

Service Manual

Cassette Deck

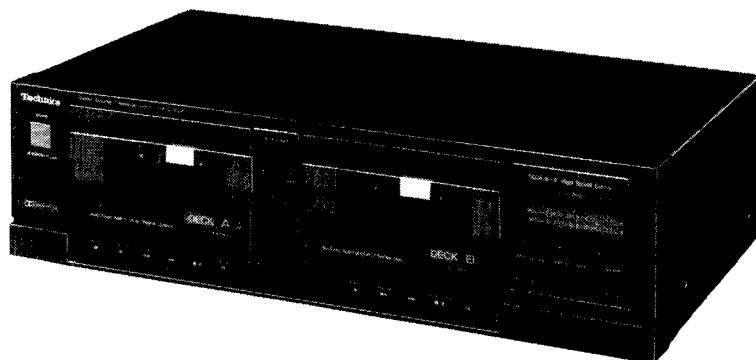
Dolby NR-Equipped
Stereo Double Cassette Deck

RS-D190W



Color

(K)...Black Type



Area

Color	Area
(K)	(E).....Continental Europe.
(K)	(EK).....United Kingdom.
(K)	(EG).....F.R. Germany.
(K)	(EH).....Holland.
(K)	(XA).....Asia, Latin America, Middle Near East, Africa and Oceania.
(K)	(XL).....Australia.

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
(DECK A) REC/PLAY	Solid Permalloy head
Erasing	Double-gap ferrite head
(DECK B) PLAY	Solid Permalloy head
Motors	
(DECK A) Capstan/reel table drive	
2 speed electronically controlled DC motor	
(DECK B) Capstan/reel table drive	
2 speed electronically controlled DC motor	
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1-7/8 ips)
Frequency response (w/o Dolby N.R.)	
METAL	20 Hz~16 kHz
	30 Hz~15 kHz (DIN)
CrO ₂	20 Hz~15 kHz
	30 Hz~15 kHz (DIN)
NORMAL	20 Hz~15 kHz
	30 Hz~15 kHz (DIN)
S/N	(signal level = max recording level, CrO ₂ type tape)
Dolby B NR on	66 dB (CCIR)
NR off	56 dB (A weighted)

Wow and flutter (XA, XL)	0.1% (WRMS)
(Except XA, XL)	0.08% (WRMS) ±0.2% (DIN)

Fast Forward and Rewind Time
Approx. 105 seconds with C-60 cassette tape

Input sensitivity and impedance	
LINE	60 mV/47 kΩ
Output voltage and impedance	
LINE	400 mV/3.2 kΩ

■ GENERAL

Power consumption	18W
Power supply	
For Australia and United Kingdom	AC 50 Hz/60 Hz, 240V
For continental Europe	AC 50 Hz/60 Hz, 220V
For others	AC 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensions (W×H×D)	430 × 120 × 228 mm (16-15/16" × 4-23/32" × 8-31/32")
Weight	3.8 kg (8.4 lb.)

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

* Dolby noise reduction manufactured under license from
Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trade marks of Dolby
Laboratories Licensing Corporation.

Technics

Matsushita Electric Industrial Co., Ltd.

Central P.O. Box 288, Osaka 530-91, Japan

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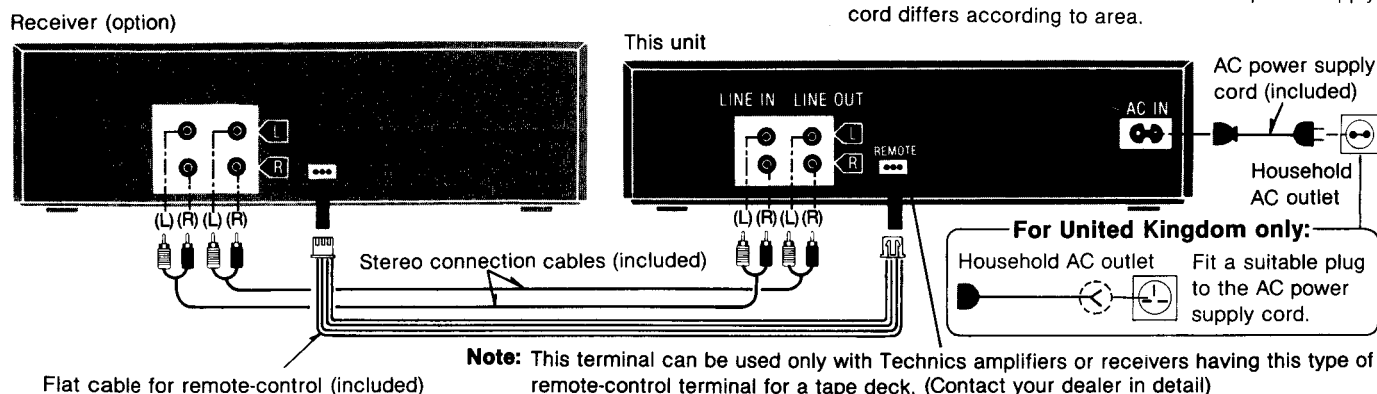
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HOW TO CONNECTION

Placement Hints

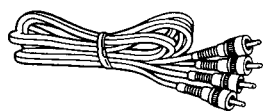
If this unit is placed near a stereo receiver, a "hum" noise may be heard during tape playback, recording, or AM reception of the receiver.
If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

The configuration of the AC outlet and AC power supply cord differs according to area.

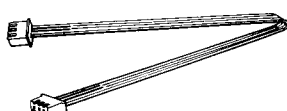


ACCESSORIES

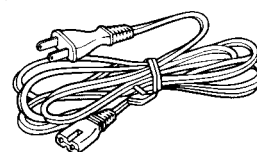
- Stereo connection cables..... 2
- Flat cable for remote-control 1
- AC power supply cord 1



SJP2201



SWKST11M-1



SFDAC05E03.... (E, EG, EH)
SJA188 (EK)
SJA163 (XL)
SJA185 (XA)

- AC plug adaptor..... 1
RJP120ZBS-H

LOCATION OF CONTROLS

Power "standby" switch (power "standby" on)

This switch turns on and off the secondary circuit power only. The unit is in the "stand-by" condition when this switch is set to the "standby" position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

Tape-select indicators (Auto Tape Select)

The tape selector setting changes automatically, and the indicator indicates the type of tape being used in "DECK A".

"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".

Editing tape-speed selector (editing speed)

Press to select the tape speed for edit-recording.

Editing/auto space switch (editing/auto space)

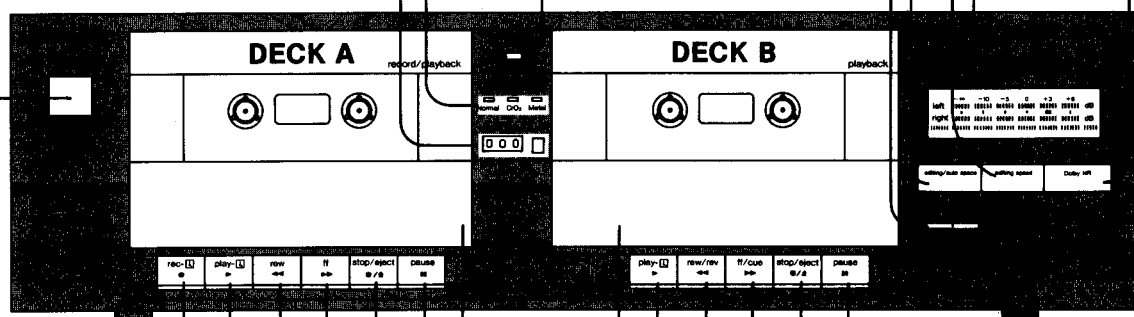
Recording level control (rec level)

Recording indicator (rec indicator)

Level meters (peak level)

During recording, these meters indicate the recording level. The level is adjusted by using the recording level control. During playback, they indicate the level of the recorded sound.

Dolby noise-reduction switch (Dolby NR)



Record button (rec / ●)

Playback button (play / ►)

Rewind button (rew / ◀◀)

Fast-forward button (ff / ►►)

Stop/eject button (stop/eject / ■ / ▲)

Pause button (pause / ||)

Cassette holder

Pause button (pause / ||)

Stop/eject button (stop/eject / ■ / ▲)

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

Fast-forward/cue button (ff/cue / ►►)

Rewind/review button (rew/rev / ◀◀)

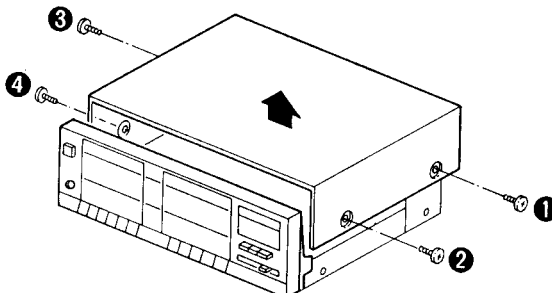
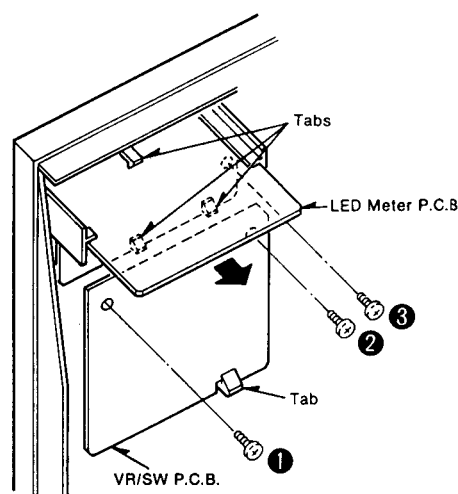
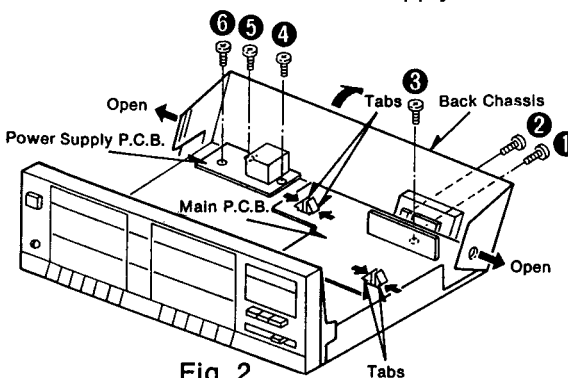
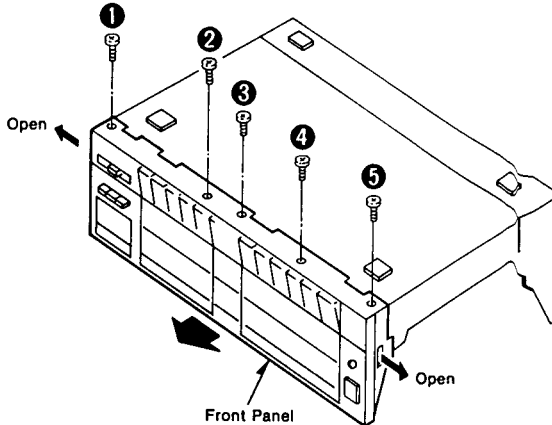
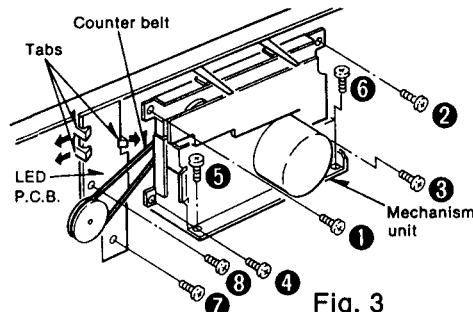
Playback button (play / ►)

Cassette holder

DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	How to remove the cabinet	Ref. No. 4	How to remove the LED meter P.C.B. and VR/SW P.C.B.
Procedure 1	Remove the 4 screws (①~④).	Procedure 1 → 2 → 4	- Remove the 2 screws (①, ②). - Push the one tab aside, and then remove the VR/SW P.C.B. - Remove the one screw (③). - Push the 3 tabs aside, and then remove the LED meter P.C.B.
 Fig. 1		 Fig. 4	
Ref. No. 2	How to remove the Main P.C.B. and Power Supply P.C.B.	Ref. No. 5	How to remove the LED P.C.B.
Procedure 1 → 2	- Remove the 2 screws (①, ②). - Open the side of back chassis, and then pull down it. - Remove the one screw (③). - Remove the 4 tabs aside, and then remove the Main P.C.B. - Remove the 3 screws (④~⑥), and then remove the Power Supply P.C.B.	Procedure 1 → 2 → 3 → 5	- Remove the 2 screws (⑦, ⑧). (Fig. 3) - Remove the 3 tabs aside. (Fig. 3)
 Fig. 2		 Fig. 5	
Ref. No. 3	How to remove the Mechanism unit (DECK A/B)	Ref. No. 6	
Procedure 1 → 2 → 3	- Remove the 6 screws (①~⑥). - Remove the counter belt (for mechanism unit of DECK A). - Push the eject button, and then remove the Mechanism unit.	Procedure 1 → 3 → 4 → 5 → 6	
 Fig. 3		- Remove the 5 screws (①~⑤). - Open the sides of Front panel, and then pull it to yourself.	

MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition

- Recording level control; Maximum
- Edit-recording/auto space switch; Off
- NR switch; Off
- Editing tape speed selector; X1

Measuring instrument

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

Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

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

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

- Playback gain adjustment (315Hz, 0dB); 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 (DECK A, B)

1. Playback the azimuth adjusted part(8kHz, -20dB) 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 with L-CH and R-CH, find a position where the outputs of L-CH and R-CH are balanced, and then make the adjustment.)
2. At the same time, obtain a lissajous waveform and eliminate phase deflection.
3. After adjustment, lock the tape guide height and angle adjustment screws.

Playback Head: DECK B
Record/Playback Head: DECK A

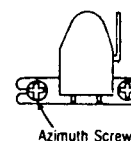


Fig. 1

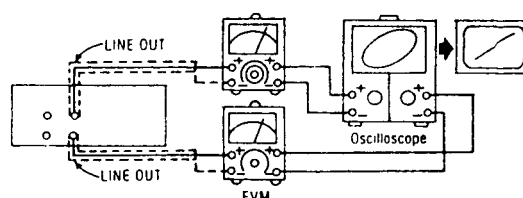


Fig. 2

TAPE SPEED ADJUSTMENT (DECK A, B)

Normal speed

1. Set the editing tape speed selector to "X1".
2. Playback the middle part of the test tape (QZZCWAT).
3. Adjust Deck A=VR802 and Deck B=VR801 so that the output is within the standard.

High speed

4. Set the editing tape speed selector to "X2" and connect the Deck A=TP1 and TPN1, Deck B=TP2 and TPN2.
5. Playback the middle part of the test tape (QZZCWAT).
6. Adjust Deck A=VR803 so that the output is within the standard.
7. Open the Deck A=TP1 and TPN1, Deck B=TP2 and TPN2.

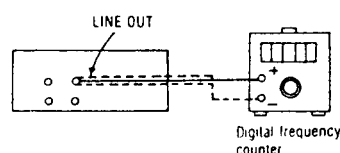


Fig. 3

Standard value: 3000 $\pm$ 15 Hz (Normal), 6000 $\pm$ 600 Hz (High)

PLAYBACK FREQUENCY RESPONSE (DECK A, B)

1. Playback the playback frequency response part (315Hz, 12.5kHz ~ 63Hz, -20dB) of the test tape (QZZCFM).
2. Check that the frequency is within the range shown in Fig. 5 for both L-CH and R-CH.

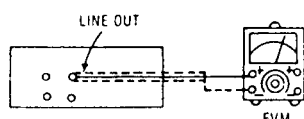


Fig. 4

Playback frequency response chart

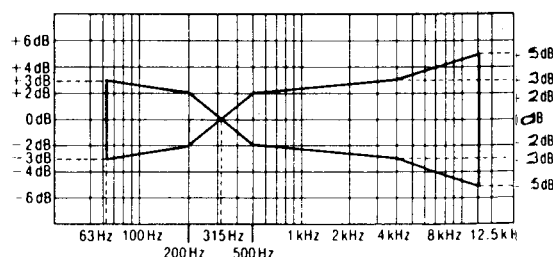


Fig. 5

PLAYBACK GAIN ADJUSTMENT (DECK A, B)

1. Playback the playback gain adjusted part (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck B=VR1 (L-CH) [[VR2 (R-CH)]] and Deck A=VR3 (L-CH) [[VR4 (R-CH)]] so that the output is within the standard.

Standard value: $0.4V \pm 0.5dB$

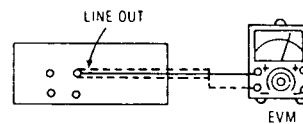


Fig. 6

OVERALL FREQUENCY RESPONSE

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1 kHz, -20dB) through an attenuator.
3. Attenuate the signal by 20dB and adjust the frequency from 50Hz~10kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in Fig. 8 in comparison to the reference frequency (1 kHz).
6. If it is not within the standard range, adjust VR301 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
7. Repeat steps 2~6 above using the CrO₂ tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
8. Assure that the level is within the range shown in Fig. 9.

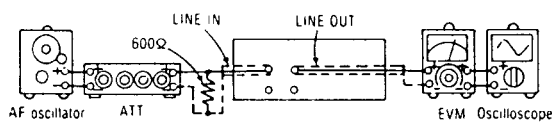


Fig. 7

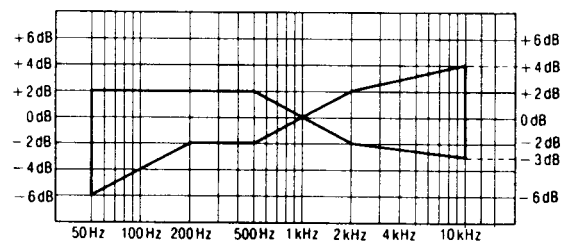
Normal Overall frequency response chart (NR OUT)

Fig. 8

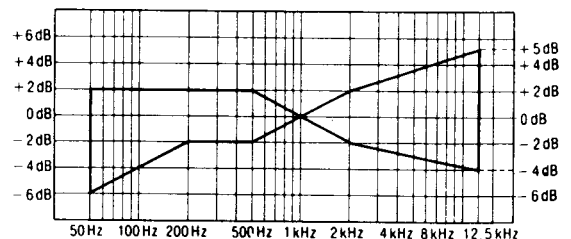
CrO₂-Metal Overall frequency response chart (NR OUT)

Fig. 9

OVERALL GAIN ADJUSTMENT

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1kHz, -20dB). Attenuate the output so that its level becomes 0.4V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust VR5 (L-CH) and VR6 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: $0V \pm 0.5dB$

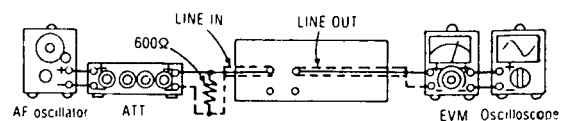
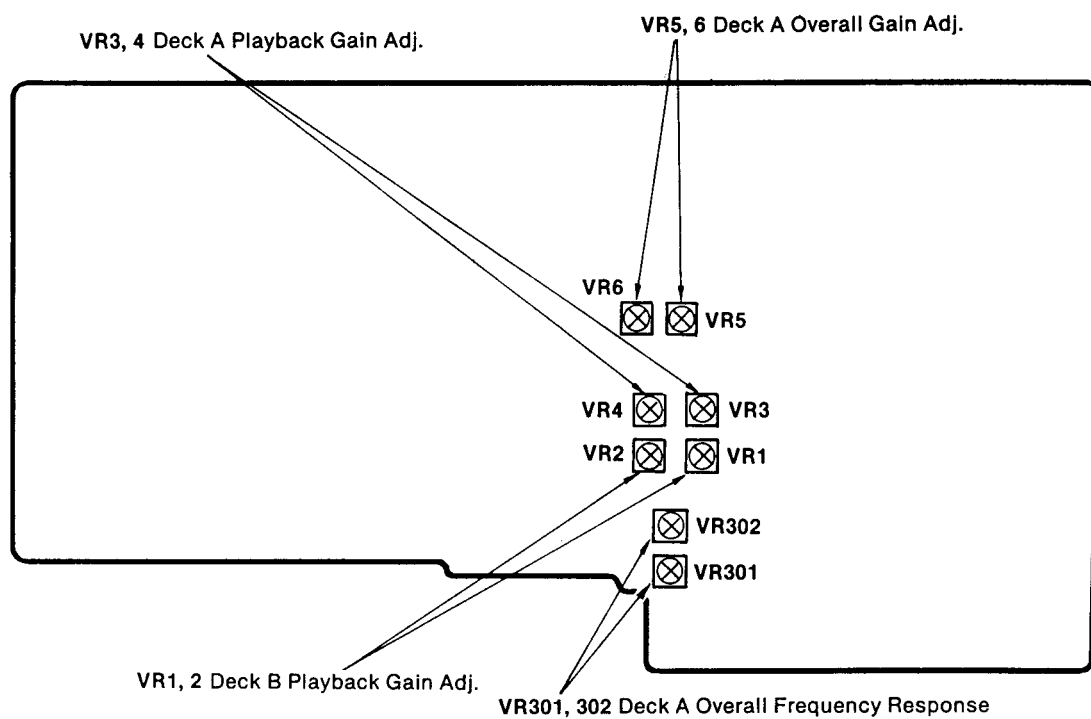


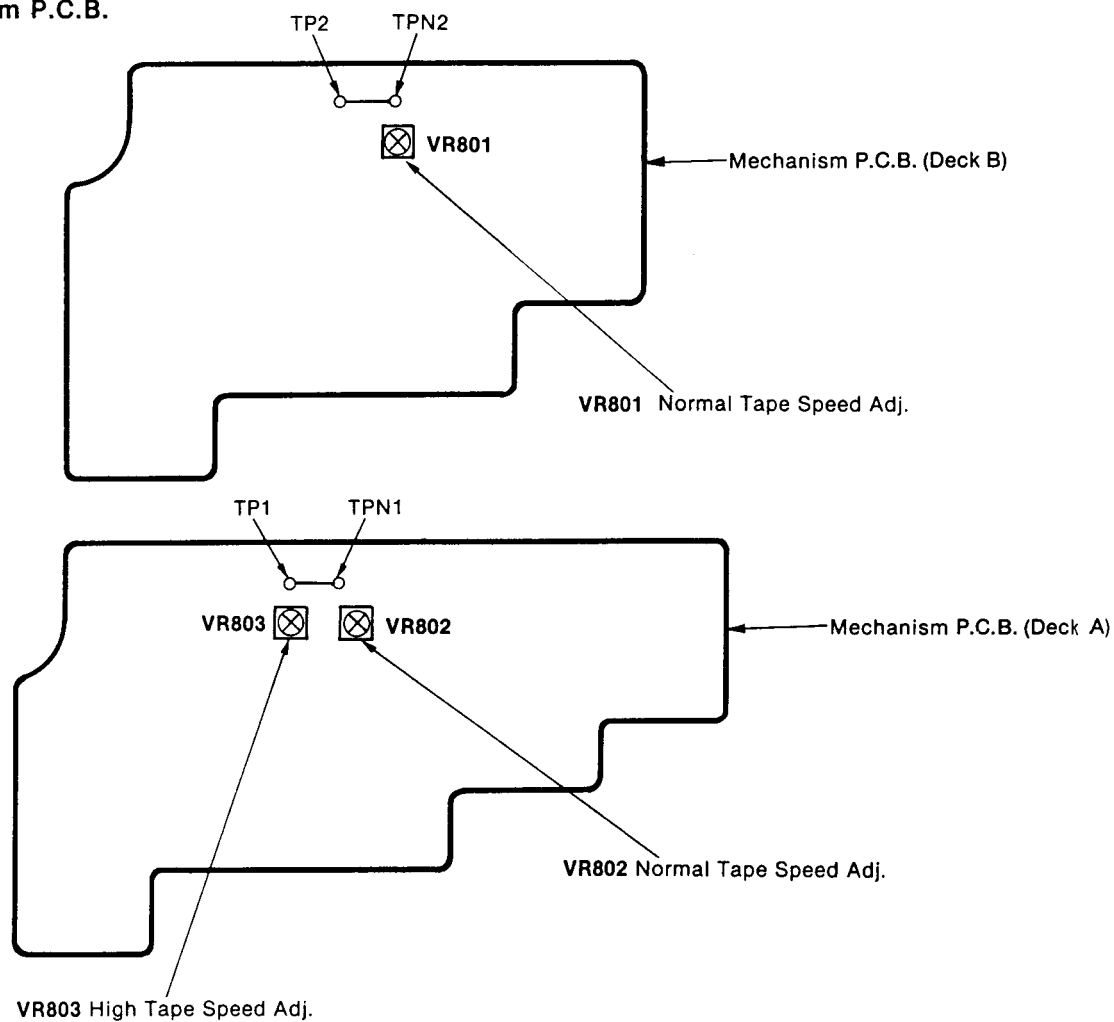
Fig. 10

• Adjustment Points

• Main P.C.B.



• Mechanism P.C.B.



