

# TC-818

## SERVICE MANUAL

*E Model*

TC-818 is the cassette deck section in FH-818R.



Model Name Using Similar Mechanism	TC-WR808M
Tape Transport Mechanism Type	Deck A TCM-170RA1
	Deck B TCM-170RB7

### SPECIFICATIONS

Recording system 4-track 2-channel stereo  
Frequency response


Used cassette	
TYPE I (Sony HF-S)	40-13,000 Hz ( $\pm 3$ dB)
TYPE II (Sony UCX)	40-14,000 Hz ( $\pm 3$ dB)

Wow and flutter 0.1% WRMS  
 $\pm 0.2\%$  (DIN)

#### Dimensions/Weight

Approx. 225 x 120 x 230 mm (8 <sup>7</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub> x 9 <sup>1</sup> / <sub>8</sub> inches)	Approx. 2.6kg (5 lb 12 oz) net
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\* incl. projecting parts and controls

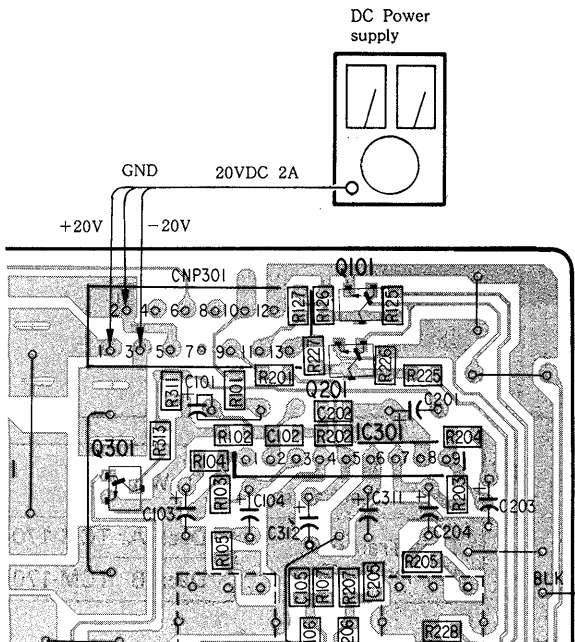
Dolby noise reduction manufactured under license from  
Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of  
Dolby Laboratories Licensing Corporation.

STEREO CASSETTE DECK  
**SONY**<sup>®</sup>

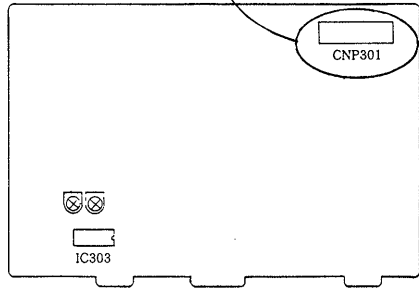
REPAIRING PRECAUTION

[To apply B+ voltage]

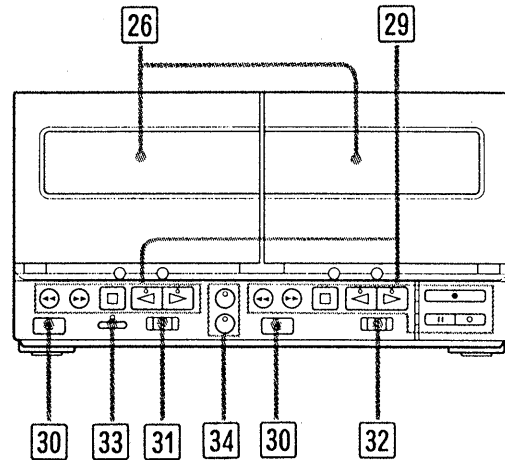
The power of this unit is fed from amplifier. Because of this, connect the DC Power supply as illustrated below when this unit alone operates.



AUDIO BOARD  
-Component Side-



PARTS IDENTIFICATION



- 26 Cassette holder
- 29 Tape operation buttons
  - ◀◀◀ :Fast winding
  - ▶ :Forward play
  - ◀ :Reverse play
  - ⏏ :Stop
  - ⏏ :Pause
  - :Record muting
  - : Record
- 30 ▲ EJECT button
- 31 DIRECTION MODE selector
- 32 DOLBY NR switch
- 33 AMS/BLANK SKIP button
- 34 DUBBING SPEED selectors

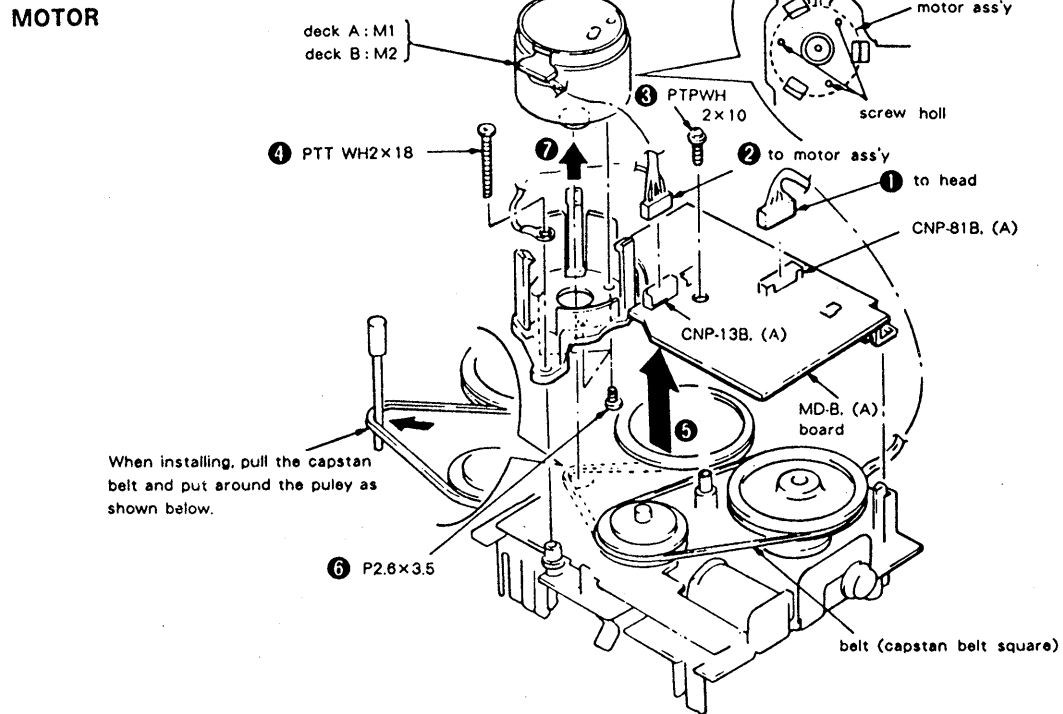
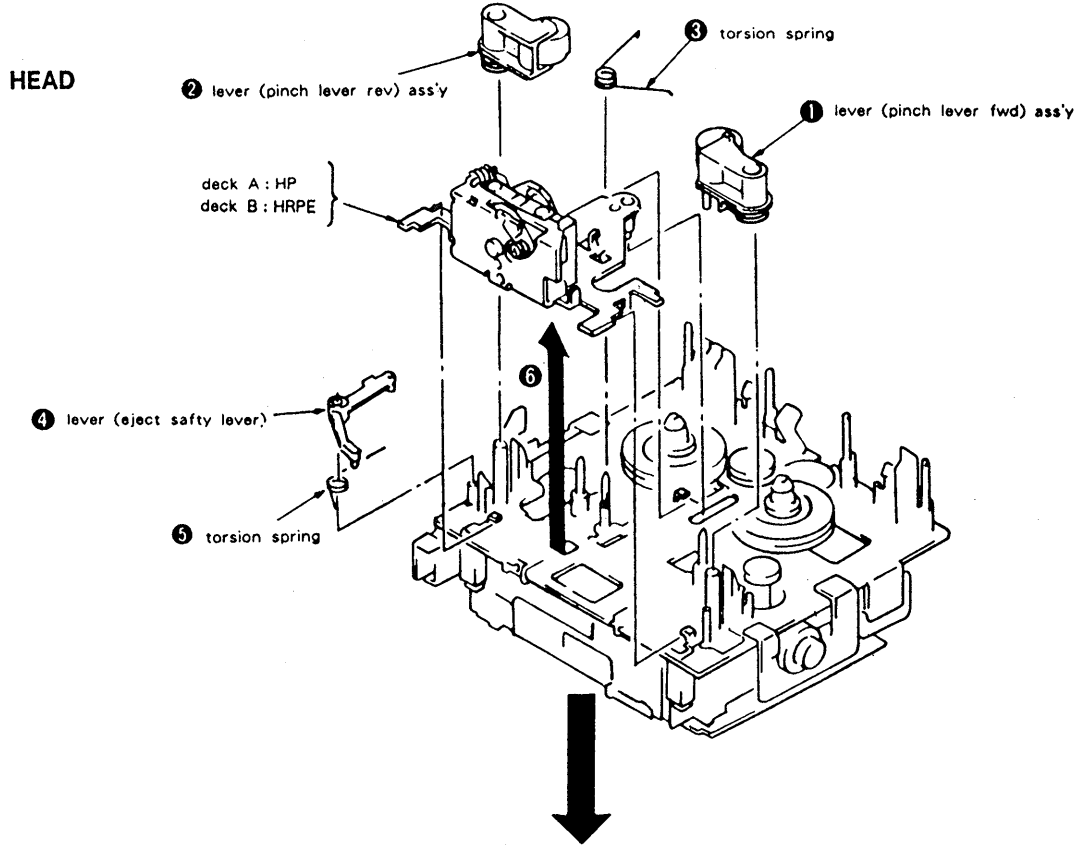
**SAFETY-RELATED COMPONENT WARNING!!**  
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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# SECTION 1 DISASSEMBLY

