the areas marked "xx" in the drawing "Mechanical Parts Location".

Ref. No.	PART NAME	PARTS NO.
①	FLOIL G-311S	SZZOL26
②	FLOIL G-488M	SZZOL28
③	SILICONE OIL G-40M	SZZOL27

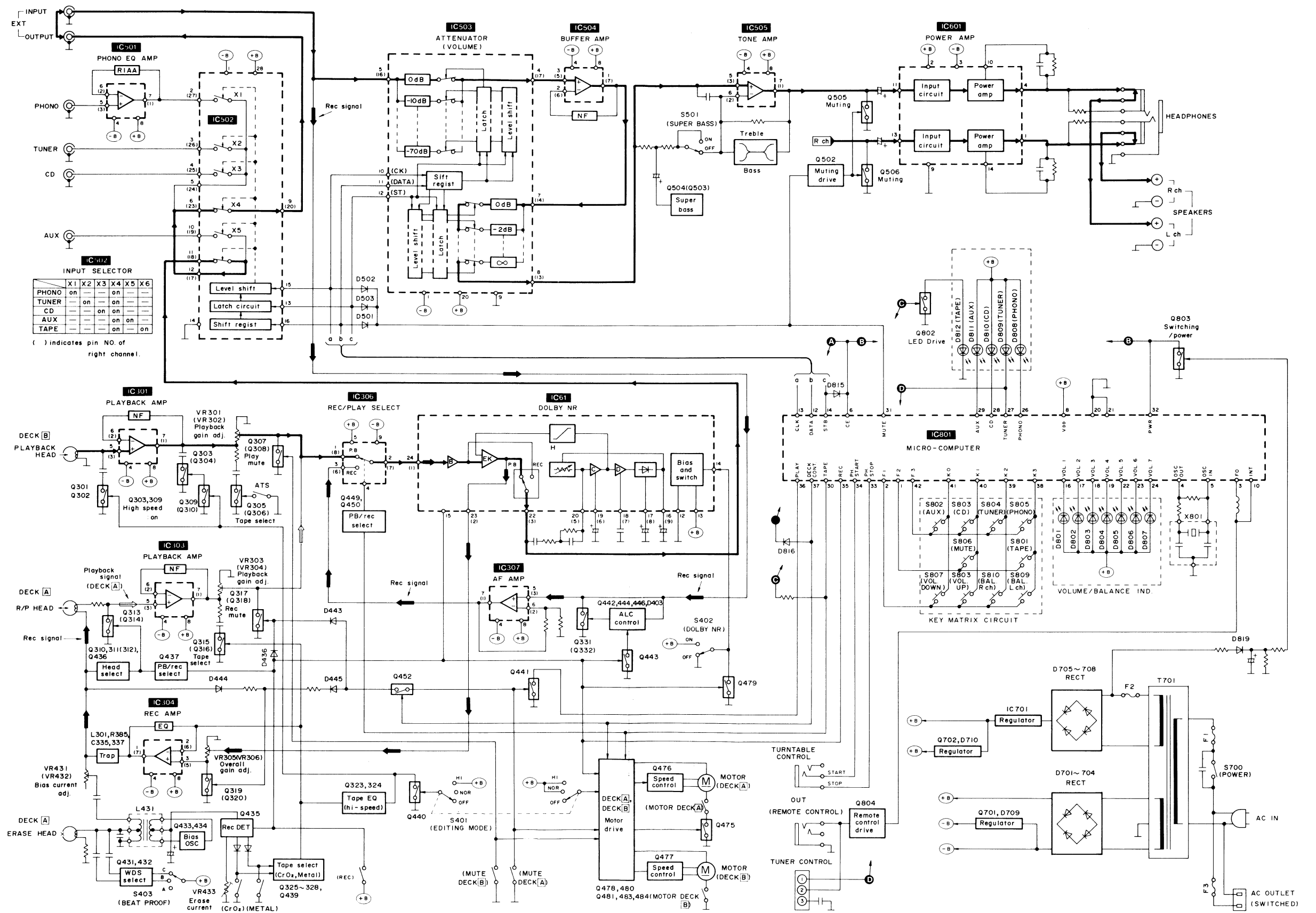
SPECIFICATIONS

- NOTE:** The value indicated by the torque meter may fluctuate during the torque measurement.
In that case, obtain the middle of the values.