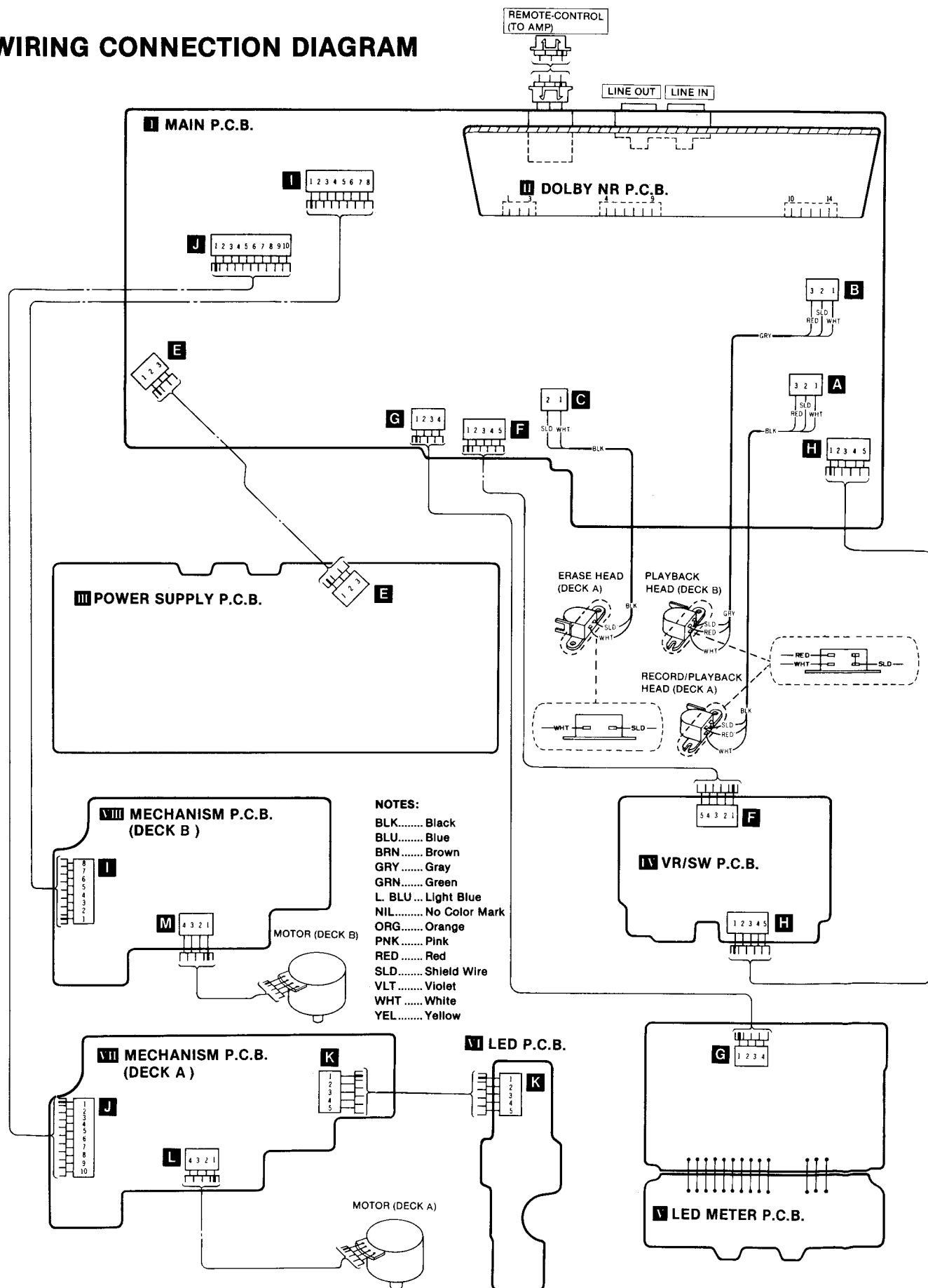
■ MICROCOMPUTER TERMINAL FUNCTION

(IC801: MN1402STO)

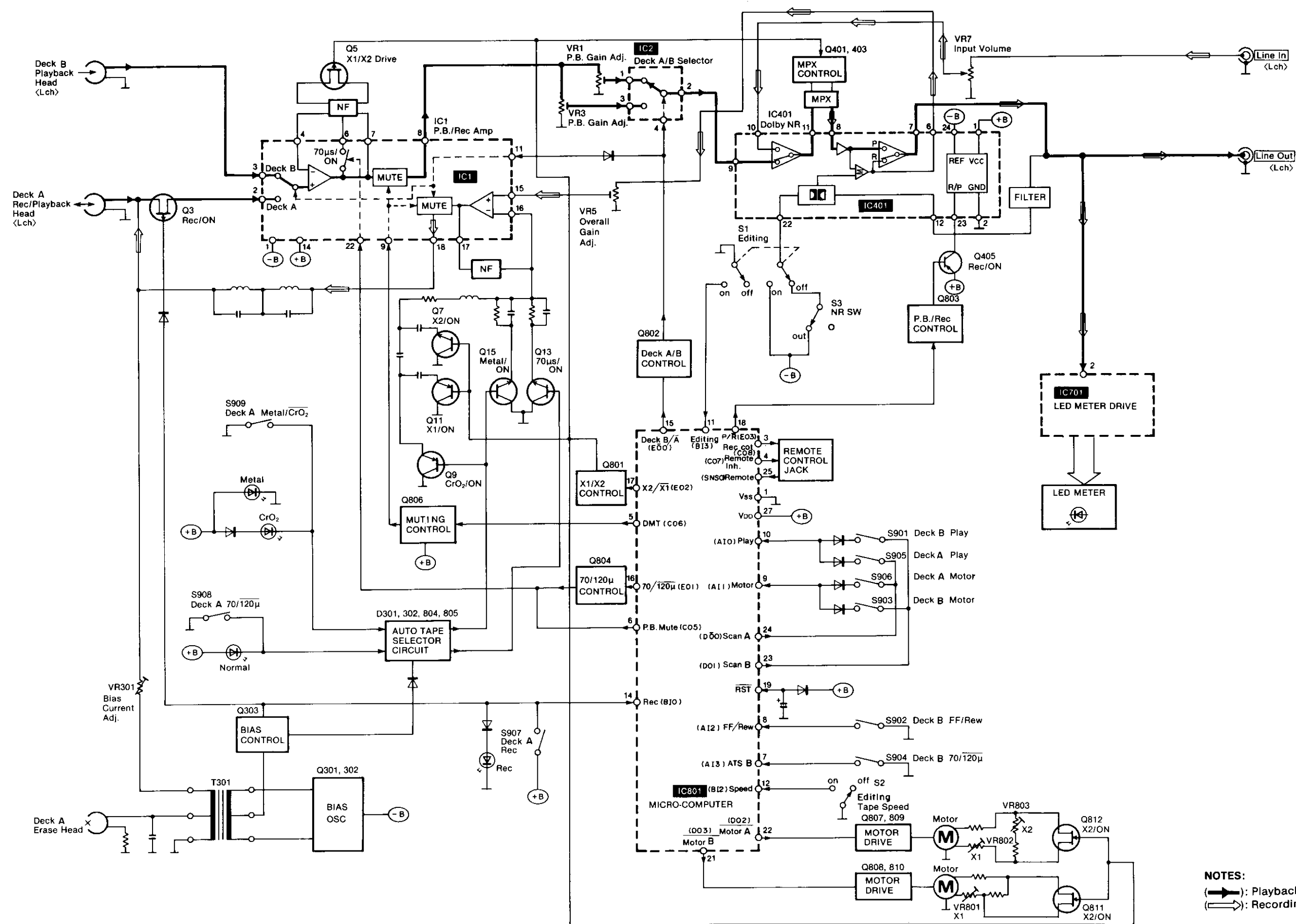
Terminal No.	Symbol	In/Out	Name	Function/operation
1	V _{SS}	—	—	• Connection to GND.
2	CO9	—	—	• Non connection.
3	CO8	Output	REC Prescript signal output	• "H" when LINE IN is REC mode. • "L" when LINE IN is other mode.
4	CO7	Output	Remote control signal cancellation output	(a) LINE IN REC mode (Deck A). PLAY mode (Deck A, Deck B). } ... "H" (b) EDITING mode (Deck A, Deck B). } ... "L" Except (a) mode.
5	CO6	Output	Direct muting (DMT) signal output	• "L" in mute on (STOP, FF/REW and each selector), "H" in mute off (REC, PLAY). • DMT Output timing of each selector.
6	CO5	Output	Muting off signal output of playback AMP	• Deck B "L" in CUE/REV, "H" in other.
7	AI3	Input	Reading of input switch state deck B auto tape selector (S904)	• "L" when auto tape selector is on mode. • "H" when auto tape selector is off mode.
8	AI2	Input	Reading of input switch state deck B FF/REW (S902)	• "L" when FF/REW switch is on mode. • "H" when FF/REW switch is off mode.
9	AI1	Input	Reading of input switch state deck A, deck B motors (S906, S903)	• DO0 output (Scan A) signal→"L" Deck A... "L" in motor switch on, "H" in motor switch off. • DO1 output (Scan B) signal→"L" Deck B... "L" in motor switch on, "H" in motor switch off.
10	AI0	Input	Reading of input switch state deck A, deck B PLAY (S905, S901)	• DO0 output (Scan A) signal→"L" Deck A... "L" in PLAY switch on, "H" in PLAY switch off. • DO1 output (Scan B) signal→"L" Deck B... "L" in PLAY switch on, "H" in PLAY switch off.
11	BI3	Input	Reading of input switch state editing (S1)	• "L" when editing switch is on mode. • "H" when editing switch is off mode.
12	BI2	Input	Reading of input switch state Tape speed selector (S2)	• "L" when tape speed selector is on mode. • "H" when tape speed selector is off mode.

Terminal No.	Symbol	In/Out	Name	Function/operation
13	BI1	Input	Reading of input switch state deck A auto tape selector (S908)	• "L" when auto tape selector is on mode. • "H" when auto tape selector is off mode.
14	BI0	Input	Reading of input switch state deck A REC (S907)	• "H" when REC switch is on mode. • "L" when REC switch is off mode.
15	EO0	Output	Mode selector deck A	• "L" in PLAY mode, "H" in other mode.
16	EO1	Output	Playback equalizer (120 μ s/70 μ s) selector	• "L" in 120 μ s mode, "H" in 70 μ s mode.
17	EO2	Output	Tape speed (X1/X2) selector	• "L" in normal speed (X1), "H" in high speed (X2).
18	EO3	Output	Dolby IC mode selector (REC/PLAY)	• "L" in REC mode, "H" in PLAY mode.
19	$\overline{\text{RST}}$	Input	Reset terminal	• Used to reset the microcomputer when power is thrown in. • Reset at "L".
20	TST	—	—	• Connection to GND.
21	DO3	Output	Motor selector deck B	• "H" in motor deck B off, "L" in motor deck B on.
22	DO2	Output	Motor selector deck A	• "H" in motor deck A off, "L" in motor deck A on.
23	DO1	Output	Scan B	• Scan signal for reading of PLAY switch input.
24	DO0	Output	Scan A	• Scan signal for reading of PLAY switch input.
25	SNS0	Input	Remote control signal input	• Input of serial signal from remote control jack.
26	SNS1	—	—	• Non connection.
27	V _{DD}	—	Power supply terminal	• Operative on 5 $\pm$ 0.5 volts.
28	OSC	Input	Clock Oscillation	• Clock oscillation of about 300kHz.

WIRING CONNECTION DIAGRAM



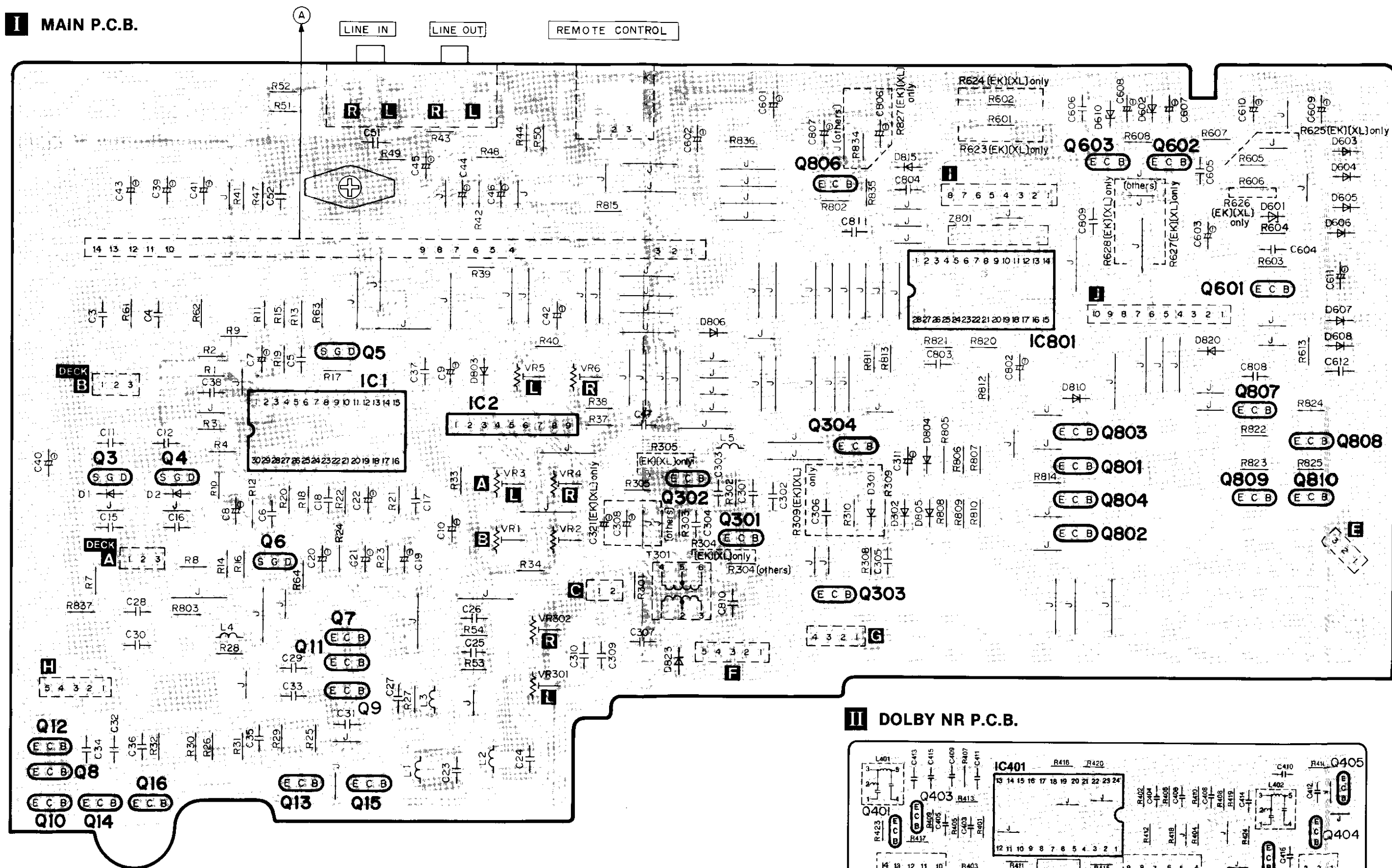
BLOCK DIAGRAM



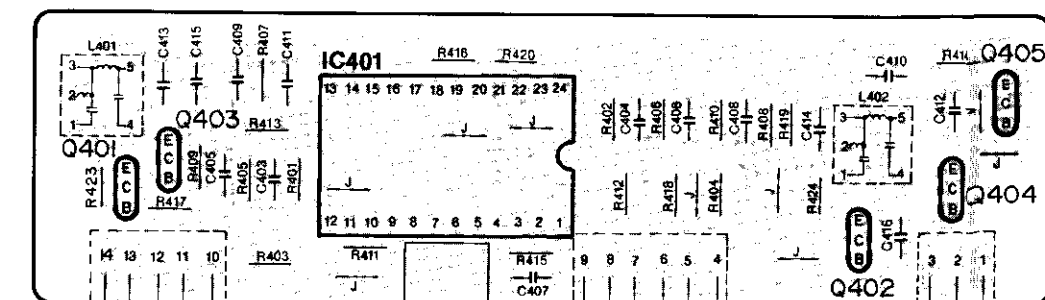
NOTES:
(→): Playback signal
(⇌): Recording signal

PRINTED CIRCUIT BOARDS

I MAIN P.C.B.