**Note :** Follow the disassembly procedure in the numerical order given.



## SECTION 2 ADJUSTMENTS

### 2-1. MECHANICAL ADJUSTMENTS

#### PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
 

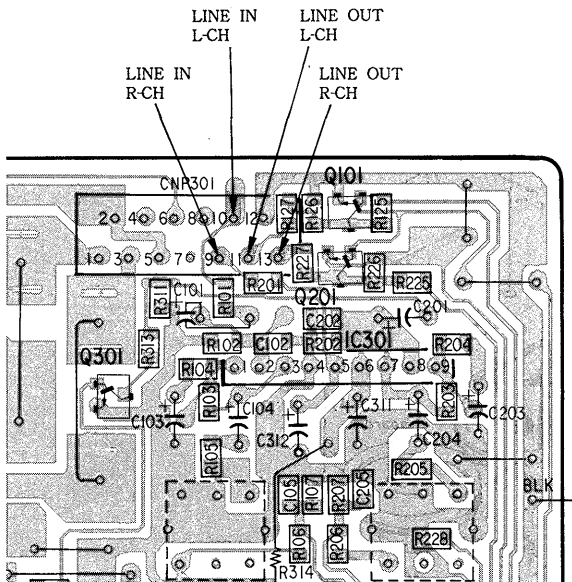
record/playback head	pinch roller
erase head	rubber belts
capstan	idler
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

#### Torque Measurement

Torque	Torque Meter	Meter Reading
FWD	CQ-102C	27 to 75g · cm (0.378 to 1.05 oz · inch)
FWD Back tension	CQ-102C	1 to 10g · cm (0.014 to 0.14 oz · inch)
REV	CQ-102RC	27 to 75g · cm (0.378 to 1.05 oz · inch)
REV Back Tension	CQ-102RC	1 to 10g · cm (0.014 to 0.14 oz · inch)
FF, REW	CQ-201B	95 to 165g · cm (1.33 to 2.31 oz · inch)

#### • Location of LINE IN/OUT

#### AUDIO Board CNP301



### 2-2. ELECTRICAL ADJUSTMENTS

**Note :** The adjustment should be performed in the order given in the service manual.

The adjustments should be performed for both L-CH and R-CH.

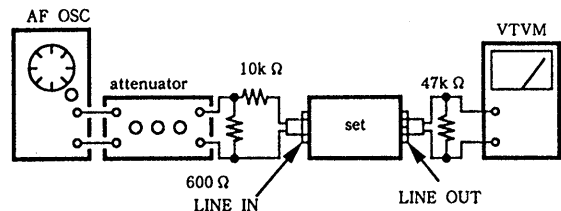
- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch	: OFF
TAPE SELECT switch	: TYPE I
DIRECTION MODE switch	: $\longleftrightarrow$

- Standard Record :

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level:

#### -Record Mode-



#### Standard Input Level

	LINE IN
source impedance	10k $\Omega$
input level	0.25V (-10dB)

#### Standard Output Level

	LINE OUT
load impedance	47k $\Omega$
output level	0.44V (-5dB)

#### • Test tape

Type	Signal	Used for
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB LEVEL Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

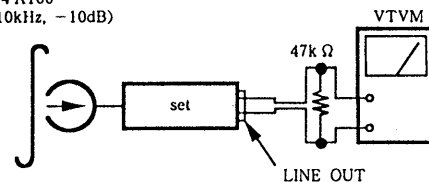
#### Record/Playback Head Azimuth Adjustment

**DECK A    DECK B**

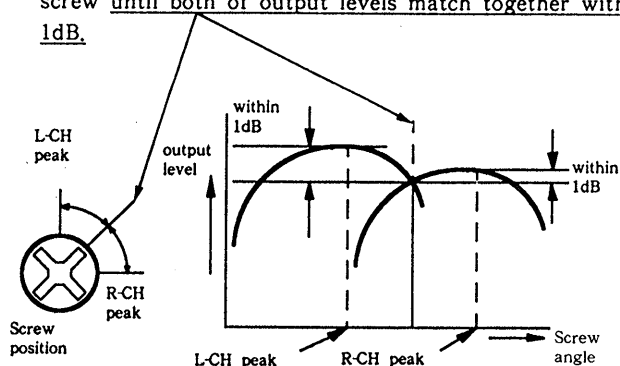
#### Procedure :

1. Mode : FWD playback

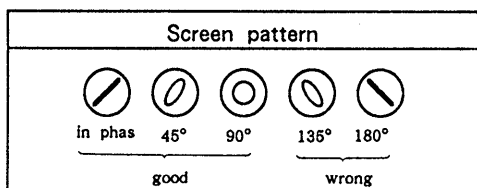
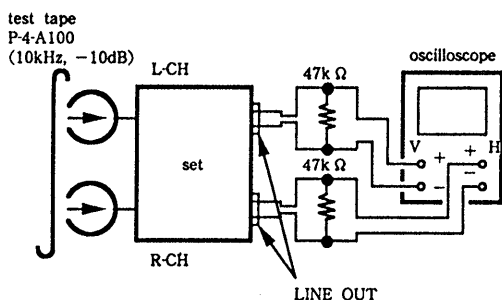
test tape  
P-4-A100  
(10kHz, -10dB)



- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

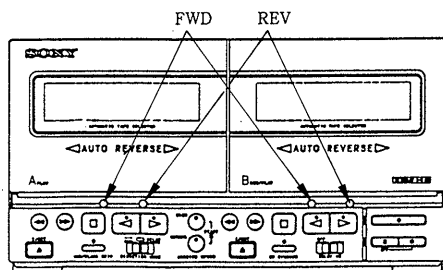
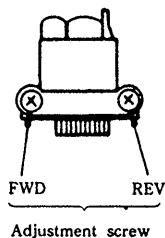


- Phase Check  
Mode : playback



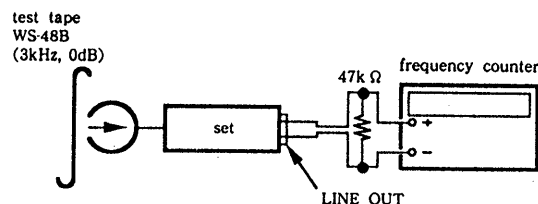
- Set in the REV mode and repeat the step 1-3.
- After the adjustment, lock the screws with locking compound.

**Adjustment Location :** Record/Playback head  
(Adjustable without disassembly.)



### Tape Speed Adjustment DECK A DECK B

**Procedure :**  
Mode : FWD playback



Perform high speed adjustment before normal speed adjustment.

Connect TP1 to ground with jumper wire and continue to press HIGH SPEED DUBING switch : High speed playback. After the high speed adjustment, remove jumper wire of TP1.

Play back the test tape WS-48B and adjust to meet the specifications below.

speed	deck	Adjustment part	variable resistor of motor	test pin CN811	frequency counter reading
high	A	M11A	(H)	short	5,960±30
	B	M11B	(H)		
normal	A	M11A	(L)	open	2,980±15
	B	M11B	(L)		

Frequency difference between the beginning and the end of the tape should be within 3%.

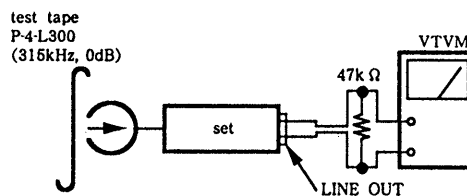
Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

**Adjustment Location :**

- deck A : motor (M11A) rear side
- deck B : motor (M11B) rear side

### Playback Level Adjustment DECK A DECK B

**Procedure :**  
Mode : playback  
Connect TP1 to ground.



Adjust deck A : RV41A(L-CH), RV61A(R-CH) and deck B : RV41B(L-CH), RV61B(R-CH) so that the reading on VTVM meets the specification below.

LINE OUT LEVEL :  $-10 \pm 0.8$ dB

Level difference between channels : less than 0.5dB  
Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

**Adjustment Location :** MD board

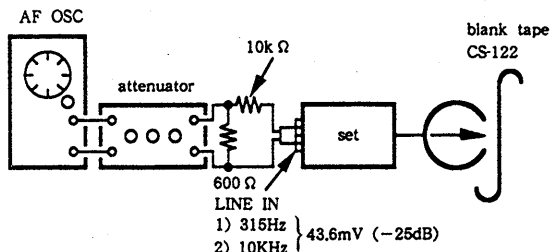
**Record Bias Adjustment** **DECK B**

**Setting :**

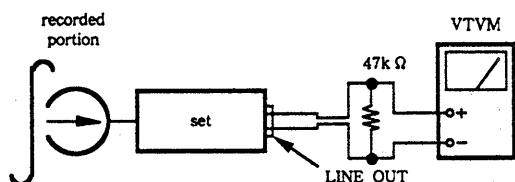
REC LEVEL control : standard record (See page 4.)  
Connect TP1 to ground.

**Procedure :**

1. Mode : record



2. Mode : playback



Confirm that the 10kHz playback output is  $0 \pm 0.5\text{dB}$  relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

After the adjustment remove jumper wire of TP1.

**Adjustment Location :** MD B board (US, Canadian model)  
HX PRO board (AEP, UK model)

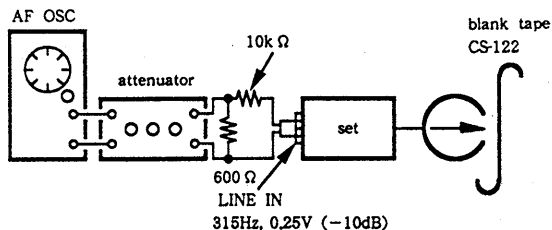
**Record Level Adjustment** **DECK B**

**Setting :**

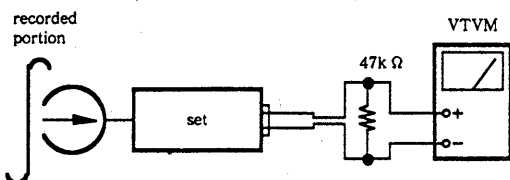
REC LEVEL control : standard record (See page 4.)  
Connect TP1 to ground.