Pressure of pressure roller	350 ± 50 g
Takeup tension	35 ~ 60 g-cm
• Use cassette torque meter.....QZZSRKCT	
Wow and flutter: (JIS)	Less than 0.2 % (WRMS)
• Use test tapeQZZCWAT	



■ BLOCK DIAGRAM



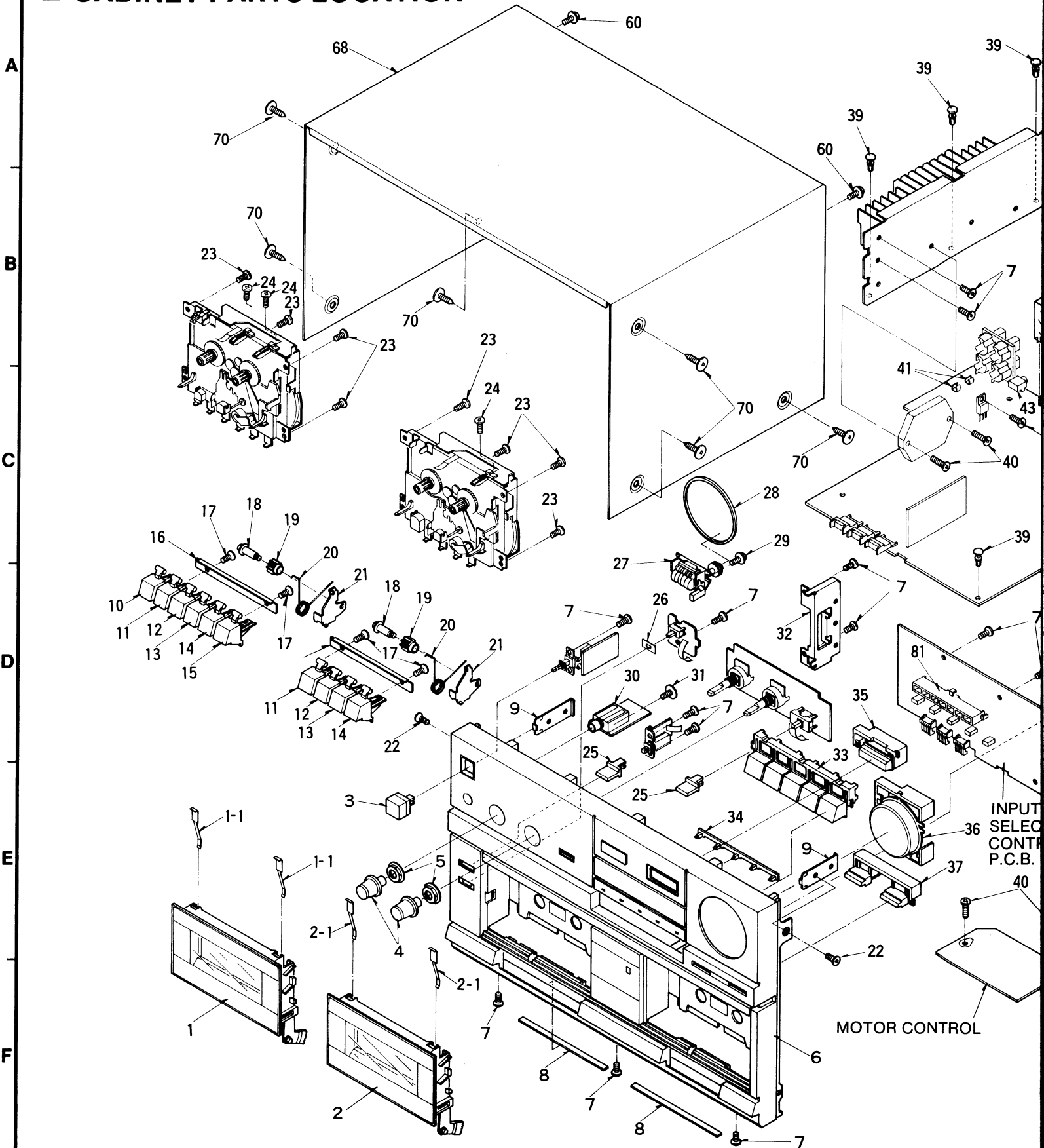
REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Code	Description	Ref. No.	Part No.	Part Code	Description
CABINET AND CHASSIS				50	XTB3+6F	005 501 2687 1	SCREW
1	SYEF5	016 820 0646 3	CASSETE HOLDER(DECK A)	51	SHE185	016 918 0330 9	SPACER
1-1	QBP2006A	015 727 0706 8	SPRING	52	SKU11650-1	016 802 2190 8	BOTTOM BOARD
2	SYEF6	016 820 0645 4	CASSETE HOLDER(DECK B)	53	XTB3+6J	005 501 1535 0	SCREW
2-1	QBP2006A	015 727 0706 8	SPRING	54	SKL307	016 828 0325 7	FOOT
3	SBC666-1	016 702 6076 0	BUTTON	55	SGPFT-3A	016 840 8196 4	REAR PANEL
4	SBN1221	016 700 1974 5	KNOB	(EB)			
5	SNE4021	005 507 0372 5	NUT	55	SGPFTA	016 840 8144 6	REAR PANEL
6	SYF3	016 840 8149 1	FRONT PANEL	(EK)			
7	XTB3+10J	005 501 2076 2	SCREW	56	SUN3007	016 650 5211 2	BRACKET
8	SHGF4	016 653 1100 9	RUBBER SPACER	57	SJJ130-3	003 400 7580 9	JACK
9	SNEF2	016 846 3960 2	ORNAMENT SCREW	58	SJS306	003 403 4936 8	CONNECTOR
10	SBCF6E	016 702 7077 5	BUTTON, REC	59	SMCF11	016 601 0657 1	SHIELD COVER
11	SBCF6A	016 702 7073 9	BUTTON, PLAY	60	XTW3+12TFZ	005 501 4794 1	SCREW
12	SBCF6B	016 702 7080 0	BUTTON, REW	61	XTW3+8TFZ	005 501 2926 5	SCREW
13	SBCF6C	016 702 7079 3	BUTTON, F.F	62	SJS9332B	003 403 7377 5	AC.Outlet