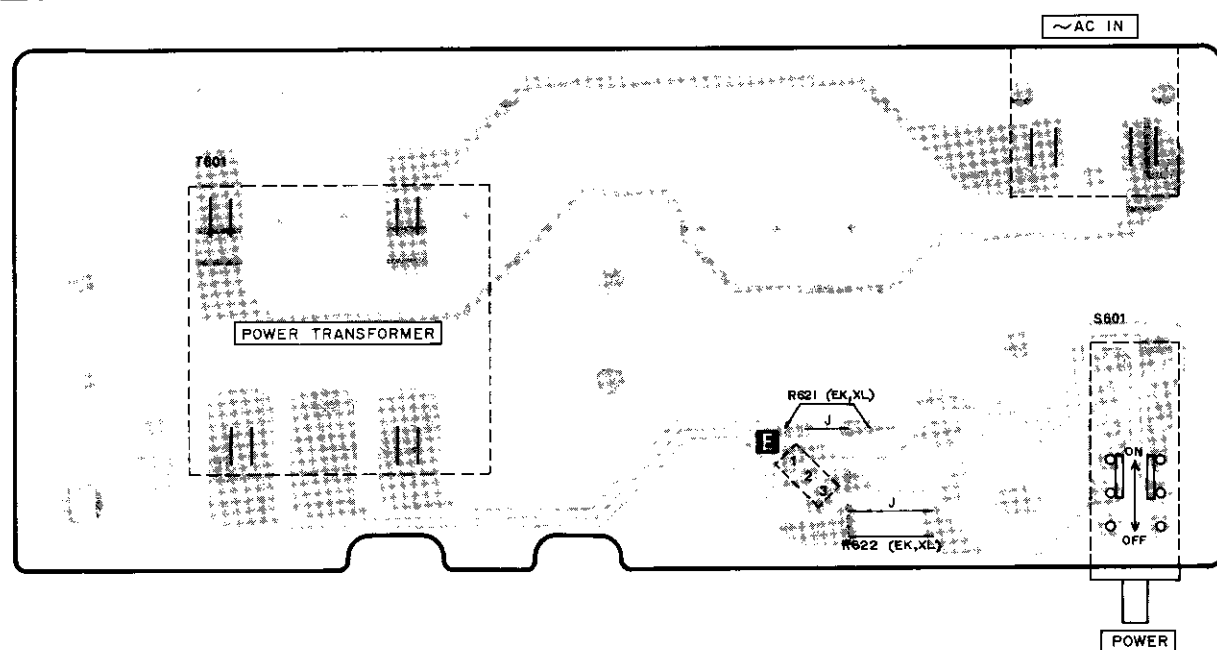


II DOLBY NR P.C.B.

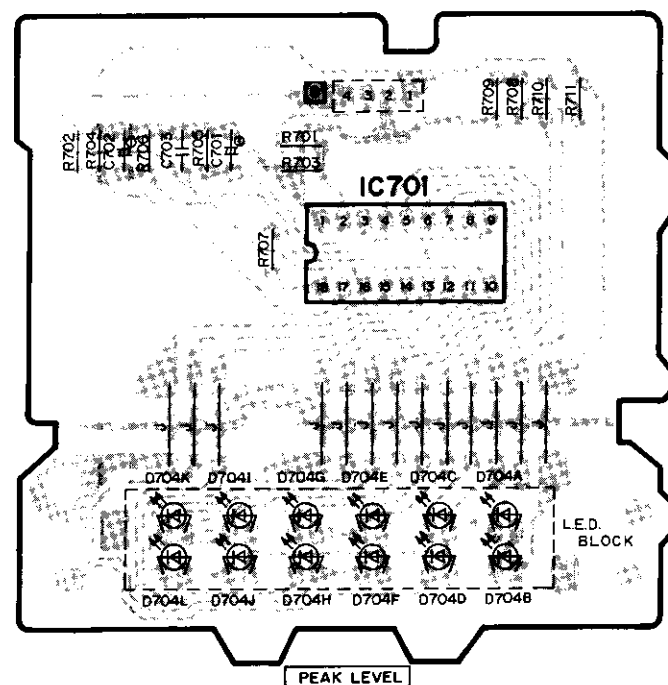


(To Main P.C.B.)

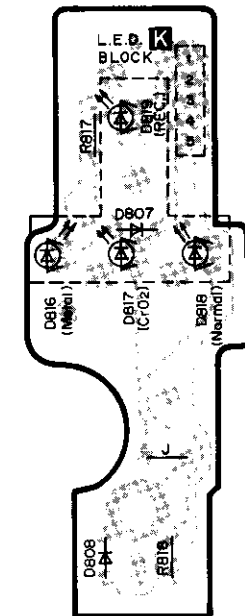
III POWER SUPPLY P.C.B. (Except [XA])



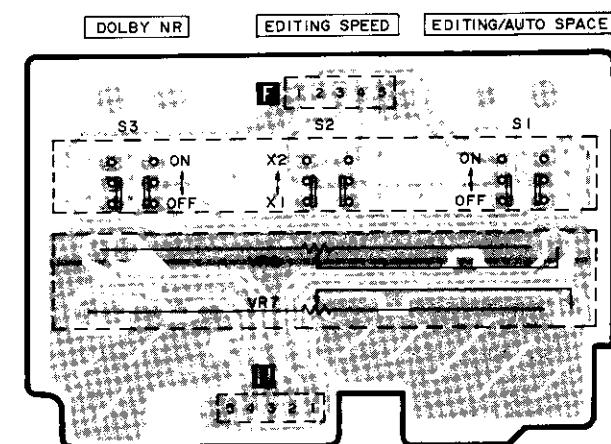
V LED METER P.C.B.



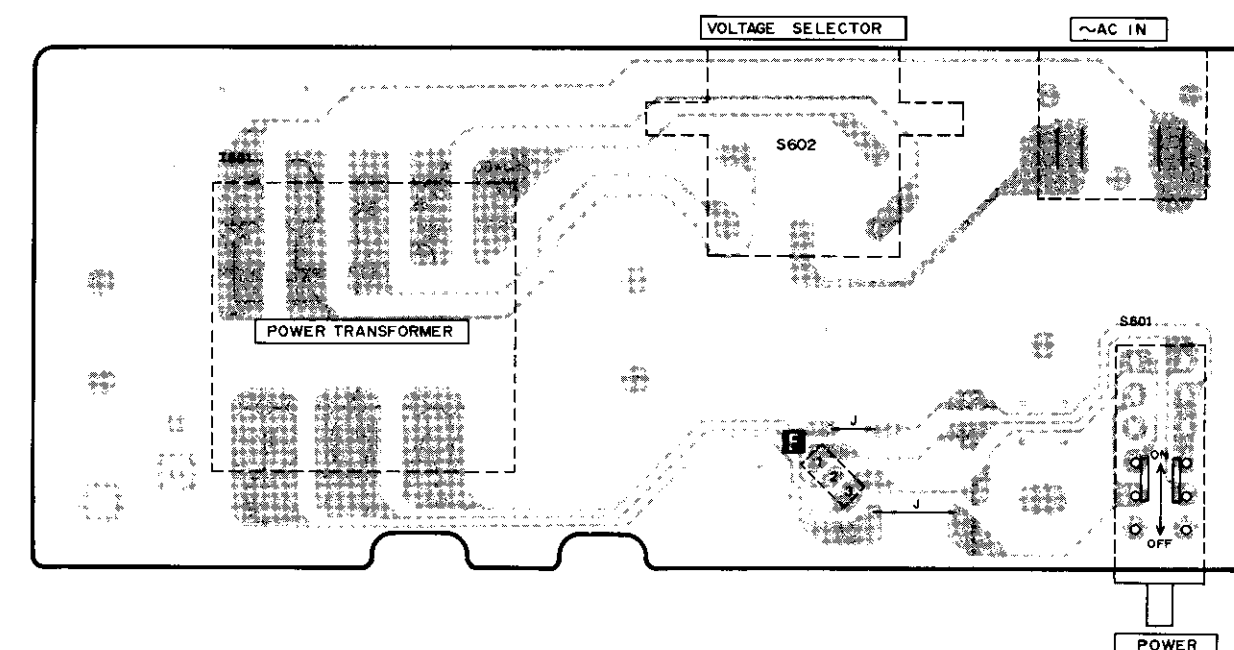
VI LED P.C.B.



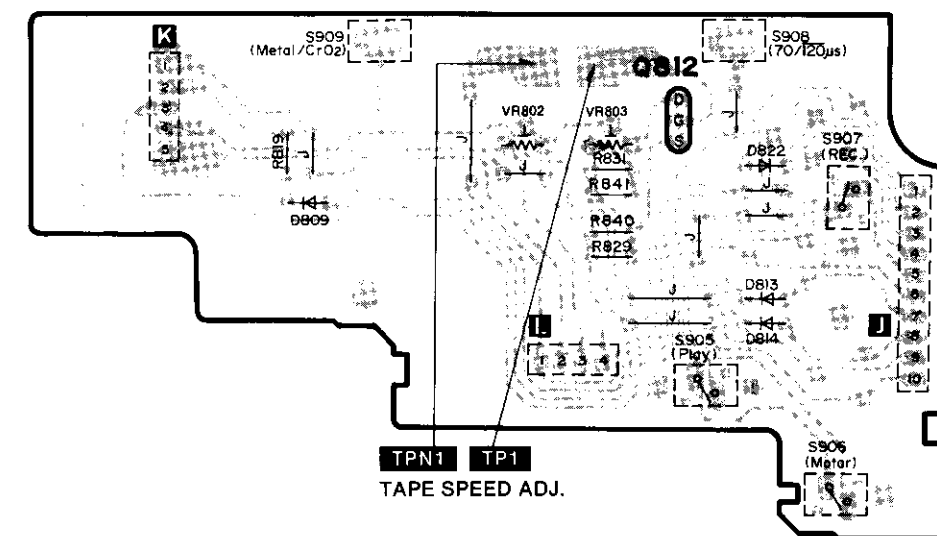
IV VR/SW P.C.B.