**Procedure :**

1. Mode : record



2. Mode : playback

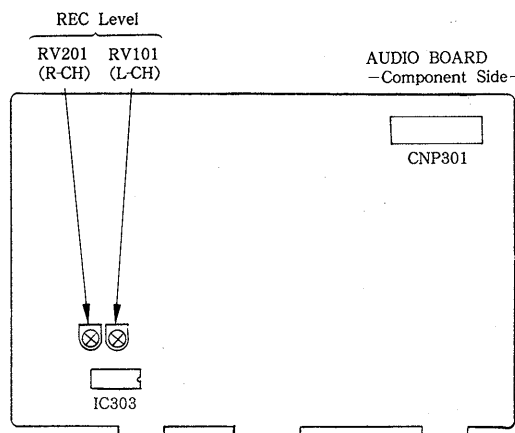
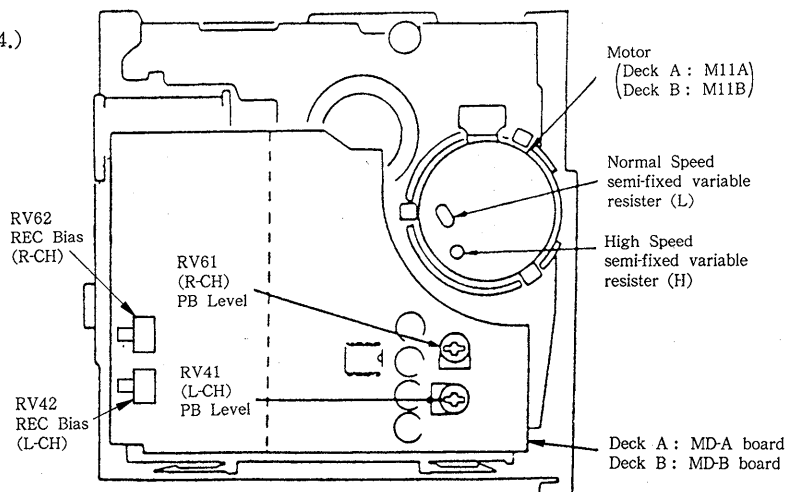


3. Play back the signal recorded in step 1.  
Confirm that the signal level is within the specification below. If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the step1-3.
4. After the adjustment, remove jumper wire of TP1.

LINE OUT level :  $-8\text{dB} \pm 0.5\text{dB}$

**Adjustment Location :** audio board

**- Adjusting Parts Location Diagram -**



## SECTION 3 DIAGRAMS

### 3-1. IC801 M50964-212FP PIN FUNCTIONS

PIN No.	PIN NAME	I/O	SIGNAL NAME	FUNCTION											
1	P62	O	$\overline{A}$ FWD	Deck A FWD LED output											
2	P61	O	$\overline{BIASIV}$	TYPE IV bias oscillation output											
3	P60	O	$\overline{BIASII}$	TYPE II bias oscillation output											
4	P47	O	$\overline{A}$ REV	Deck A RVS LED output											
5	P46	O	$\overline{A}$ REV	Deck A RVS LED output											
6	AN5	I	B HALF	Deck B Record prevention claw A, B detection input (Analogue)											
				Voltage (V)	1 V	1.9 V	2.8 V	3.9 V	5 V						
				Half	ON	ON	ON	ON	OFF						
				Claw A	OFF	ON	OFF	ON	OFF						
Claw B	ON	ON	OFF	OFF	OFF										
7	AN4	I	KEY3	KEY input											
8	AN3	I	KEY2	Voltage (V)	0	0.3	0.7	1.2	1.7	2.3	2.8	3.4	4.0	4.5	5.0
				KEY1	B ■	B	B ►	B ◀	B ○	A ◀◀	A ►►		□ B	□ C	OFF
9	AN2	I	KEY1	KEY2	A ■	A	A ►	A ◀		B ◀◀	B ►►	B ●	↻	RELAY	OFF
				KEY3	AMS		HDUB	NDUB							
10	P41	O	$\overline{B}$ FWD	Deck B FWD LED output											
11	P40	O	$\overline{B}$ REV	Deck B RVS LED output											
12	P37	O	$\overline{A}$ FWD	Deck A FWD LED output											
13	P36	O	$\overline{B}$ PAUSE	Deck B PAUSE LED output											
14	P35	O	$\overline{B}$ REC	Deck B REC LED output											
15	P34	O	DOLBY $\overline{B}/C$	Dolby $\overline{B}/C$ output											
16	P33	O	DOLBY $\overline{ON}/OFF$	Dolby $\overline{ON}/OFF$ output											
17	P32	I	SIRCS	SIRCS input or AUDIO BUS reverse input											
18	P31	O	$\overline{70}/120$	Playback EQ output for playing deck											
19	P30	O	AUB OUT	AUDIO BUS output											
20	INTI	I	AUB IN	AUDIO BUS normal input											
24	CVSS		CVSS	GND											
25	$\overline{RESET}$	I	$\overline{RESET}$	Microcomputer reset input											
26	XIN	I	XIN	Clock input (4 MHz)											
27	XO	O	XO	Clock output (4 MHz)											
28	$\Phi$	O	$\Phi$	(Not used : OPEN)											
29	Vss		Vss	GND											
30	P57	I	$\overline{TEST}$	Electrical adjusting test mode setting											
31	P56	I	TYPE IV	TYPE IV switch input											
32	P55	I	$B70/\overline{I20}$	Deck B TYPE II switch input											
33	P54	I	B SHUT	Deck B Reel table signal input											
34	P53	I	$A70/\overline{I20}$	Deck A TYPE II switch input											
35	P52	I	A SHUT	Deck B Reel table signal input											
36	P51	I	$\overline{A}$ HALF	Deck A Half switch input											
37	P50	I	AMSIN	AMS signal input											
39	P17	O	$\overline{MMUTE}$	Meter mute output											
40	P16	O	$\overline{LMUTE}$	Line mute output											
41	P15	O	$\overline{PASS}$	PASS AMP change output											
42	P14	O	$\overline{REC}/PB$	Dolby IC REC/PB select output											
43	P13	O	$\overline{AMS}/BS$	AMS AMP characteristics change output											

PIN No.	PIN NAME	I/O	SIGNAL NAME	FUNCTION
44	P12	O	AMS A/ $\bar{B}$	AMS AMP input Deck A/B select output
45	P11	O	SEL A/ $\bar{B}$	Dolby IC PB input Deck A/B select output
46	P10	O	$\overline{\text{BIAS I}}$	TYPE I bias oscillation output
47	P07	O	$\overline{\text{RELAY}}$	REC/PB change relay output
48	P06	O	$\overline{\text{PM B}}$	Deck B plunger hold output
49	P05	O	$\overline{\text{KICK B}}$	Deck B plunger kick output
50	P04	O	$\overline{\text{PM A}}$	Deck A plunger hold output
51	P03	O	$\overline{\text{KICK A}}$	Deck A plunger kick output
52	P02	O	B H/ $\bar{L}$	Deck B capstan motor speed select
53	P01	O	A H/ $\bar{L}$	Deck A capstan motor speed select
54	P00	O	M $\overline{\text{ON}}/\text{OFF}$	Capstan motor $\overline{\text{ON}}/\text{OFF}$
56	P27	O	REC MUTE	REC MUTE output
57	P26	O	B SCHMITT	Deck B reel table schmitt output
58	P25	O	A SCHMITT	Deck A reel table schmitt output
59	P24	O	$\overline{\text{HDUB}}$	High Speed Dubbing LED output
60	P23	O	$\overline{\text{NDUB}}$	Normal Speed Dubbing LED output
61	P22	O	$\overline{\text{CD DUB}}$	Auto CD Synchro LED output
62	P21	O	$\overline{\text{A PAUSE}}$	Deck A PAUSE LED output
63	P20	O	$\overline{\text{SIRCS}}/\text{AUB}$	SIRCS/AUDIO BUS mode select
64	Vss		Vss	GND
67	Vcc		Vcc	POWER 5 $\pm$ 0.5 V
68	AVSS		AVSS	Analogue system GND
69	VREF	I	VREF	Analogue system reference voltage input
70	D-A	O	D-A	D/A conversion output (Not used : OPEN)
71	PWM	O	PWM	PWM output (Not used : GND)
72	P63	O	$\overline{\text{AMS}}$	AMS LED indication output

#### [TEST MODE]

When making pin ③ low (connect TP1 to ground with jumper wire), following function operates.

1. Source monitor

Release the line mute while recording.

2. High speed playback

On recording, while pressing HIGH SPEED (DUBBING) button, high speed playback operates.

3. Record memory stop

Using DIRECTION MODE switch  $\rightleftarrows$ , returns to the recording start point and stops or plays.