14	SBCF6D	016 702 7078 4	BUTTON, STOP	63	SUNF17-2	016 650 5404 5	BRACKET
15	SBCF6F	016 702 7076 6	BUTTON, PAUSE(DECK A), POS	(EB)			
16	SUN2995	016 650 5182 0	BRACKET	63	SUNF17-3	016 650 5425 0	BRACKET
17	XTS3+10J	005 501 2755 6	SCREW	(EK)			
18	SNE2120	005 500 5609 8	SCREW	64	SJS9332A	003 403 7376 6	AC.Outlet COVER
19	SMQ4096	016 745 0063 0	GEAR	(EK)			
20	SMQ60026	016 726 0969 4	SPRING	65	SHR127	016 645 0037 9	SPACER, POWER CORD
21	SMQ30030	016 650 5149 1	ANGLE	66	SJA138-3	003 490 2575 2	POWER CORD
22	XTS3+8F	005 501 0710 7	SCREW	(EB)			
23	XTB3+10GFR	005 501 3126 5	SCREW	66	SJA189	003 490 5448 6	POWER CORD
24	XYA2+CF8	005 503 1272 4	SCREW	(EK)			
25	SBC928	016 702 6969 2	KNOB	67	SJS9225	003 400 3946 5	AC.Outlet
26	SHR5312	016 652 0650 6	SPACER	(EB)			
27	SJNF1	016 892 0130 4	TAPE COUNTER	68	SKCUX830-KE	016 800 3219 8	CABINET
28	SMQ20021	016 754 0064 8	ANGULAR BELT	70	SNE2095-5	005 500 4884 5	SCREW
29	XTW3+10T	005 501 0996 9	SCREW	71	SHR301	016 645 0044 0	CLAMPER
30	SJUG3E	003 400 4329 0	JACK, HEADPHONE	72	SJS5529	003 400 5928 9	SOCKET(5P)
31	XTW3+8T	005 501 3311 6	SCREW	73	SJT785	003 410 6015 1	CONTACT
32	SUN3063	016 650 5357 5	BRACKET	74	SJT30741LX-H	003 410 6943 0	TERMINAL PLATE
33	SBC925-1C	016 702 7226 0	BUTTON	75	SJT30340LX-V	003 410 6075 9	CONNECTOR(3-P)
34	SGL242	016 846 3750 0	ORNAMENT	75	SJT30540LX-V	003 410 5996 1	CONNECTOR(5-P)
35	SBC927	016 702 7017 7	BUTTON	75	SJT30640LX-V	003 410 6149 8	CONNECTOR(6-P)
36	SBC929	016 702 6998 7	BUTTON	75	SJT30740LX-V	003 410 5990 7	CONNECTOR