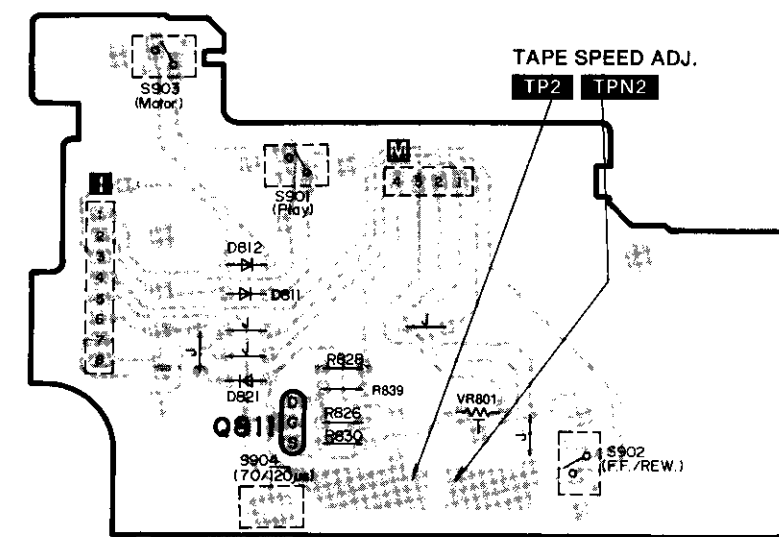
III POWER SUPPLY P.C.B. ([XA] only)

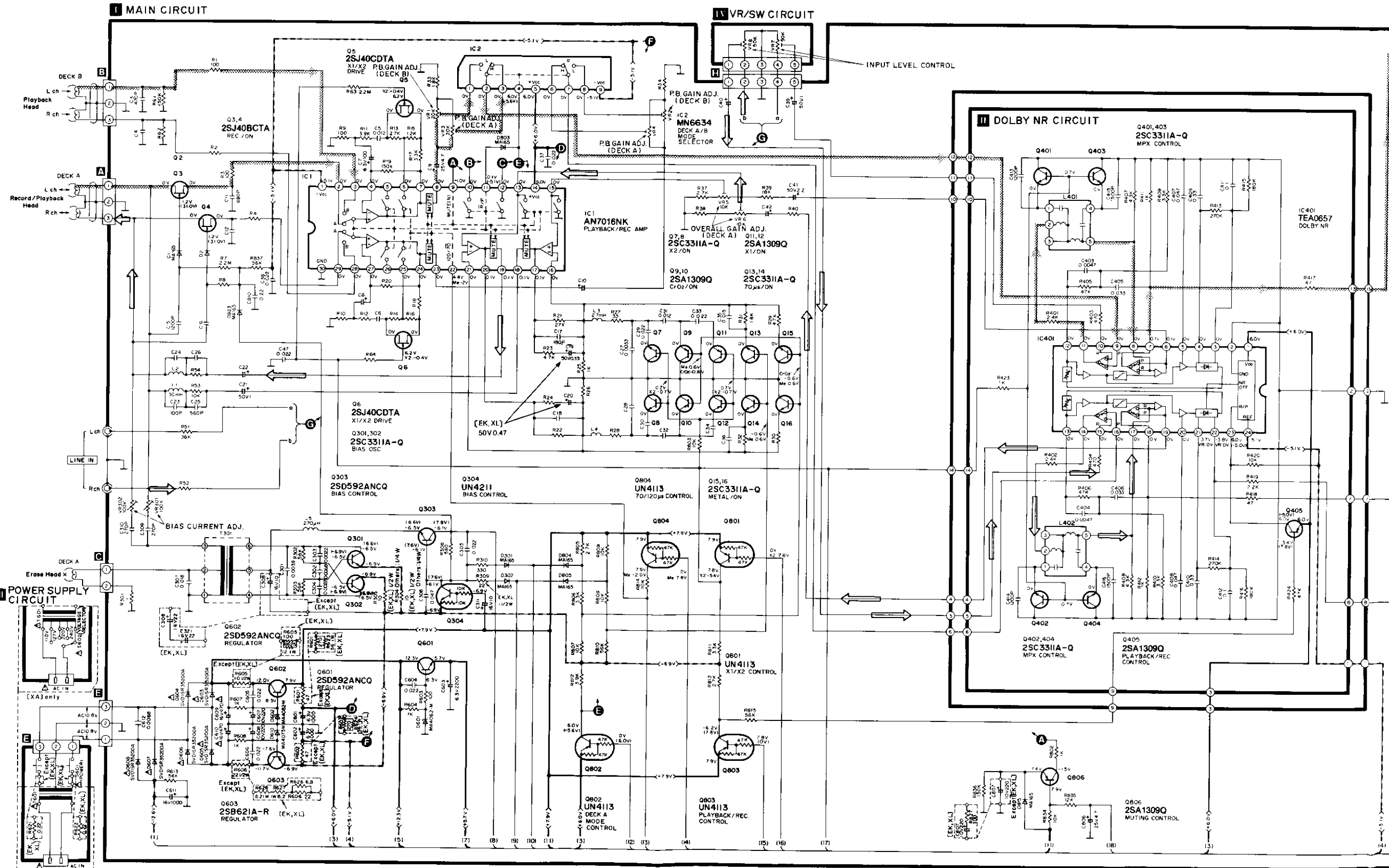


VII MECHANISM P.C.B. (DECK A)



VIII MECHANISM P.C.B. (DECK B)





SCHEMATIC DIAGRAM

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

Notes:

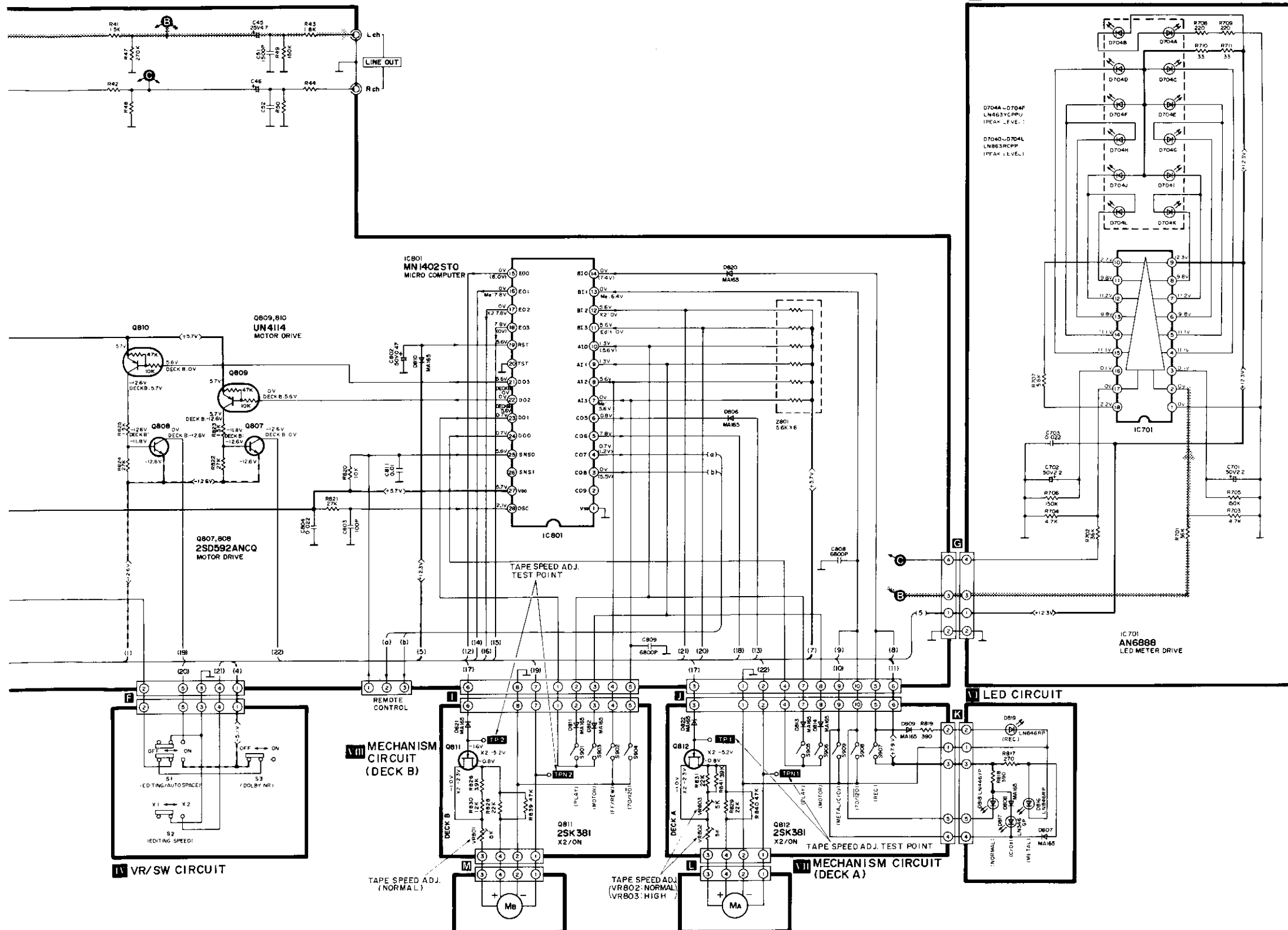
- S1 : Editing/Auto space switch in "off" position.
- S2 : Editing speed selector in "X1" position.
- S3 : Dolby NR switch in "off" position.
- S601 : Power switch in "on" position.
- S602 : Voltage selector in "240V" position. (XA only)
- S901 : DECK B Play switch in "off" position.
- S902 : DECK B FF/REW switch in "off" position.
- S903 : DECK B Motor switch in "off" position.
- S904 : DECK B ATS (70/120μ) switch in "off" position.
- S905 : DECK A Play switch in "off" position.
- S906 : DECK A Motor switch in "off" position.
- S907 : DECK A Rec. switch in "off" position.
- S908 : DECK A ATS (Metal/CrO₂) switch in "off" position.
- S909 : DECK A ATS (Metal/CrO₂) 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 (μF) 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 values 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 these components, use only manufacturer's specified parts.

- (—+B—) indicates +B (bias).
- (—B—) indicates -B (bias).
- (→) indicates the flow of the playback signal.
- (→) indicates the flow of the record signal.

* 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.



RESISTORS & CAPACITORS

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. (Refer to the first page for area.)

Parts without these indications can be used for all areas.

Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1K Ω)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470 Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001 μ F)	Tolerance	Peculiarity
ECEA	50	M	330	
Type	Voltage (50V)	Peculiarity	Value (33 μ F)	

● Capacity are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F).● Resistance are in ohms (Ω), unless specified otherwise, 1K=1,000 Ω , 1M=1,000k Ω

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W 12 : 1/2W	J : $\pm 5\%$
ERG : Metal Oxide	14 : 1/4W 25 : 1/4W	F : $\pm 1\%$
ERO : Fuse Type Metal	1A : 1W 18 : 1/8W	G : $\pm 2\%$
ERX : Metal Film	S2 : 1/4W S1 : 1/2W	J : $\pm 5\%$
ERD L : Carbon (chip)	2F : 1/4W 50 : 1/2W	K : $\pm 10\%$
ERO K : Metal Film (chip)	2A : 2W 3A : 3W	M : $\pm 20\%$
ERC : Solid	6G : 1/10W 8G : 1/8W	
ERF : Incombustible Box-Shaped		
ERM : Wire-Wound		
RRJ : Chip Resistor		
ERJ : Chip Resistor		

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

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
RESISTORS(VALUE, WATTAGE)			R47	ERDS2T J274	270K 1/4	R414	ERDS2T J274	270K 1/4
R1	ERDS2T J101	100 1/4	R48	ERDS2T J274	270K 1/4	R415	ERDS2T J184	180K 1/4
R2	ERDS2T J101	100 1/4	R49	ERDS2T J154	150K 1/4	R416	ERDS2T J184	180K 1/4
R3	ERDS2T J101	100 1/4	R50	ERDS2T J154	150K 1/4	R417	ERDS2T J470	47 1/4
R4	ERDS2T J101	100 1/4	R51	ERDS2T J363	36K 1/4	R418	ERDS2T J470	47 1/4
R7	ERDS2T J225	2.2M 1/4	R52	ERDS2T J363	36K 1/4	R419	ERDS2T J222	2.2K 1/4
R8	ERDS2T J225	2.2M 1/4	R53	ERDS2T J103	10K 1/4	R420	ERDS2T J103	10K 1/4
R9	ERDS2T J101	100 1/4	R54	ERDS2T J103	10K 1/4	R423	ERDS2T J102	1K 1/4
R10	ERDS2T J101	100 1/4	R61	ERDS2T J154	150K 1/4	R424	ERDS2T J473	47K 1/4
R11	ERDS2T J392	3.9K 1/4	R62	ERDS2T J154	150K 1/4	R601	ERDS2T J271	270 1/4
R12	ERDS2T J392	3.9K 1/4	R63	ERDS2T J225	2.2M 1/4	(EK, XL)		
R13	ERDS2T J272	2.7K 1/4	R64	ERDS2T J225	2.2M 1/4	R601	ERDS2T J470	47 1/4
R14	ERDS2T J272	2.7K 1/4	R301	ERDS2T J1R0	1 1/4	(E, EG, EH, XA)		
R15	ERDS2T J122	1.2K 1/4	R302	ERDS2T J563	56K 1/4	R602	ERDS2T J271	270 1/4
R16	ERDS2T J122	1.2K 1/4	R303	ERDS2T J563	56K 1/4	(EK, XL)		
R17	ERDS2T J332	3.3K 1/4	R304	ERDS1F J100	10 1/2	R602	ERDS2T J470	47 1/4
R18	ERDS2T J332	3.3K 1/4	(EK, XL)			(E, EG, EH, XA)		
R19	ERDS2T J154	150K 1/4	R304	ERDS2T J100	10 1/4	R603	ERDS2T J101	100 1/4
R20	ERDS2T J154	150K 1/4	(E, EG, EH, XA)			R604	ERDS2T J102	1K 1/4
R21	ERDS2T J273	27K 1/4	R305	ERDS1F J100	10 1/2	R605	ERDS1F J100	10 1/2
R22	ERDS2T J273	27K 1/4	(EK, XL)			(E, EG, EH, XA)		
R23	ERDS2T J472	4.7K 1/4	R305	ERDS2T J100	10 1/4	R605	ERDS2T J101	100 1/4
R24	ERDS2T J472	4.7K 1/4	(E, EG, EH, XA)			(EK, XL)		
R25	ERDS2T J102	1K 1/4	R308	ERDS2T J561	560 1/4	R606	ERDS1F J220	22 1/2
R26	ERDS2T J102	1K 1/4	R309	ERDS1F J220	22 1/2	(E, EG, EH, XA)		
R27	ERDS2T J330	33 1/4	(EK, XL)			R606	ERDS2T J220	22 1/4
R28	ERDS2T J330	33 1/4	R309	ERDS2T J220	22 1/4	(EK, XL)		
R29	ERDS2T J472	4.7K 1/4	(E, EG, EH, XA)			R607	ERDS2T J102	1K 1/4
R30	ERDS2T J472	4.7K 1/4	R310	ERDS2T J331	330 1/4	R608	ERDS2T J102	1K 1/4
R31	ERDS2T J182	1.8K 1/4	R401	ERDS2T J242	2.4K 1/4	R613	ERDS2T J563	56K 1/4
R32	ERDS2T J182	1.8K 1/4	R402	ERDS2T J242	2.4K 1/4	R621	ERQ14LKR22	0.22 1/4
R33	ERDS2T J182	1.8K 1/4	R403	ERDS2T J471	470 1/4	(EK, XL)		
R34	ERDS2T J182	1.8K 1/4	R404	ERDS2T J471	470 1/4	R622	ERQ14LKR22	0.22 1/4
R37	ERDS2T J272	2.7K 1/4	R405	ERDS2T J473	47K 1/4	(EK, XL)		
R38	ERDS2T J272	2.7K 1/4	R406	ERDS2T J473	47K 1/4	R623	ERG1ANJ560	56 1
R39	ERDS2T J183	18K 1/4	R407	ERDS2T J432	4.3K 1/4	(EK, XL)		
R40	ERDS2T J183	18K 1/4	R408	ERDS2T J432	4.3K 1/4	R624	ERG1ANJ560	56 1
R41	ERDS2T J152	1.5K 1/4	R409	ERDS2T J332	3.3K 1/4	(EK, XL)		
R42	ERDS2T J152	1.5K 1/4	R410	ERDS2T J332	3.3K 1/4	R625	ERG1ANJP120S	12 1
R43	ERDS2T J182	1.8K 1/4	R411	ERDS2T J102	1K 1/4	(EK, XL)		
R44	ERDS2T J182	1.8K 1/4	R412	ERDS2T J102	1K 1/4	R626	ERD2FCJ6P8	6.8 1/4
			R413	ERDS2T J274	270K 1/4	(EK, XL)		