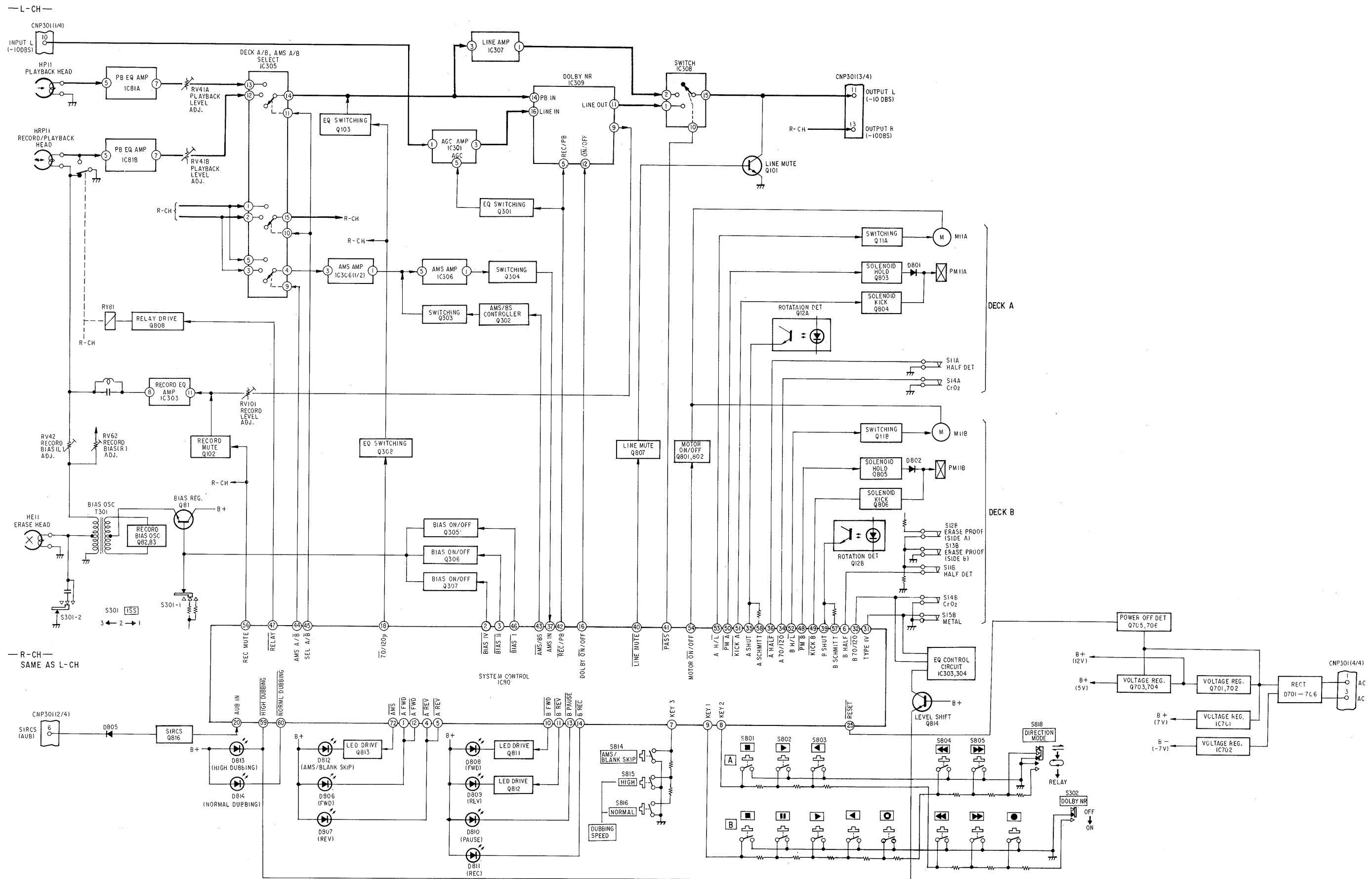
4. LED indication of slide switch

When making Deck B pause, LED indicates the positions of DIRECTION MODE switch.

Switch	Position	LED
DIRECTION MODE	$\rightleftarrows$	Deck A ◀
	$\circlearrowright$	Deck A PLAY
	RELAY	Deck A ▶
MODE	NORM	Deck B ◀
	FADE	Deck B PLAY
	ERASE	Deck B ▶



### 3-2. BLOCK DIAGRAM



### 3-3. PRINTED WIRING BOARDS

• See page 20 for Semiconductor Lead Layouts.

#### Note on Printed Wiring Boards:

- : parts extracted from the component side.
- : parts mounted on the conductor side.

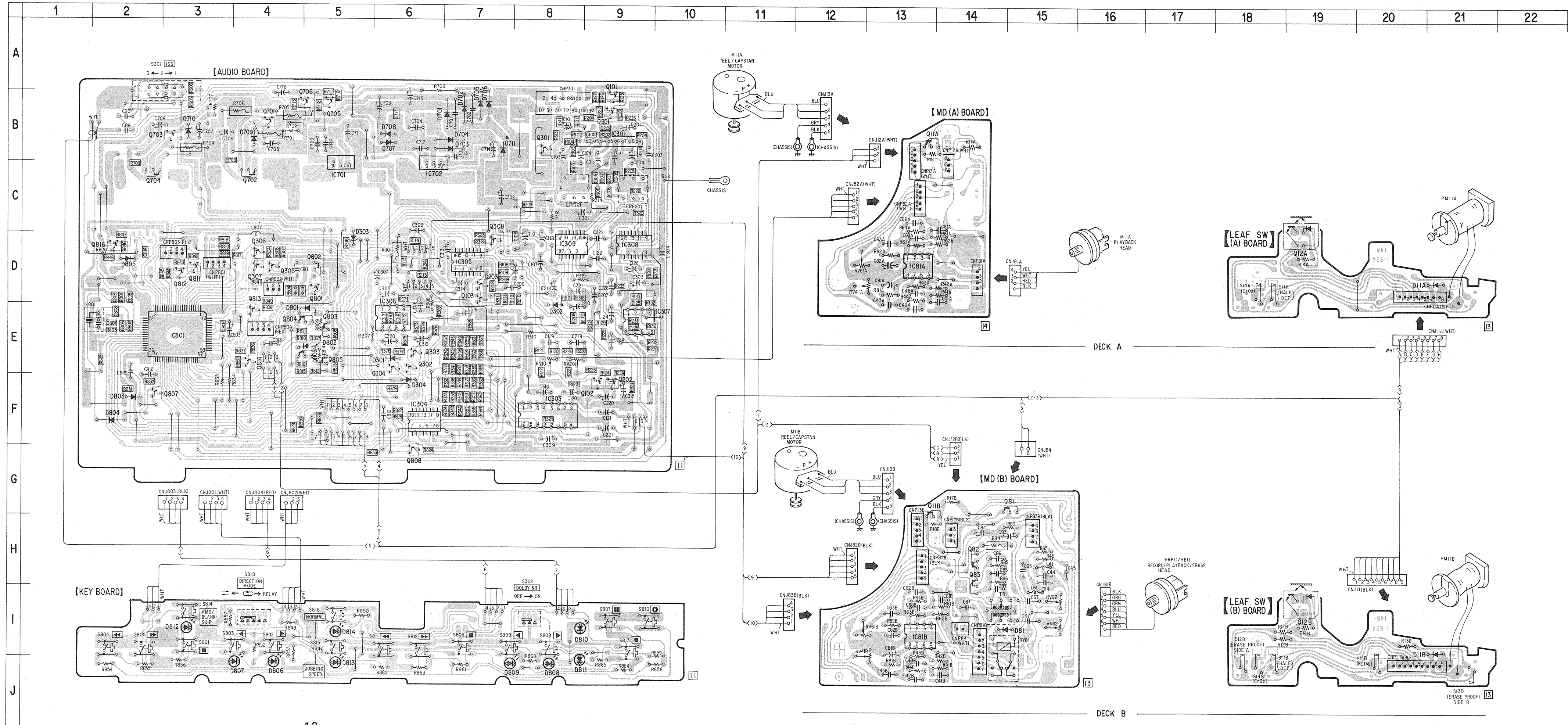
#### Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D11A	D-21	Q11A	B-13
D11B	I-21	Q11B	G-13
D81	I-15	Q12A	D-19
D301	E-6	Q12B	I-18
D302	E-8	Q81	G-15
D303	D-5	Q82	H-14
D304	F-6	Q83	H-14
D701	B-7	Q101	B-9
D702	B-7	Q102	F-9
D703	B-7	Q103	D-7
D704	B-7	Q201	B-9
D705	B-7	Q202	F-9
D706	B-7	Q203	D-7
D707	B-6	Q301	B-8
D708	B-6	Q302	E-6
D709	B-4	Q303	E-6
D710	B-3	Q304	E-6
D711	B-7	Q305	D-4
D801	E-5	Q306	D-4
D802	E-5	Q307	D-4
D803	F-2	Q308	D-7
D804	F-2	Q701	B-4
D805	D-2	Q702	C-4
D806	J-4	Q703	B-3
D807	J-4	Q704	C-2
D808	J-8	Q705	B-5
D809	J-7	Q706	B-5
D810	I-8	Q801	D-5
D811	J-8	Q802	D-5
D812	I-3	Q803	E-5
D813	J-5	Q804	E-5
D814	I-5	Q805	E-5
		Q806	F-2
		Q807	G-6
IC81A	D-13	Q808	D-3
IC81B	I-13	Q809	D-3
IC301	B-9	Q810	E-4
IC303	F-8	Q811	E-4
IC304	F-6	Q812	E-4
IC305	D-7	Q813	E-4
IC306	E-6	Q814	E-4
IC307	E-9	Q816	D-2
IC308	D-9		
IC309	D-8		
IC701	C-5		
IC702	C-6		
IC801	E-3		