37	SBC926	016 702 6963 8	KNOB	76	SJT783	003 410 6001 7	CONTACT
38	XTW3+10Q	005 501 2293 5	SCREW	77	SJS5025	003 403 3907 7	CONNECTOR(10-P)
39	SHR9094	016 640 0048 1	LATCH	77	SJS5215	003 400 5923 4	CONNECTOR(2-P)
40	XTB3+16J	005 501 2648 8	SCREW	77	SJS5331	003 400 5924 3	CONNECTOR(3-P)
41	SJT390	003 410 7350 5	FUSE HOLDER	77	SJS5523	003 400 5916 3	CONNECTOR(5-P)
42	SJF4442	003 410 5983 6	TERMINAL BOARD	77	SJS5629	003 400 5917 2	CONNECTOR(6-P)
43	SJJ130-2	003 400 7317 2	JACK	78	SJT3005	003 410 6010 6	CONNECTOR (10-P)(10-P)
44	SMXF15	016 600 0537 3	SHIELD SPACER	78	SJT3213	003 410 6011 5	CONNECTOR(2-P)
45	SJP9205-2Y	003 492 6791 0	SHORTING PIN	78	SJT3319	003 403 3892 7	CONNECTOR(3-P)
46	SJF3065N	003 410 8320 7	TERMINAL PLATE	78	SJT3511	003 403 3893 6	CONNECTOR(5-P)
47	SJF8511N	003 410 8209 5	TERMINAL PLATE	78	SJT3611	003 410 6000 8	CONNECTOR(6-P)
48	SMC1077	016 601 0037 3	INSULATOR	79	SJT30647WL	003 410 8132 9	CONNECTOR
49	SMCF10	016 601 0656 2	SHIELD COVER	80	SJS50680WL	003 403 7235 8	CONNECTOR
				81	LN078396P	001 033 0156 0	L.E.D. ASS'Y
PACKINGS				P7	XZB65X70C02	016 978 0541 4	PROTECTION COVER
P1	SPGF10	016 971 5189 5	CARTON BOX	ACCESSORIES			
P2	SPSF14	016 977 3375 3	PAD	A1	SQFF12	016 983 5403 2	INSTRUCTION BOOK
P3	SPSF15	016 977 3374 4	PAD	(EK)			
P4	SPSF16	016 977 3376 2	PAD	A1	SQFF14	016 983 5418 5	INSTRUCTION MANUAL
P5	SPSF17	016 977 3377 1	PAD	(EB)			
P6	SPHF3	016 979 0392 4	PACKING SHEET				