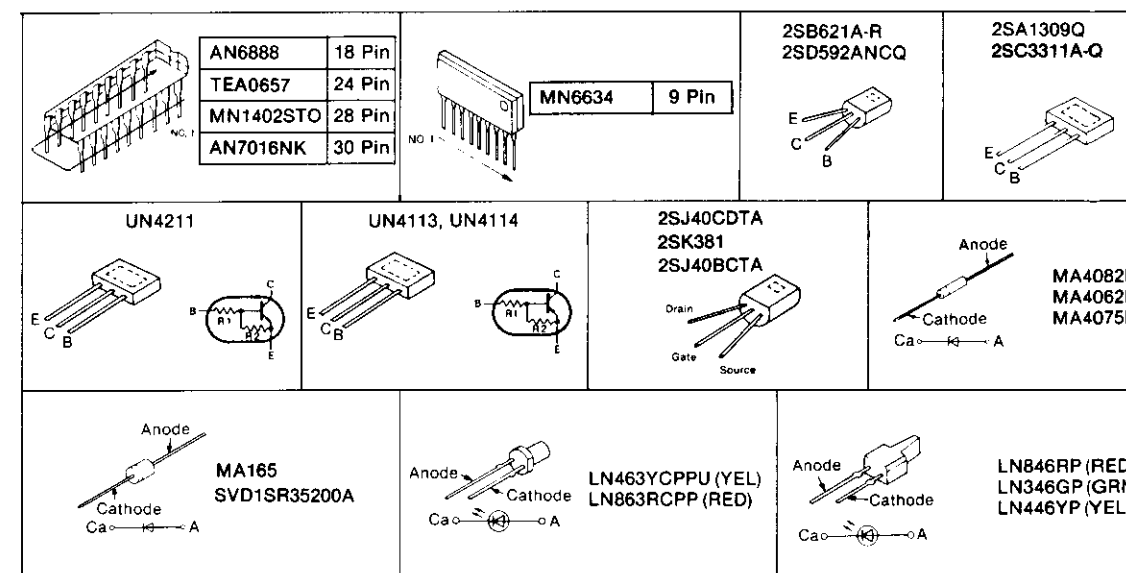
Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
R627	ERX1ANJ8R2	8.2 1	CAPACITORS(VALUE, VOLTAGE)			C52	ECKD1H152KB	1500P 50
(EK, XL)			C3	RCBC1H471KBY	470P 50	C301	ECKD1H892KB	3900P 50
R628	ERX1ANJ8R2	8.2 1	C4	RCBC1H471KBY	470P 50	C302	ECFR1E682KAY	6800P 25
(EK, XL)			C5	ECQB1H123JZ	0.012 50	C303	ECFR1E222KAY	2200P 25
R701	ERDS2T J363	36K 1/4	C6	ECQB1H123JZ	0.012 50	C304	ECFR1E222KAY	2200P 25
R702	ERDS2T J363	36K 1/4	C7	ECEA0JU101	100 6.3	C305	ECKD1H223PF	0.022 50
R703	ERDS2T J472	4.7K 1/4	C8	ECEA0JU101	100 6.3	C306	ECFD1V473KD	0.047 35
R704	ERDS2T J472	4.7K 1/4	C9	ECEA1EK4R7	4.7 25	C307	ECQP1183JZ	0.018 100
R705	ERDS2T J154	150K 1/4	C10	ECEA1EK4R7	4.7 25	C308	ECEA1CKS100	10 16
R706	ERDS2T J154	150K 1/4	C11	ECBA1H681KB5	680P 50	(E, EG, EH, XA)		
R707	ERDS2T J562	5.6K 1/4	C12	ECBA1H681KB5	680P 50	C308	ECEA1CK220	22 16
R708	ERDS2T J221	220 1/4	C15	ECKD1H122KB	1200P 50	(EK, XL)		
R709	ERDS2T J221	220 1/4	C16	ECKD1H122KB	1200P 50	C309	RCBS1H271KBY	270P 50
R710	ERDS2T J330	33 1/4	C17	ECCD1H181K	180P 50	C310	RCBS1H271KBY	270P 50
R711	ERDS2T J330	33 1/4	C18	ECCD1H181K	180P 50	C311	ECEA1CKS100	10 16
R802	ERDS2T J102	1K 1/4	C19	ECEA1HKR33	0.33 50	C321	ECEA1CK220	22 16
R803	ERDS2T J103	10K 1/4	(E, EK, EG, EH)			(EK, XL)		
R805	ERDS2T J272	2.7K 1/4	C19	ECEA1HKR47	0.47 50	C403	ECQB1H472JZ	4700P 50
R806	ERDS2T J332	3.3K 1/4	(XL, XA)			C404	ECQB1H472JZ	4700P 50
R807	ERDS2T J103	10K 1/4	C20	ECEA1HKR33	0.33 50	C405	ECQM1H333JZ	0.033 50
R808	ERDS2T J103	10K 1/4	(E, EK, EG, EH)			C406	ECQM1H333JZ	0.033 50
R809	ERDS2T J103	10K 1/4	(XL, XA)			C407	ECQM1H473JZ	0.047 50
R810	ERDS2T J563	56K 1/4	C20	ECEA1HKR47	0.47 50	C408	ECQM1H473JZ	0.047 50
R811	ERDS2T J332	3.3K 1/4	C21	ECEA1HK010	1 50	C409	ECQV1H334JZ	0.33 50
R812	ERDS2T J392	3.9K 1/4	C22	ECEA1HK010	1 50	C410	ECQV1H334JZ	0.33 50
R813	ERDS2T J272	2.7K 1/4	C23	ECKD2H101KB	100P 500	C411	ECQV1H104JZ	0.1 50
R814	ERDS2T J103	10K 1/4	C24	ECKD2H101KB	100P 500	C412	ECQV1H104JZ	0.1 50
R815	ERDS2T J563	56K 1/4	C25	ECKD1H561KB	560P 50	C413	ECKD1H122KB	1200P 50
R817	ERDS2T J271	270 1/4	C26	ECKD1H561KB	560P 50	C414	ECKD1H122KB	1200P 50
R818	ERDS2T J391	390 1/4	C27	ECQB1H332JZ3	3300P 50	C415	ECKD1H152KB	1500P 50
R819	ERDS2T J391	390 1/4	C28	ECQB1H332JZ3	3300P 50	C416	ECKD1H152KB	1500P 50
R820	ERDS2T J103	10K 1/4	C29	ECQB1H223JZ	0.022 50	C601	ECEA0JS102	1000 6.3
R821	ERDS2T J273	27K 1/4	C30	ECQB1H223JZ	0.022 50	C602	ECEA0JS102	1000 6.3
R822	ERDS2T J273	27K 1/4	C31	ECQB1H123JZ	0.012 50	C603	ECEA0JU222B	2200 6.3
R823	ERDS2T J152	1.5K 1/4	C32	ECQB1H123JZ	0.012 50	C604	ECKD1H223PF	0.022 50
R824	ERDS2T J273	27K 1/4	C33	ECQB1H223JZ	0.022 50	C605	ECKD1H223PF	0.022 50
R825	ERDS2T J152	1.5K 1/4	C34	ECQB1H223JZ	0.022 50	C606	ECKD1H223PF	0.022 50
R826	ERDS2T J392	3.9K 1/4	C35	ECFR1E153KAY	0.015 25	C607	ECEA1AU221	220 10
R827	ERDS2T J101	100 1/4	C36	ECFR1E153KAY	0.015 25	C608	ECEA1AU221	220 10
(EK, XL)			C37	ECKD1H223PF	0.022 50	C609	ECEA1CU471B	470 16
R828	ERDS2T J223	22K 1/4	C38	ECKD1H223PF	0.022 50	C610	ECEA1CU471B	470 16
R829	ERDS2T J223	22K 1/4	C39	ECEA1HK010	1 50	C611	ECEA1CU102B	1000 16
R830	ERDS2T J123	12K 1/4	C40	ECEA1HK010	1 50	C612	ECKT2H682PEL	0.0068 500
R831	ERDS2T J223	22K 1/4	C41	ECEA1HK2R2B	2.2 50	C701	ECEA1HK2R2B	2.2 50
R834	ERDS2T J103	10K 1/4	C42	ECEA1HK2R2B	2.2 50	C702	ECEA1HK2R2B	2.2 50
R835	ERDS2T J123	12K 1/4	C43	ECEA1EK4R7	4.7 25	C703	ECKD1H223PF	0.022 50
R836	ERDS2T J154	150K 1/4	C44	ECEA1EK4R7	4.7 25	C802	ECEA1HKR47	0.47 50
R837	ERDS2T J563	56K 1/4	C45	ECEA1EK4R7	4.7 25	C803	ECCD1H101K	100P 50
R839	ERDS2T J473	47K 1/4	C46	ECEA1EK4R7	4.7 25	C804	ECKD1H223PF	0.022 50
R840	ERDS2T J473	47K 1/4	C47	ECKD1H223PF	0.022 50	C806	ECEA1EK4R7	4.7 25
R841	ERDS2T J393	39K 1/4	C51	ECKD1H152KB	1500P 50	C807	ECEA1AU221	220 10