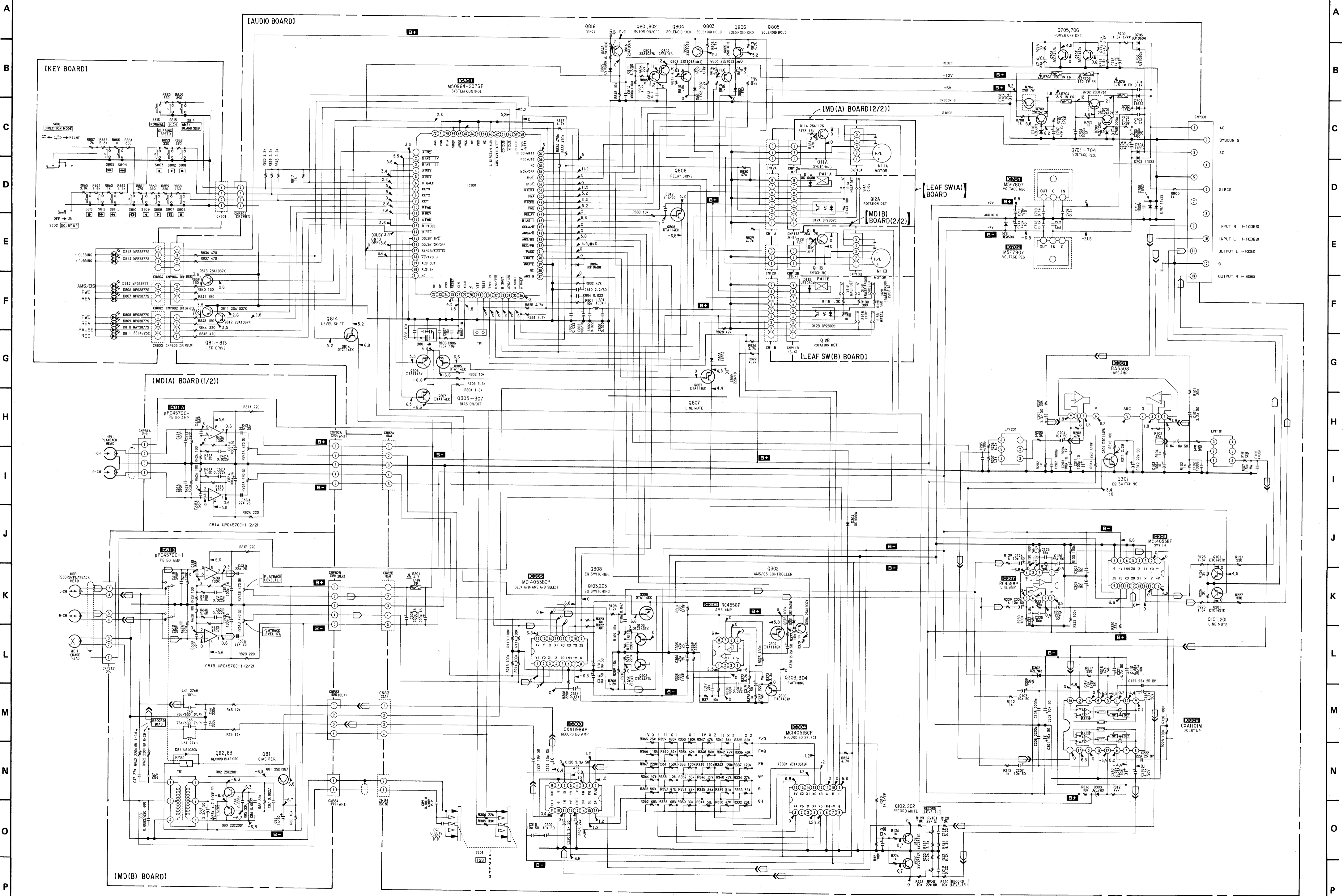
#### Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
- : fusible resistor.
- : adjustment for repair.
- Power voltage is fed with supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: REC
- ( ) : PB
- Volages are taken with a VOM (50 k $\Omega$ /V).
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : PB (DECK B)
- : REC (DECK B)

**Note:** The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22



### SECTION 4 EXPLODED VIEWS

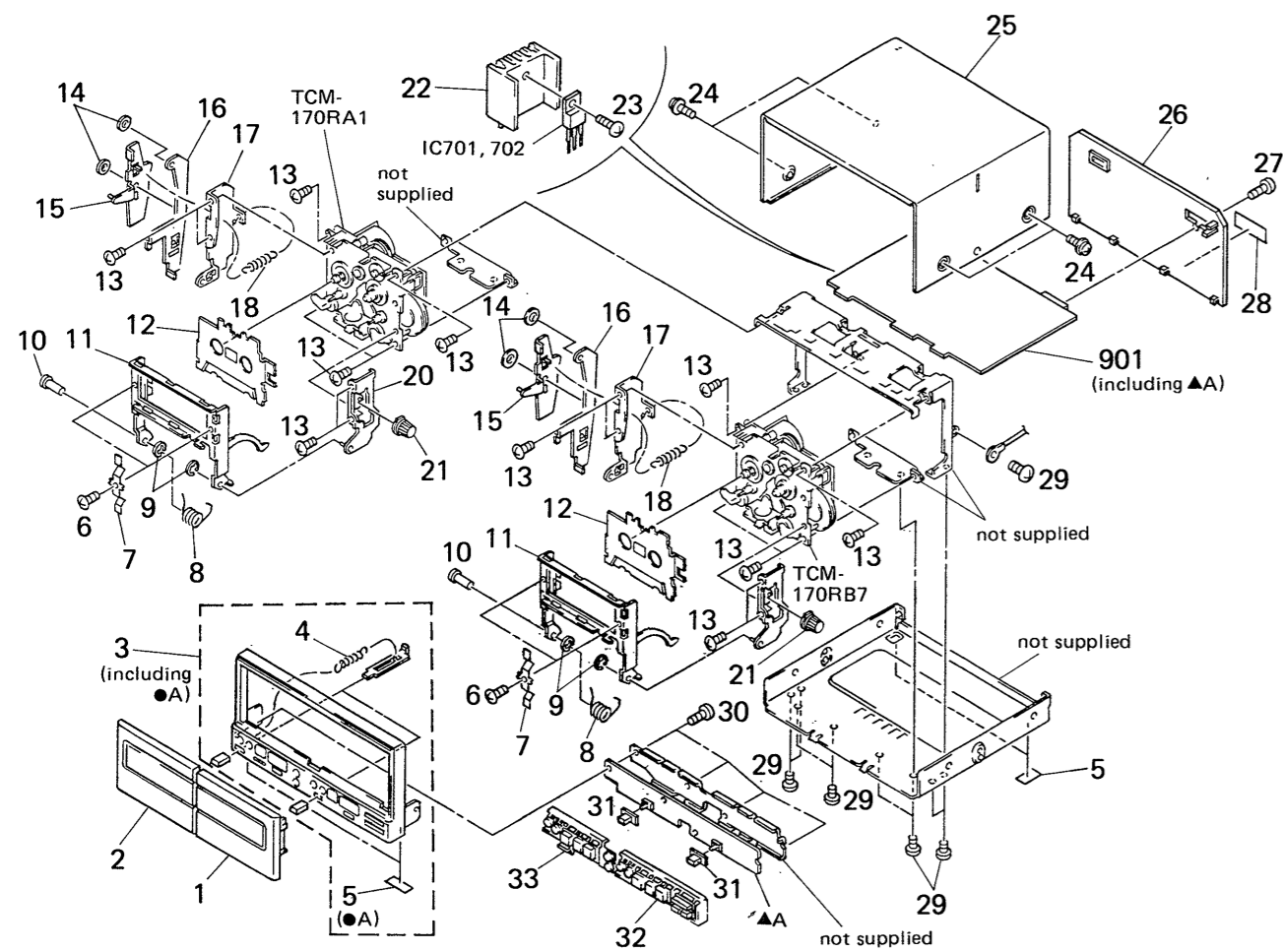
#### NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:  
(RED)... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts Color

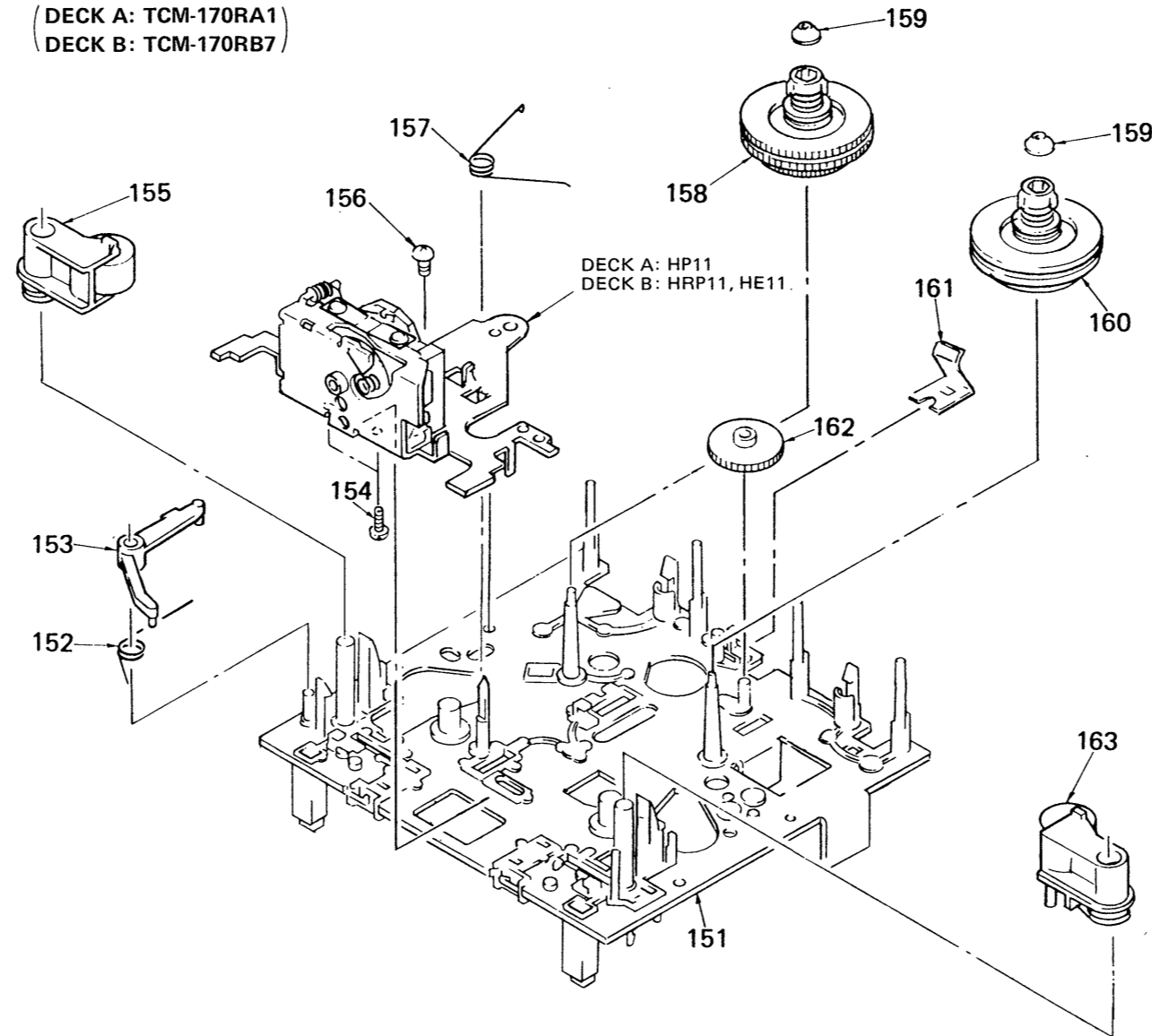
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