CABINET PARTS LOCATION



No. columns specify
s can be used for all

Description
W ER OM BOARD W
PANEL
PANEL
KET
ECTOR LD COVER W W TLET KET
KET
TLET COVER
ER, POWER CORD CORD
CORD
TLET
ET
ER T(5P) CT
NAL PLATE
CTOR(3-P)
CTOR(5-P)
CTOR(6-P)
CTOR
CT
CTOR(10-P)
CTOR(2-P)
CTOR(3-P)
CTOR(5-P)
CTOR(6-P)
CTOR (10-P)(10-P)
CTOR(2-P)
CTOR(3-P)
CTOR(5-P)
CTOR(6-P)
CTOR
CTOR
SS'Y

Description
TION COVER
CTION BOOK
CTION MANUAL

A

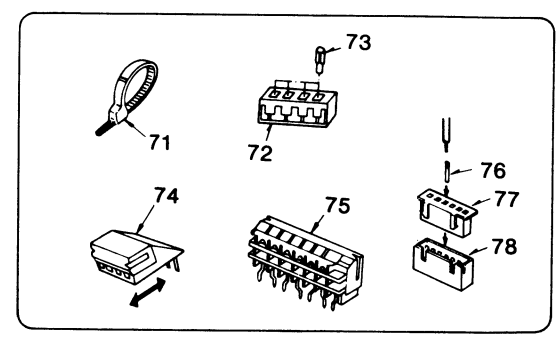
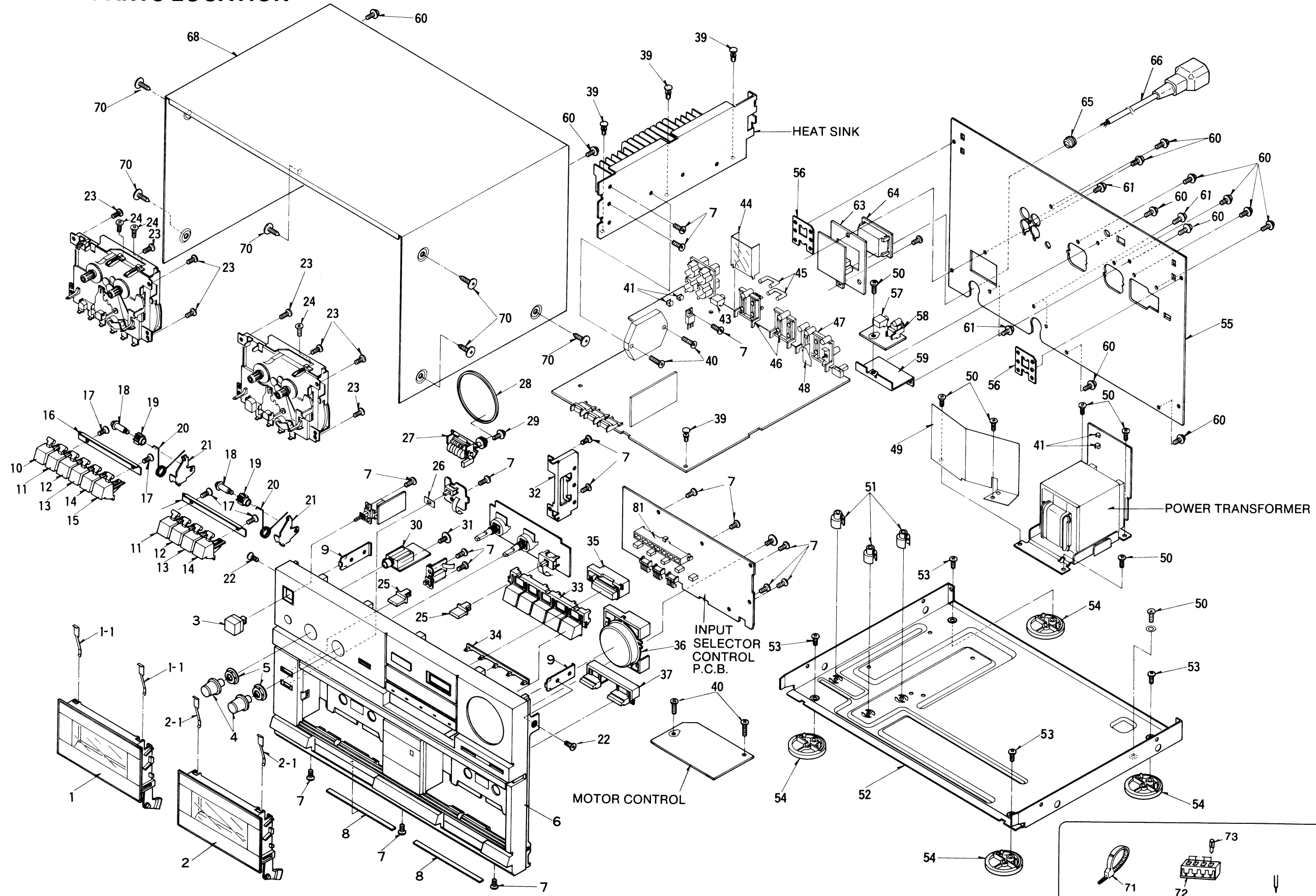
B