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. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
INTEGRATED CIRCUITS			D704L	LN863RCPP	L.E.D
IC1	AN7016NK	I.C. PLAY/REC AMP	D803	MA165	DIODE
IC2	MN6634	I.C. DECK A/B SELECTOR	D804	MA165	DIODE
IC401	TEA0657	I.C. DOLBY NR	D805	MA165	DIODE
IC701	AN6888	I.C. LED METER DRIVE	D806	MA165	DIODE
IC801	MN1402ST0	I.C. MICRO COMPUTER	D807	MA165	DIODE
TRANSISTORS			D808	MA165	DIODE
Q3	2SJ40BCTA	TRANSISTOR	D809	MA165	DIODE
Q4	2SJ40BCTA	TRANSISTOR	D810	MA165	DIODE
Q5	2SJ40CDTA	TRANSISTOR	D811	MA165	DIODE
Q6	2SJ40CDTA	TRANSISTOR	D812	MA165	DIODE
Q7	2SC3311A-Q	TRANSISTOR	D813	MA165	DIODE
Q8	2SC3311A-Q	TRANSISTOR	D814	MA165	DIODE
Q9	2SA1309Q	TRANSISTOR	D815	MA165	DIODE
Q10	2SA1309Q	TRANSISTOR	D816	LN846RP	L.E.D
Q11	2SA1309Q	TRANSISTOR	D817	LN346GP	L.E.D
Q12	2SA1309Q	TRANSISTOR	D818	LN446YP	L.E.D
Q13	2SC3311A-Q	TRANSISTOR	D819	LN846RP	L.E.D
Q14	2SC3311A-Q	TRANSISTOR	D820	MA165	DIODE
Q15	2SC3311A-Q	TRANSISTOR	D821	MA165	DIODE
Q16	2SC3311A-Q	TRANSISTOR	D822	MA165	DIODE
Q301	2SC3311A-Q	TRANSISTOR	D823	MA165	DIODE
Q302	2SC3311A-Q	TRANSISTOR	VARIABLE RESISTORS		
Q303	2SD592ANCQ	TRANSISTOR	VR1	EVND4AA00B24	V.R. PB GAIN (DECK B)
Q304	UN4211	TRANSISTOR	VR2	EVND4AA00B24	V.R. PB GAIN (DECK B)
Q401	2SC3311A-Q	TRANSISTOR	VR3	EVND4AA00B24	V.R. PB GAIN (DECK A)
Q402	2SC3311A-Q	TRANSISTOR	VR4	EVND4AA00B24	V.R. PB GAIN (DECK A)
Q403	2SC3311A-Q	TRANSISTOR	VR5	EVND4AA00B14	V.R. OVERALL (DECK A)
Q404	2SC3311A-Q	TRANSISTOR	VR6	EVND4AA00B14	V.R. OVERALL (DECK A)
Q405	2SA1309Q	TRANSISTOR	VR7	EWAPB1X05A54	V.R. INPUT LEVEL CONTROL
Q601	2SD592ANCQ	TRANSISTOR	VR8	EWAPB1X05A54	V.R. INPUT LEVEL CONTROL
Q602	2SD592ANCQ	TRANSISTOR	VR301	EVND4AA00B15	V.R. BIAS CURRENT ADJ.
Q603	2SB621A-R	TRANSISTOR	VR302	EVND4AA00B15	V.R. BIAS CURRENT ADJ.
Q801	UN4113	TRANSISTOR	VR801	EVN49C00YB53	V.R. TAPE SPEED (DECK B)
Q802	UN4113	TRANSISTOR	VR802	EVN49C00YB53	V.R. TAPE SPEED (DECK A)
Q803	UN4113	TRANSISTOR	VR803	EVN49C00YB53	V.R. TAPE SPEED (DECK A)
Q804	UN4113	TRANSISTOR	COILS AND TRANSFORMERS		
Q806	2SA1309Q	TRANSISTOR	L1	SLQX303-1KT	CHOKE COIL
Q807	2SD592ANCQ	TRANSISTOR	L2	SLQX303-1KT	CHOKE COIL
Q808	2SD592ANCQ	TRANSISTOR	L3	SLQX272-1YT	CHOKE COIL
Q809	UN4114	TRANSISTOR	L4	SLQX272-1YT	CHOKE COIL
Q810	UN4114	TRANSISTOR	L5	ELEPK271KA	COIL FILTER
Q811	2SK381	TRANSISTOR	L401	QLB40048	M.P.X. COIL
Q812	2SK381	TRANSISTOR	L402	QLB40048	M.P.X. COIL
DIODES			T301	SL09C19-K	OSCILLATOR COIL
D1	MA165	DIODE	T601 Δ	SLT5K232SA	POWER TRANSFORMER
D2	MA165	DIODE	(E, EG, EH)		
D301	MA165	DIODE	T601 Δ	SLT5K233SA	POWER TRANSFORMER
D302	MA165	DIODE	(XA)		
D601	MA4062M	DIODE	T601 Δ	SLT5K234SA	POWER TRANSFORMER
D602	MA4082M	DIODE	(EK, XL)		
D603 Δ	SVD1SR35200A	RECTIFIER	COMPONENT COMBINATIONS		
D604 Δ	SVD1SR35200A	RECTIFIER	Z801	EXBF7E562J	COMPONENT COMBINATION
D605 Δ	SVD1SR35200A	RECTIFIER	SWITCHES		
D606 Δ	SVD1SR35200A	RECTIFIER	S1	SSH3713	PUSH SWITCH, EDITING AUTO SPACE
D607 Δ	SVD1SR35200A	RECTIFIER	S2	SSH3713	PUSH SWITCH, EDITING SPEED
D608 Δ	SVD1SR35200A	RECTIFIER	S3	SSH3713	PUSH SWITCH, DOLBY NR
D610	MA4075M	DIODE	S601 Δ	SSH1226	SW. POWER
D704A	LN463YCPPU	L.E.D	S602 Δ	SSR187-1	SW. VOLTAGE SELECTOR
D704B	LN463YCPPU	L.E.D	(XA)		
D704C	LN463YCPPU	L.E.D	S901	SSP83	SW. PLAY (DECK B)
D704D	LN463YCPPU	L.E.D	S902	SSP83	SW. FF/REW (DECK B)
D704E	LN463YCPPU	L.E.D	S903	SSP83	SW. MOTOR (DECK B)
D704F	LN463YCPPU	L.E.D	S904	LSA-1150AU	LEAF SWITCH (DECK B)
D704G	LN863RCPP	L.E.D	S905	SSP83	SW. PLAY (DECK A)
D704H	LN863RCPP	L.E.D	S906	SSP83	SW. MOTOR (DECK A)
D704I	LN863RCPP	L.E.D	S907	SSP83	SW. REC (DECK A)
D704J	LN863RCPP	L.E.D	S908	LSA-1150AU	LEAF SWITCH (DECK A)
D704K	LN863RCPP	L.E.D	S909	LSA-1150AU	LEAF SWITCH (DECK A)

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



MECHANICAL PARTS LOCATION

NOTES:

- When changing mechanism parts, apply the specified grease to the are marked "x x" shown in the drawing "Mechanical Parts Location".

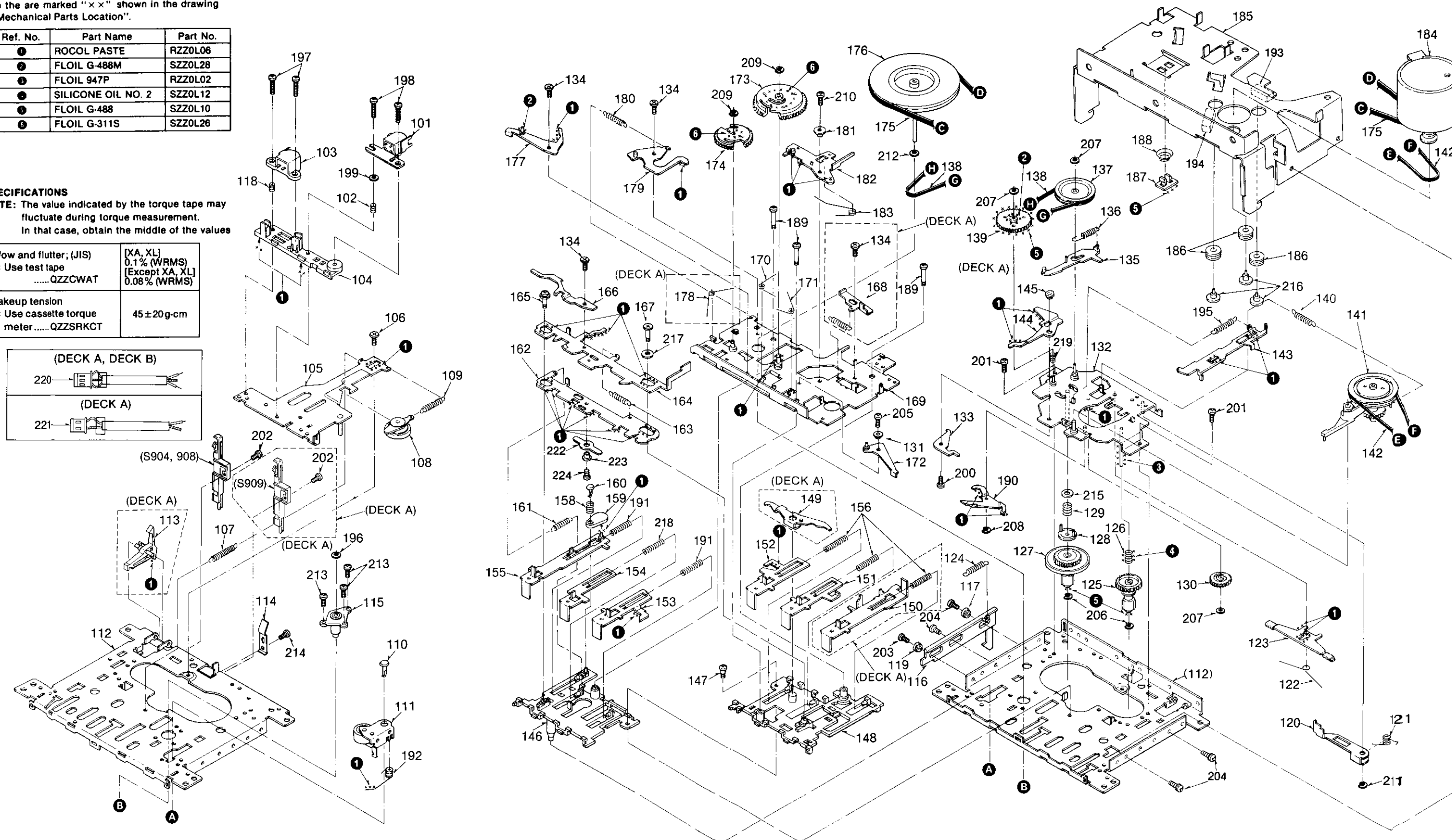
Ref. No.	Part Name	Part No.
①	ROCOL PASTE	RZZ0L06
②	FLOIL G-488M	SZZ0L28
③	FLOIL 947P	RZZ0L02
④	SILICONE OIL NO. 2	SZZ0L12
⑤	FLOIL G-488	SZZ0L10
⑥	FLOIL G-311S	SZZ0L26

SPECIFICATIONS

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

Wow and flutter; (JIS)	[XA, XL]
* Use test tape	0.1% (WRMS)
.....QZZCWAT	[Except XA, XL]
	0.08% (WRMS)
Takeup tension	
* Use cassette torque meterQZZSRKCT	45±20g-cm

(DECK A, DECK B)
220
(DECK A)
221



220																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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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. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