#### (1) MAIN SECTION



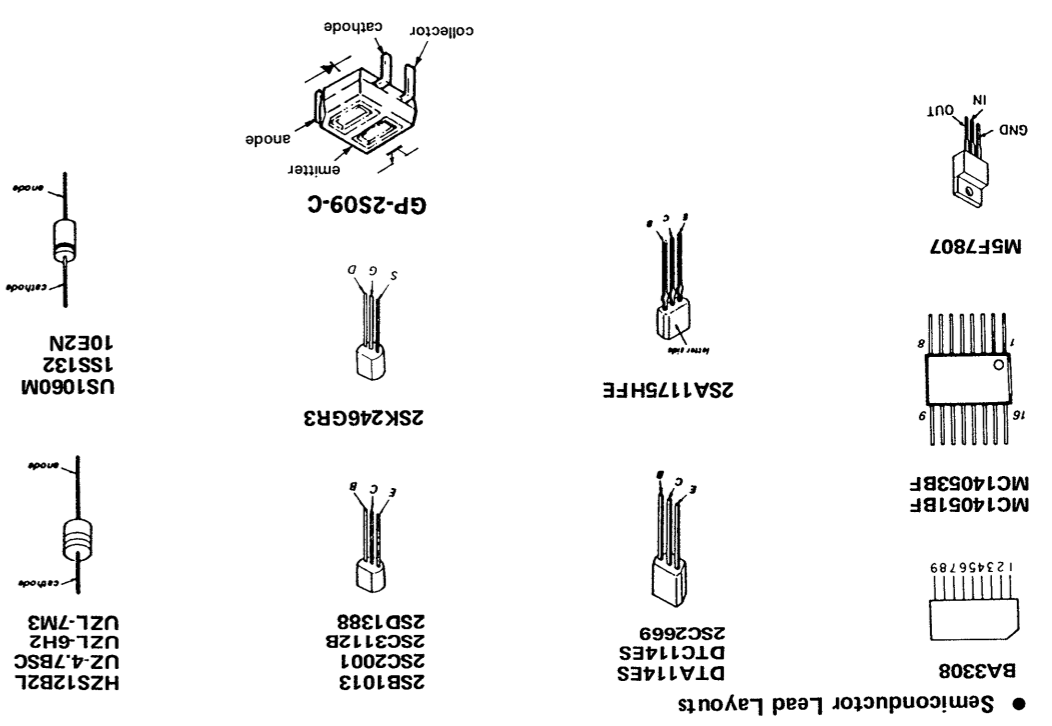
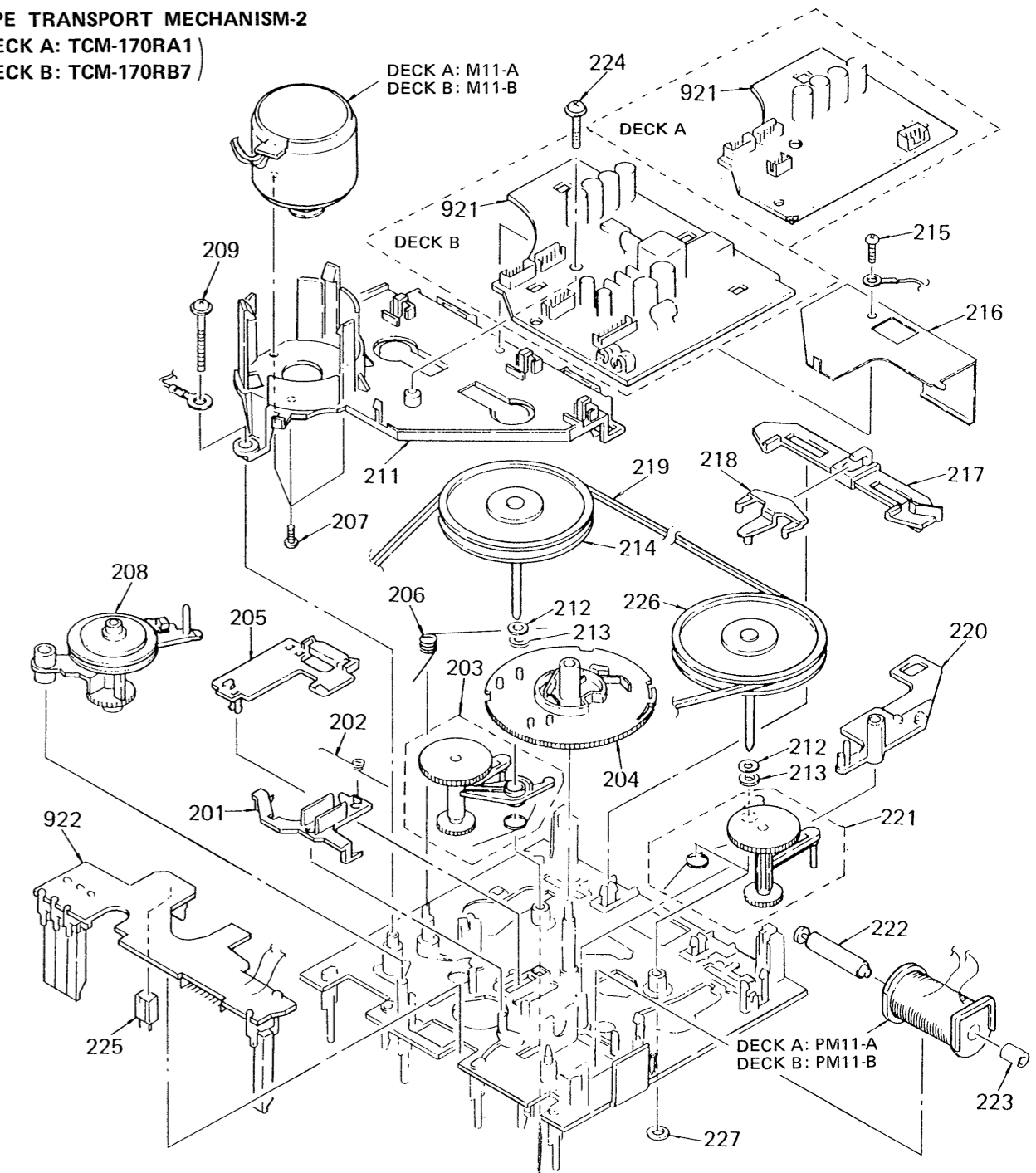
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3340-151-1	LID (B) ASSY, CASSETTE		20	*X-3332-494-1	BRACKET (R) ASSY	
2	X-3340-150-1	LID (A) ASSY, CASSETTE		21	X-3332-464-1	GEAR (DAMPER) ASSY	
3	X-3340-154-1	PANEL ASSY, FRONT		22	*A-921-402-01	HEAT SINK	
4	3-567-110-00	SPRING, TENSION		23	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
5	4-930-336-01	FOOT (FELT)		24	3-704-366-01	SCREW (CASE) (MX8)	
6	7-621-255-15	SCREW +PTT 2X3 (S)		25	4-930-355-31	CASE	
7	3-340-137-01	SPRING		26	*3-352-815-11	PANEL, BACK	
8	3-346-364-01	SPRING (LOADING), TORSION		27	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
9	7-624-105-04	RETAINING, RING E-2,3		28	*3-349-022-01	(US, AEP, UK)... LABEL, MODEL NUMBER (AE/U)	
10	*3-346-334-01	SHAFT (HOLDER FITTING LEFT)			*3-349-031-01	(West Germany)... LABEL, MODEL NUMBER (AE4)	
11	*3-340-150-01	HOLDER, CASSETTE		29	7-685-870-01	SCREW +BVTT 3X5 (S)	
12	*3-340-123-01	RETAINER, CASSETTE		30	7-685-136-11	SCREW +PTTP 2,6X12 TYPE2 N-S	
13	7-621-773-86	SCREW +BVTT 2,6X4 (S)		31	3-349-054-01	KNOB (SLIDE)	
14	3-558-708-21	WASHER, STOPPER		32	X-3340-153-1	BUTTON (B) ASSY	
15	*X-3332-465-1	LEVER (LOCK) ASSY		33	X-3340-152-1	BUTTON (A) ASSY	
16	*3-340-142-01	LEVER (EJECT)		901	*A-2006-098-A	MOUNTED PCB, AUDIO	
17	*X-3332-466-1	BRACKET (LEFT) ASSY		IC701	8-759-604-86	IC M5F7807	
18	3-343-474-01	SPRING, TENSION		IC702	8-759-604-90	IC M5F7907	

#### (2) TAPE TRANSPORT MECHANISM-1 (DECK A: TCM-170RA1) (DECK B: TCM-170RB7)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*X-3343-418-1	CHASSIS ASSY, MECHANICAL		159	3-343-439-01	CAP (REEL TABLE)	
152	3-343-477-01	SPRING, TORSION (EJECT SAFETY)		160	X-3343-401-1	TABEL ASSY, REEL	
153	*3-343-476-01	LEVER (EJECT SAFETY LEVER)		161	3-343-420-01	SPRING, LEAF	
154	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2		162	3-343-411-01	GEAR (FF GEAR)	
155	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY		163	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
156	7-621-773-86	SCREW +BVTT 2.6X4 (S)		HP11	A-2108-129-A	(DECK A)...CHASSIS ASSY, HEAD	
157	3-343-401-01	SPRING, TORSION		HRP11	A-2108-130-A	(DECK B)...CHASSIS ASSY, HEAD	
158	X-3343-415-1	TABEL (REV) ASSY, REEL		HE11			

#### (3) TAPE TRANSPORT MECHANISM-2 (DECK A: TCM-170RA1) (DECK B: TCM-170RB7)



● Semiconductor Lead Layouts

## SECTION 5

# ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**In each case, U:  $\mu$ , for example:UA....:  $\mu$ A..., UPA....:  $\mu$ PA...,UPC....:  $\mu$ PC, UPD....:  $\mu$ PD...