C

D

E

F



SCHEMATIC DIAGRAM

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

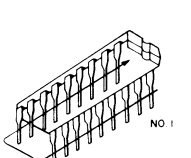
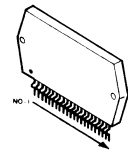
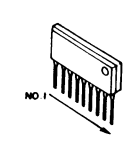
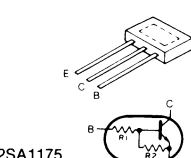
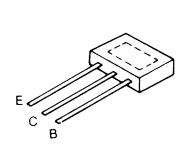
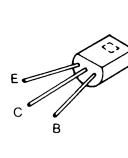
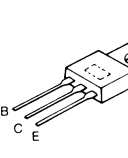
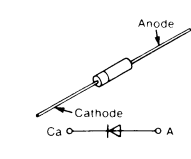
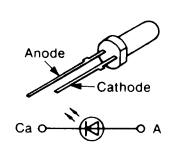
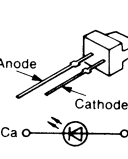
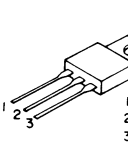
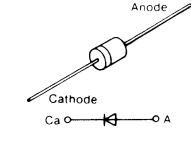
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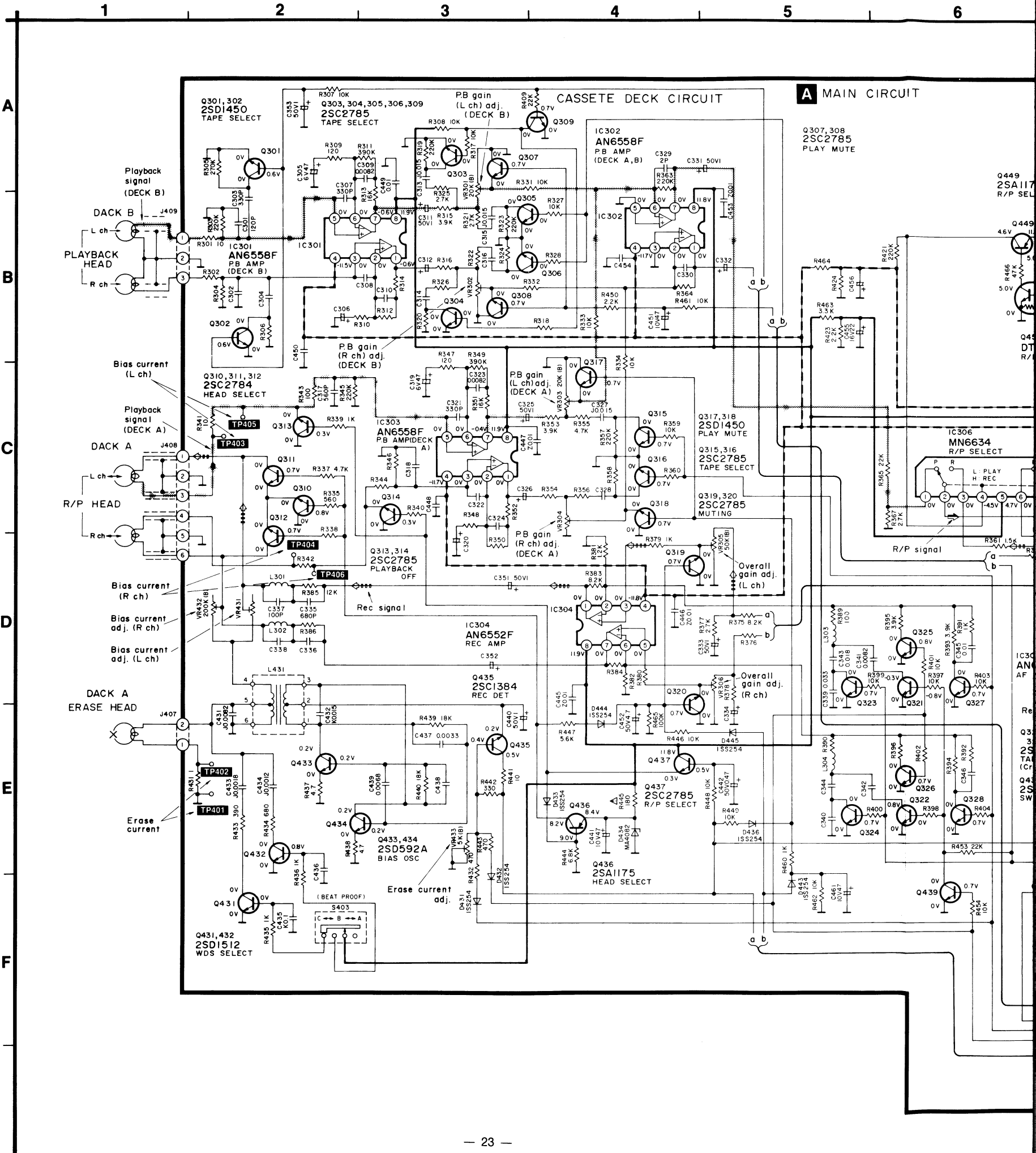
- 1. **S301** : DECK A CrO₂ switch
- 2. **S302** : DECK A Metal switch
- 3. **S303** : DECK A Muting switch
- 4. **S304** : DECK A Rec switch
- 5. **S305** : DECK A Motor switch
- 6. **S306** : DECK B ATS switch
- 7. **S307** : DECK B Muting switch
- 8. **S308** : DECK B Motor switch
- 9. **S401** : Editing mode switch in "off" position
- 10. **S402** : Dolby NR switch in "off" position
- 11. **S403** : Beat proof switch in "A" position
- 12. **S501** : Super Bass switch in "off" position
- 13. **S700** : Power switch in "on" position
- 14. **S801~805** : Input selector switch
[S801: TAPE, S802: AUX]
[S803: CD, S804: TUNER]
[S805: PHONO]
- 15. **S806** : Mute switch
- 16. **S807, 808** : Volume control switch
[S807: DOWN, S808: UP]
- 17. **S809, 810** : Balance control switch
[S809: LEFT, S810: RIGHT]
- 18. **signal line**
--- : Tape playback signal (DECK A)
--- : Tape playback signal (DECK B)
--- : Tape Record signal
--- : R/P signal
--- : Positive voltage lines
--- : Negative voltage lines