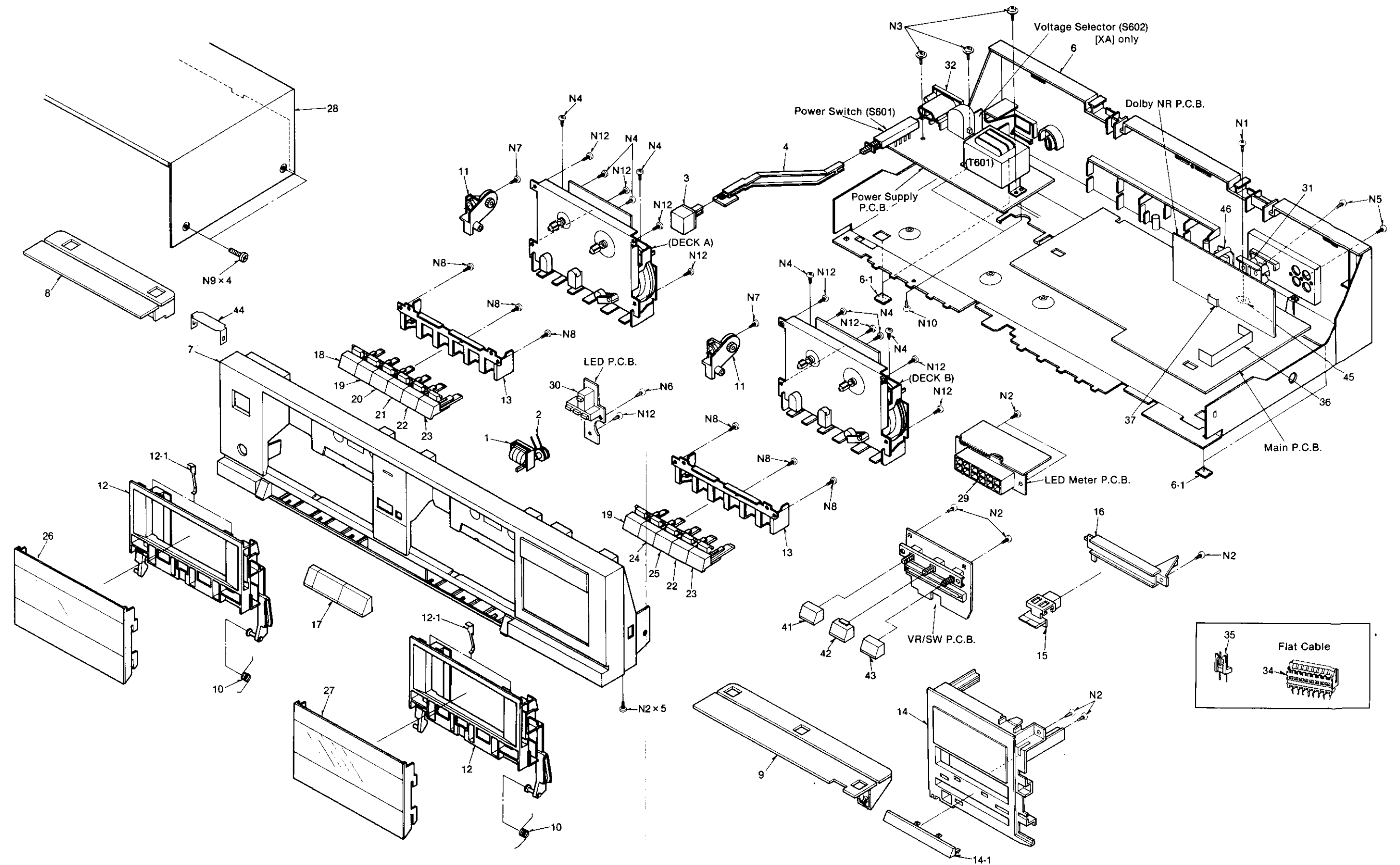
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CASSETTE DECK			164	SMQT1589	LEVER
101 (E, EK, EG, EH)	SJH103-1	PLAY HEAD (DECK B)	166	SMQ4872	EJECT KICK LEVER
101 (XA, XL)	SJH108	REC/PLAY HEAD (DECK A)	168	SMQ4880	FUNCTION LEVER ANGLE (DECK A)
101 (XA, XL)	SJH109	PLAY HEAD (DECK B)	169	SMQT1590	SUB CHASSIS ASS'Y
101 (E, EK, EG, EH)	SJH95	REC/PLAY HEAD (DECK A)	170	SMQ4888	M GEAR SPRING
102	SMQ4596	SPRING	171	SMQ4890	TRIGGER ARM SPRING
103	RJH7E5YAM	ERASE HEAD (DECK A)	172	SMQ4892	TRIGGER ARM ASS'Y
103	SMQT1767	DAMPE HEAD (DECK B)	173	SMQ4894	MAIN GEAR
104	SMQ4768	HEAD BASE	174	SMQ4896	PAUSE GEAR
105	RFD1352A	PANEL	175	SMQT1591	MAIN BELT (E, EK, EG, EH)
107	SMQ4770	HEAD PANEL SPRING	175	SMQT1765	MAIN BELT (XA, XL)
108	SMQ4772	TAKE UP ROLLER ASS'Y	176	SMQT1592	FLYWHEEL ASS'Y (E, EK, EG, EH)
109	RFS2492A	SPRING	176	SMQ4900	FLYWHEEL ASS'Y (XA, XL)
110	SMQ4774	FUNCTION LEVER STOPPER	177	SMQ4902	TRIGGER ARM ASS'Y
111	SMQ4776	PINCH ROLLER ASS'Y	178	SMQ4904	TRIGGER ARM SPRING
112	SMQT1458	CHASSIS	179	SMQ4906	PAUSE ARM ASS'Y
113	SMQ4778	REC SAFETY LEVER (DECK A)	180	SMQ4909	PAUSE ARM SPRING
114	SMQ4790	PACK HOLDER SPRING	181	SMQ4910	LIFT ARM COLLAR
115	SMQ4782	FLYWHEEL METAL	182	SMQT1593	LIFT ARM ASS'Y
116	RFY1832A	LEVER	183	RFS2482A	LIFT ARM SPRING
117	SMQ4786	COLLAR	184	MMUST130-KE	MOTOR SAA'Y
118	SMQT1629	SPRING	185	SMQT1633	FM HOLD PLATE (E, EK, EG, EH)
119	SMQ4788	COLLAR	185	SMQT1717	FM HOLD PLATE (XA, XL)
120	SMQ4790	CONTROL LEVER	186	SMQ4916	MOTOR RUBBER
121	RFS379Z	SPRING	187	SMQT1595	FL PLATE
122	SMQ4792	BRAKE SPRING	188	SMQ4922	DAMPER SPRING
123	SMQ4794	BRAKE ARM ASS'Y	190	SMQ4940	KICK LEVER
124	SMQT1630	EJECT LEVER SPRING	191	SMQ4858	BUTTON LEVER SPRING
125	SMQ4800	SUPPLY REEL ASS'Y	192	SMQT1453	SPRING
126	SMQT1636	SPRING	193	SMQT1598	FELT
127	SMQT1769	TAKE UP REEL ASS'Y	194	SMQT1636	SPRING (E, EK, EG, EH)
128	SMQ4806	SENSING PIECE	194	SMQT1680	FELT (XA, XL)
129	SMQ4808	SENSING PIECE SPRING	195	RFS372Z	RF SLIDE LEVER SPRING (E, EK, EG, EH)
130	SMQ4810	FF GEAR	195	RFS378Z	RF SLIDE LEVER SPRING (DECK A)
131	SMQ4816	COLLAR	195	RFS378Z	RF SLIDE LEVER SPRING (DECK B)
132	RFU162A	REEL BASE ASS'Y	195	RFS378Z	RF SLIDE LEVER SPRING (XA, XL)
133	SMQ4814	T. ROLLER KICK LEVER	218	SMQT1768	BUTTON LEVER SPRING
135	SMQ4818	SENSING LEVER	219	SMQT1549	SPRING
136	SMQ4820	SENSING LEVER SPRING	220	SWKST130M1	READ WIRE ASS'Y (DECK B)
137	SMQ4822	PULLEY	220	SWKST130M2	READ WIRE ASS'Y (DECK A)
138	SMQ4824	FULL AUTO BELT	221	SWKST130M3	READ WIRE ASS'Y (DECK A)
139	SMQ4826	CAM GEAR	222	RFY353Z	STOPER (DECK B)
140	SMQT1631	RF CLUTCH ARM SPRING	223	RF286Z	COLLAR (DECK B)
141	SMQT1583	RF CLUTCH ARM ASS'Y	SCREWS, WASHERS AND NUTS		
142	SMQT1584	RF BELT	106	SMQT1581	COLLAR SCREW
143	SMQ4832	RF SLID LEVER ASS'Y	134	SMQT1582	COLLAR SCREW
144	SMQ4834	AUTO LEVER	147	SMQ4838	COLLAR SCREW
145	SMQ4838	AUTO LEVER COLLAR	165	SMQ4870	COLLAR SCREW
146	SMQ4836	BUTTON BASE(L)	167	SMQ4878	COLLAR SCREW
148	SMQ4840	BUTTON BASE(R)	189	SMQ4942	COLLAR SCREW
149	SMQ4842	REC STOPPER (DECK A)	196	SMQ4936	NYLON WASHER
150	SMQT1586	REC BUTTON LEVER (DECK A)	197	XSN2+8	SCREW
151	SMQ4846	PLAY BUTTON LEVER	198	SMQT1634	SCREW
152	SMQ4848	RWD BUTTON LEVER	199	XWG2	WASHER
153	SMQ4850	FF BUTTON LEVER	200	SMQ4944	COLLAR SCREW
154	SMQ4852	STOP BUTTON LEVER	201	XYN2+C4	SCREW
155	SMQ4854	PAUSE BUTTON LEVER	202	XYN2+C6	SCREW
156	SMQ4856	BUTTON LEVER SPRING	203	XSN26+5	SCREW
158	SMQ4860	PAUSE LEVER SPRING	204	XYN2+C5	SCREW
159	SMQ2444	PAUSE LEVER	205	SMQT1460	SCREW
160	SMQ4862	P STOPPER			
161	SMQT1588	SPRING			
162	SMQT1597	LEVER (DECK B)			
162	SMQT1764	LEVER (DECK A)			
163	RFS2532A	SPRING			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
206	RFE133Z	RETAINING RING	213	SMQ4934	SCREW
207	SMQ4930	POLYSLIDE WASHER	214	XTN26+3	SCREW
208	XUC12FT	E-RING	215	SMQT1454	WASHER
209	XUC2FT	E-RING	216	SMQ4918	COLLAR SCREW
210	XYN26+C6	SCREW	217	RFN73Z	SPACER
211	XUC15FT	E-RING	224	XSS2+25	SCREW (DECK B)
212	SMQ4932	POLYSLIDER WASHER			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CABINET AND CHASSIS			23	SBC871A	BUTTON, PAUSE
1	SJN20	TAPE COUNTER	24	SBC869B	BUTTON, REW. REV
2	SMQ20018	COUNTER BELT	25	SBC869B	BUTTON, FF/CUE
3	SBC866-5	BUTTON, POWER	26	SGU595	CASSETTE LID(DECK A)
4	SUB255	ROD	27	SGU595-1	CASSETTE LID(DECK B)
6	SKMSD190WKE	CABINET BODY ASS'Y (E)	28	SKC2090K99	CABINET BODY
6	SKMSD190WKEG	CABINET BODY ASS'Y (EG, EH)	29	LN121307P	LED BLOCK ASS'Y
6	SKMSD190WKEK	CABINET BODY ASS'Y (EK)	30	LN041395P	LED BLOCK ASS'Y
6	SKMSD190WKXA	CABINET BODY ASS'Y (XA)	31	SJF3057N	TERMINAL BOARD
6	SKMSD190WKXL	CABINET BODY ASS'Y (XL)	32	 SJS9236	AC INLET
6-1	SKL283	FOOT	34	SJT30543-V	CONNECTOR(5P)
7	SGYSD190W-KE	FRONT PANEL ASS'Y	34	SJT30843-V	CONNECTOR(8P)
8	SGX7894-1	SPACER	34	SJT31043-V	CONNECTOR(10P)
9	SGX7895-1	SPACER	35	QJP1920TN-1	CONNECTOR(2P)
10	SUS797	SPRING	35	QJP1921TN-1	CONNECTOR(3P)
11	SGXST25-KP	DAMPER GEAR ASS'Y	36	SMC1298	SHIELD PLATE
12	SGXS8205-KE	CASSETTE HOLDER ASS'Y	37	SMN2043	ANGLE
12-1	QBP2006A	SPRING	41	SBC1014	BUTTON, EDITING
13	SMN2001-1	BRACKET	42	SBC1014-1	BUTTON, SPEED
14	SGXST18-KM	ORNAMENT ASS'Y	43	SBC1014-2	BUTTON, DOLBY
14-1	SGX9044	ORNAMENT	44	SUN31014	BRACKET
15	SBD149	KNOB, VOLUME	45	SNE55	BRACKET
16	SGX9047-2	SLIDE GUIDE	46	SJS306	REMOTE CONTROL JACK
17	SGX7897	ORNAMENT	SCREWS, WASHERS AND NUTS		
18	SBC866A	BUTTON, REC	N1	XTBS3+8JFZ1	SCREW
19	SBC867A	BUTTON, PLAY	N2	XTB3+10J	SCREW
20	SBC868A	BUTTON, REW	N3	XTW3+12Q	SCREW
21	SBC869A	BUTTON, FF	N4	XTB3+6F	SCREW
22	SBC870A	BUTTON, STOP/EJECT	N5	XTB3+12JFZ	SCREW
			N6	XTV26+6J	SCREW
			N7	XTB3+12J	SCREW
			N8	XTV26+8J	SCREW
			N9	SNE2125-1	SCREW
			N10	XTB3+8JFZ	SCREW
			N12	XTB3+8J	SCREW

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PACKING MATERIAL			(XA)		
P1	SPG6210	CARTON BOX	A1 	SJA188	POWER CORD
P2	SPS4963-1	PAD (FRONT)	(EK)		
P3	SPS4964	PAD (BACK)	A2	SJP2201	CORD
P4	XZB50X65B02	POLY SHEET	A3	SQF13175	INSTRUCTION BOOK
P5	SPS4905	PAD (ACCESSORY)	(EK)		
ACCESSORIES			A3	SQF13175	INSTRUCTION BOOK
A1 	SFDA05E03	POWER CORD	(E, EH)		
(E, EG, EH)			A3	SQF13221	INSTRUCTION BOOK
A1 	SJA163	POWER CORD	(EG)		
(XL)			A3	SQF13400	INSTRUCTION BOOK
A1 	SJA185	POWER CORD	(XL, XA)		
			A5	SWKST11M-1	CORD (REMOTE CONTROL)
			A6 	RJP120ZBS-H	AC PLUG ADAPTOR
			(XA)		

CABINET PARTS LOCATION



8	12	12-1	7	10	17	18	19	20	21	22	23	12-1	12	11	13	2	10	19	24	25	22	3	23	11	9	13	4	6-1	14	14-1	15	6	16	6-1																													
26			44		27	28										30								41	42	43		32	29			37	46	35	31	34	6	45																									
N9								N8				N8		N7		N8		N4		N12		N12		N4		N2		N6		N12		N8		N7		N8		N4		N12		N8		N12		N4		N3		N12		N10		N2		N2		N2		N1		N5	

Service Manual

Dolby NR-Equipped
Stereo Double Cassette Deck

Cassette Deck
RS-T19



Color

(K)...Black Type

Area

Color	Area
(K)	(PA)Far East PX.
(K)	(PE)European Military.

Please use this manual together with the service manual for Model No. RS-D190W, Order No. AD8805069C8.

CHANGES

CHANGE IN REPLACEMENT PARTS LIST

- Notes:** 1. Mentioned in this parts list are only those different from Model No. RS-D190W (XA); all other parts are the same as for RS-D190W (XA).
2. 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.

Ref. No.	Change of Parts No.		Part Name & Description	Remarks
	RS-D190W (XA)	➡ RS-T19 (PA, PE)		
CABINET AND CHASSIS				
6	SKMSD190WKXA	SKMST19-KPA	CABINET BODY ASS'Y	Change
7	SGYSD190W-KE	SGYST19-KPA	FRONT PANEL ASS'Y	Change
PACKING MATERIAL				
P1	SPG6210	SPG6442	CARTON BOX	Change
P3	SPS4964	SPS4964-2	PAD (BACK)	Change
ACCESSORIES				
A1 △	SJA185	SJA168	POWER CORD	Change
A3	SQF13400	SQF13419	INSTRUCTION MANUAL	Change

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

Technics

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Matsushita Electric Industrial Co., Ltd.
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2-chome, Minato-ku, Tokyo 105, Japan