The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	*A-2006-098-A	MOUNTED PCB, AUDIO	C105	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V
921	*1-624-147-11	(DECK A)...PC BOARD, MD-A	C106	1-136-161-00	FILM 0.047MF 5% 50V
	*1-624-146-11	(DECK B)...PC BOARD, MD-B	C107	1-123-875-11	ELECT 10MF 20% 50V
922	*1-624-148-11	PC BOARD, LEAF SW	C108	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V
C41A	1-162-289-31	CERAMIC 390PF 10% 50V	C110	1-131-587-11	TANTALUM 0.68MF 10% 35V
C41B	1-162-289-31	CERAMIC 390PF 10% 50V	C118	1-124-927-11	ELECT 4.7MF 20% 50V
C42A	1-136-157-00	FILM 0.022MF 5% 50V	C119	1-136-169-00	FILM 0.22MF 5% 50V
C42B	1-136-157-00	FILM 0.022MF 5% 50V	C120	1-124-927-11	ELECT 4.7MF 20% 50V
C43A	1-124-282-00	ELECT 22MF 20% 25V	C121	1-123-875-11	ELECT 10MF 20% 50V
C43B	1-124-282-00	ELECT 22MF 20% 25V	C122	1-124-282-00	ELECT 22MF 20% 25V
C44	1-162-288-31	CERAMIC 330PF 10% 50V	C124	1-123-875-11	ELECT 10MF 20% 50V
C45	1-136-273-91	FILM 75PF 5% 630V	C125	1-163-111-00	CERAMIC CHIP 56PF 5% 50V
C47	1-162-209-31	CERAMIC 27PF 5% 50V	C126	1-126-233-11	ELECT 22MF 20% 50V
C48A	1-162-217-31	CERAMIC 56PF 5% 50V	C201	1-124-925-11	ELECT 2.2MF 20% 50V
C48B	1-162-217-31	CERAMIC 56PF 5% 50V	C202	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C61A	1-162-289-31	CERAMIC 390PF 10% 50V	C203	1-124-443-00	ELECT 100MF 20% 10V
C61B	1-162-289-31	CERAMIC 390PF 10% 50V	C204	1-123-875-11	ELECT 10MF 20% 50V
C62A	1-136-157-00	FILM 0.022MF 5% 50V	C205	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V
C62B	1-136-157-00	FILM 0.022MF 5% 50V	C206	1-136-161-00	FILM 0.047MF 5% 50V
C63A	1-124-282-00	ELECT 22MF 20% 25V	C207	1-123-875-11	ELECT 10MF 20% 50V
C63B	1-124-282-00	ELECT 22MF 20% 25V	C208	1-164-161-11	CERAMIC CHIP 0.0022MF 10% 50V
C64	1-162-288-31	CERAMIC 330PF 10% 50V	C210	1-131-587-11	TANTALUM 0.68MF 10% 35V
C65	1-136-273-91	FILM 75PF 5% 630V	C218	1-124-927-11	ELECT 4.7MF 20% 50V
C67	1-162-209-31	CERAMIC 27PF 5% 50V	C219	1-136-169-00	FILM 0.22MF 5% 50V
C68A	1-162-217-31	CERAMIC 56PF 5% 50V	C220	1-124-927-11	ELECT 4.7MF 20% 50V
C68B	1-162-217-31	CERAMIC 56PF 5% 50V	C221	1-123-875-11	ELECT 10MF 20% 50V
C81A	1-126-101-11	ELECT 100MF 20% 16V	C222	1-124-282-00	ELECT 22MF 20% 25V
C81B	1-126-101-11	ELECT 100MF 20% 16V	C224	1-123-875-11	ELECT 10MF 20% 50V
C82A	1-126-101-11	ELECT 100MF 20% 16V	C225	1-163-111-00	CERAMIC CHIP 56PF 5% 50V
C82B	1-126-101-11	ELECT 100MF 20% 16V	C226	1-126-233-11	ELECT 22MF 20% 50V
C83	1-124-499-11	ELECT 1MF 20% 50V	C301	1-123-875-11	ELECT 10MF 20% 50V
C84	1-124-925-11	ELECT 2.2MF 20% 50V	C302	1-123-875-11	ELECT 10MF 20% 50V
C85	1-130-480-00	MYLAR 0.0056MF 5% 50V	C303	1-123-875-11	ELECT 10MF 20% 50V
C86	1-130-476-00	MYLAR 0.0027MF 5% 50V	C304	1-123-875-11	ELECT 10MF 20% 50V
C87	1-130-476-00	MYLAR 0.0027MF 5% 50V	C305	1-124-477-11	ELECT 47MF 20% 25V
C88	1-136-562-11	FILM 0.0082MF 5% 630V	C306	1-124-477-11	ELECT 47MF 20% 25V
C89	1-136-554-11	FILM 0.0018MF 5% 630V	C307	1-124-120-11	ELECT 220MF 20% 16V
C90	1-136-553-11	FILM 0.0015MF 5% 630V	C308	1-124-120-11	ELECT 220MF 20% 16V
C101	1-124-925-11	ELECT 2.2MF 20% 50V	C309	1-123-875-11	ELECT 10MF 20% 50V
C102	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	C310	1-123-875-11	ELECT 10MF 20% 50V
C103	1-124-443-00	ELECT 100MF 20% 10V	C311	1-124-443-00	ELECT 100MF 20% 10V
C104	1-123-875-11	ELECT 10MF 20% 50V	C312	1-126-233-11	ELECT 22MF 20% 50V
			C313	1-123-875-11	ELECT 10MF 20% 50V
			C314	1-123-875-11	ELECT 10MF 20% 50V
			C315	1-124-499-11	ELECT 1MF 20% 50V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description
C316	1-124-902-00	ELECT	0.47MF	20%	50V	D11A	8-719-107-94	DIODE 1SS132
C317	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	D11B	8-719-107-94	DIODE 1SS132
C318	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V			
C319	1-124-925-11	ELECT	2.2MF	20%	50V	D81	8-719-107-94	DIODE 1SS132
C320	1-124-925-11	ELECT	2.2MF	20%	50V	D301	8-719-000-26	DIODE US1060M
C321	1-124-927-11	ELECT	4.7MF	20%	50V	D302	8-719-000-90	ZENER DIODE UZL-7M3
C701	1-164-159-11	CERAMIC	0.1MF		50V	D303	8-719-000-90	ZENER DIODE UZL-7M3
C702	1-164-159-11	CERAMIC	0.1MF		50V	D304	8-719-000-26	DIODE US1060M
C703	1-124-563-11	ELECT	2200MF	20%	25V	D701	8-719-200-02	DIODE 10E2
C704	1-124-480-11	ELECT	470MF	20%	25V	D702	8-719-200-02	DIODE 10E2
C705	1-124-120-11	ELECT	220MF	20%	16V	D703	8-719-200-02	DIODE 10E2
C706	1-124-360-00	ELECT	1000MF	20%	16V	D704	8-719-200-02	DIODE 10E2
C707	1-124-477-11	ELECT	47MF	20%	25V	D705	8-719-000-26	DIODE US1060M
C708	1-124-472-11	ELECT	470MF	20%	10V	D706	8-719-000-26	DIODE US1060M
C709	1-164-159-11	CERAMIC	0.1MF		50V	D707	8-719-200-02	DIODE 10E2
C710	1-164-159-11	CERAMIC	0.1MF		50V	D708	8-719-200-02	DIODE 10E2
C711	1-124-472-11	ELECT	470MF	20%	10V	D709	8-719-933-77	ZENER DIODE HZS12B2L
C712	1-164-159-11	CERAMIC	0.1MF		50V	D710	8-719-000-69	ZENER DIODE UZL-6H2
C713	1-164-159-11	CERAMIC	0.1MF		50V	D711	1-807-913-21	DIODE 11EQS04
C714	1-124-472-11	ELECT	470MF	20%	10V	D801	8-719-200-02	DIODE 10E2
C715	1-124-499-11	ELECT	1MF	20%	50V	D802	8-719-200-02	DIODE 10E2
C716	1-124-482-11	ELECT	33MF	20%	25V	D803	8-719-200-02	DIODE 10E2
C717	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	D804	8-719-000-26	DIODE US1060M
C801	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	D805	8-719-000-26	DIODE US1060M
C802	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	D806	8-719-942-15	LED MPG3877S
C803	1-124-443-00	ELECT	100MF	20%	10V	D807	8-719-942-15	LED MPG3877S
C804	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	D808	8-719-942-15	LED MPG3877S
C805	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	D809	8-719-942-15	LED MPG3877S
C806	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	D810	8-719-942-14	LED MAY3877S
C807	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	D811	8-719-942-17	LED MPR3877S
C808	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	D812	8-719-942-15	LED MPG3877S
C809	1-126-176-11	ELECT	220MF	20%	10V	D813	8-719-942-17	LED MPR3877S
C810	1-124-925-11	ELECT	2.2MF	20%	50V	D814	8-719-942-17	LED MPR3877S
C811	1-124-927-11	ELECT	4.7MF	20%	50V	HP11	A-2108-129-A	(DECK A)...CHASSIS ASSY, HEAD
C812	1-124-925-11	ELECT	2.2MF	20%	50V	HRP11	A-2108-130-A	(DECK B)...CHASSIS ASSY, HEAD
C813	1-164-159-11	CERAMIC	0.1MF		50V	HE11		
C814	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	IC81A	8-759-111-44	IC UPC4570C-1
CNP11A*1-564-501-11	PIN, CONNECTOR 8P					IC81B	8-759-111-44	IC UPC4570C-1
CNP11B*1-506-615-11	PIN, CONNECTOR 9P					IC301	8-759-939-73	IC BA3308
CNP12A*1-564-337-00	PIN, CONNECTOR 3P					IC303	8-752-033-61	IC CXA1198AP
CNP12B*1-564-337-61	PIN, CONNECTOR 3P					IC304	8-759-009-05	IC MC14051BF
CNP13A*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P					IC305	8-759-009-07	IC MC14053BF
CNP13B*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P					IC306	8-759-945-58	IC RC4558P
CNP81A*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P					IC307	8-759-945-58	IC RC4558P
CNP81B*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P					IC308	8-759-009-07	IC MC14053BF
CNP82A*1-564-339-00	PIN, CONNECTOR 5P					IC309	8-752-032-05	IC CXA1101M
CNP82B*1-564-339-61	PIN, CONNECTOR 5P					IC701	8-759-604-86	IC M5F7807
CNP83 *1-564-338-61	PIN, CONNECTOR 4P					IC702	8-759-604-90	IC M5F7907
CNP84 *1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P					IC801	8-759-632-53	IC M50964-212FP
CNP301*1-565-291-11	SOCKET, CONNECTOR 13P					L41	1-410-780-11	INDUCTOR 27MMH
CNP801*1-564-338-00	PIN, CONNECTOR 4P					L61	1-410-780-11	INDUCTOR 27MMH
CNP802*1-564-337-00	PIN, CONNECTOR 3P					L801	1-408-080-00	INDUCTOR 100UH
CNP803*1-564-338-61	PIN, CONNECTOR 4P					LPF101	1-236-087-11	FILTER, LOW PASS
CNP804*1-564-338-71	PIN, CONNECTOR 4P					LPF201	1-236-087-11	FILTER, LOW PASS
						M11A	X-3343-408-1	(DECK A)...MOTOR ASSY
						M11B	X-3343-408-1	(DECK B)...MOTOR ASSY