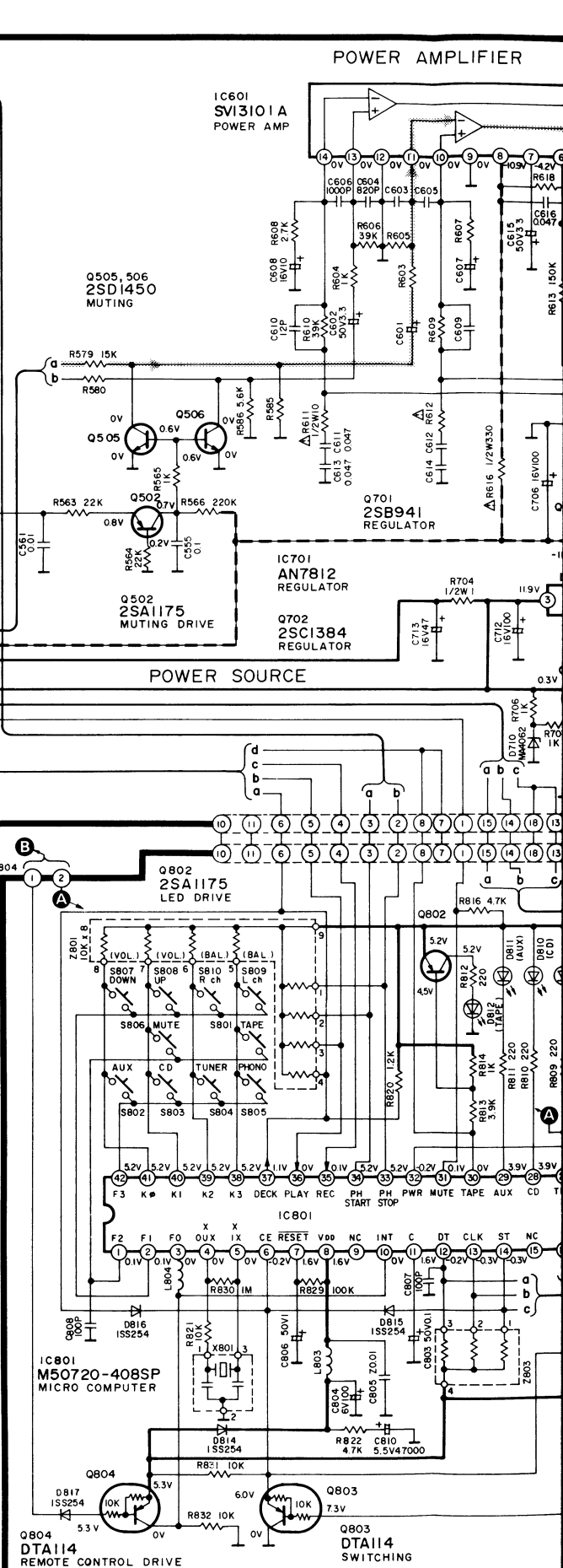
19. Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts. Indicated voltage values are the standard values for the unit in the stop mode measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on internal impedance of the DC circuit tester.

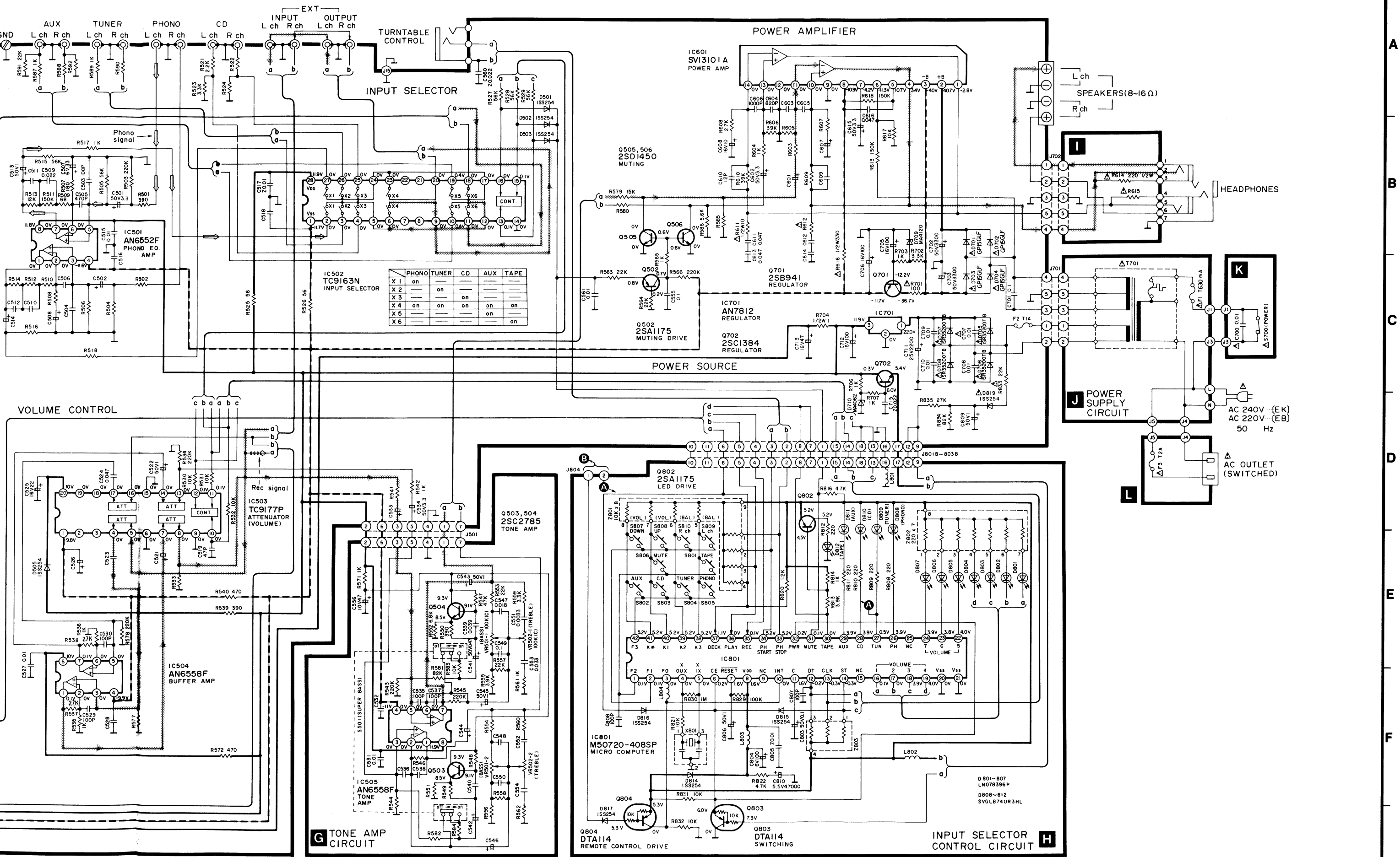
* **Caution!**
IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with aluminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 AN6552F AN6558F TC9177P TA7770N TC9163N M50720-408SP	8-pin 20-pin 24-pin 28-pin 42-pin	 SVI3101A	 MN6634 9-pin
 2SA1175 DTC144A DTC124ESTP DTA114ESTP	 2SC2785F	 2SA684, 2SD1512R 2SC1384	 2SB941
 MA4082, MA4062 MA4120	 LN078396P	 SVGLB74UR3HL	 AN7812
 MA165, GP15GLF SVDISR35200A			







PRINTED CIRCUIT BOARDS