Ref.No.	Part No.	Description
PM11A	1-454-456-11	(DECK A)...SOLENOID, PLUNGER
PM11B	1-454-456-11	(DECK B)...SOLENOID, PLUNGER
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12A	8-719-939-23	PHOTO TRANSISTOR GP2S09-C
Q12B	8-719-939-23	PHOTO TRANSISTOR GP2S09-C
Q81	8-729-111-29	TRANSISTOR 2SD1388
Q82	8-729-100-13	TRANSISTOR 2SC2001
Q83	8-729-100-13	TRANSISTOR 2SC2001
Q101	8-729-900-98	TRANSISTOR DTC143TK
Q102	8-729-103-16	TRANSISTOR 2SC1622A
Q103	8-729-900-98	TRANSISTOR DTC143TK
Q201	8-729-900-98	TRANSISTOR DTC143TK
Q202	8-729-103-16	TRANSISTOR 2SC1622A
Q203	8-729-900-98	TRANSISTOR DTC143TK
Q301	8-729-900-53	TRANSISTOR DTA114EK
Q302	8-729-901-04	TRANSISTOR DTA114EK
Q303	8-729-900-98	TRANSISTOR DTC143TK
Q304	8-729-100-76	TRANSISTOR 2SA812-M6
Q305	8-729-901-04	TRANSISTOR DTA114EK
Q306	8-729-901-04	TRANSISTOR DTA114EK
Q307	8-729-901-04	TRANSISTOR DTA114EK
Q308	8-729-901-04	TRANSISTOR DTA114EK
Q701	8-729-103-16	TRANSISTOR 2SC1622A
Q702	8-729-904-27	TRANSISTOR 2SD1761-E
Q703	8-729-103-16	TRANSISTOR 2SC1622A
Q704	8-729-904-27	TRANSISTOR 2SD1761-E
Q705	8-729-103-16	TRANSISTOR 2SC1622A
Q706	8-729-103-16	TRANSISTOR 2SC1622A
Q801	8-729-100-76	TRANSISTOR 2SA812-M6
Q802	8-729-801-83	TRANSISTOR 2SB1013
Q803	8-729-801-83	TRANSISTOR 2SB1013
Q804	8-729-801-83	TRANSISTOR 2SB1013
Q805	8-729-801-83	TRANSISTOR 2SB1013
Q806	8-729-801-83	TRANSISTOR 2SB1013
Q807	8-729-901-04	TRANSISTOR DTA114EK
Q808	8-729-901-04	TRANSISTOR DTA114EK
Q811	8-729-100-76	TRANSISTOR 2SA812-M6
Q812	8-729-100-76	TRANSISTOR 2SA812-M6
Q813	8-729-100-76	TRANSISTOR 2SA812-M6
Q814	8-729-900-53	TRANSISTOR DTC114EK
Q816	8-729-100-76	TRANSISTOR 2SA812-M6
R11B	1-247-834-11	CARBON 1.3K 5% 1/4W
R12B	1-249-414-11	CARBON 560 5% 1/4W
R13B	1-247-818-11	CARBON 300 5% 1/4W
R14A	1-249-408-11	CARBON 180 5% 1/4W
R14B	1-249-408-11	CARBON 180 5% 1/4W
R17A	1-249-437-11	CARBON 47K 5% 1/4W
R17B	1-249-437-11	CARBON 47K 5% 1/4W
R18A	1-249-437-11	CARBON 47K 5% 1/4W
R18B	1-249-437-11	CARBON 47K 5% 1/4W
R41A	1-247-881-00	CARBON 120K 5% 1/4W
R41B	1-247-881-00	CARBON 120K 5% 1/4W
R42A	1-249-405-11	CARBON 100 5% 1/4W
R42B	1-249-405-11	CARBON 100 5% 1/4W

Ref.No.	Part No.	Description
R43A	1-247-882-11	CARBON 130K 5% 1/4W
R43B	1-247-882-11	CARBON 130K 5% 1/4W
R44A	1-249-426-11	CARBON 5.6K 5% 1/4W
R44B	1-249-426-11	CARBON 5.6K 5% 1/4W
R45	1-249-430-11	CARBON 12K 5% 1/4W
R61A	1-247-881-00	CARBON 120K 5% 1/4W
R61B	1-247-881-00	CARBON 120K 5% 1/4W
R62A	1-249-405-11	CARBON 100 5% 1/4W
R62B	1-249-405-11	CARBON 100 5% 1/4W
R63A	1-247-882-11	CARBON 130K 5% 1/4W
R63B	1-247-882-11	CARBON 130K 5% 1/4W
R64A	1-249-426-11	CARBON 5.6K 5% 1/4W
R64B	1-249-426-11	CARBON 5.6K 5% 1/4W
R65	1-249-430-11	CARBON 12K 5% 1/4W
R81A	1-249-409-11	CARBON 220 5% 1/4W
R81B	1-249-409-11	CARBON 220 5% 1/4W
R82A	1-249-409-11	CARBON 220 5% 1/4W
R82B	1-249-409-11	CARBON 220 5% 1/4W
R83	1-249-429-11	CARBON 10K 5% 1/4W
R84	△ 1-212-849-00	FUSIBLE 4.7 5% 1/4W F
R85	1-249-435-11	CARBON 33K 5% 1/4W
R86	1-249-435-11	CARBON 33K 5% 1/4W
R101	1-216-084-00	METAL GLAZE 30K 5% 1/10W
R102	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R103	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R104	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R105	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R106	1-216-068-00	METAL GLAZE 6.2K 5% 1/10W
R107	1-216-043-00	METAL GLAZE 560 5% 1/10W
R108	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W
R109	1-216-077-00	METAL GLAZE 15K 5% 1/10W
R110	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W
R111	1-216-105-00	METAL GLAZE 220K 5% 1/10W
R112	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R113	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R114	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R120	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R121	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
R122	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R123	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R124	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R125	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W
R126	1-216-060-00	METAL GLAZE 3K 5% 1/10W
R127	1-216-037-00	METAL GLAZE 330 5% 1/10W
R128	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R129	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R130	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R131	1-216-748-11	METAL GLAZE 39K 5% 1/10W
R132	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W
R133	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R201	1-216-084-00	METAL GLAZE 30K 5% 1/10W
R202	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R203	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R204	1-216-049-00	METAL GLAZE 1K 5% 1/10W

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				
R205	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R206	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W	
R207	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R208	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R209	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R210	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R211	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R212	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R213	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R214	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R220	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R221	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R222	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R223	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R224	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R225	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R226	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R227	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R228	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R229	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R232	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R233	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R301	$\Delta$ 1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R302	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R303	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R304	1-216-052-00	METAL GLAZE	1.3K	5%	1/10W	
R305	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R306	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R307	1-249-409-11	CARBON	220	5%	1/4W	
R308	1-249-409-11	CARBON	220	5%	1/4W	
R309	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R310	1-249-417-11	CARBON	1K	5%	1/4W	
R311	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R312	1-249-437-11	CARBON	47K	5%	1/10W	
R313	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R314	1-249-409-11	CARBON	220	5%	1/4W	
R316	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R317	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R318	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R319	1-215-460-00	METAL	43K	1%	1/6W	
R320	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R321	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R322	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R323	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R325	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R332	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R333	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R334	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R335	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R336	1-216-088-00	METAL GLAZE	43K	5%	1/10W	
R337	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R338	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R339	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R340	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R341	1-216-091-00	METAL GLAZE	56K	5%	1/10W	

Ref.No.	Part No.	Description				
R342	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R343	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R344	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R345	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R346	1-216-084-00	METAL GLAZE	30K	5%	1/10W	
R347	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R348	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R349	1-216-098-00	METAL GLAZE	110K	5%	1/10W	
R350	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R351	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R352	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R353	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R354	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R355	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R356	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R357	1-216-088-00	METAL GLAZE	43K	5%	1/10W	
R358	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R359	1-216-102-00	METAL GLAZE	160K	5%	1/10W	
R360	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R361	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R362	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R363	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R364	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R365	1-216-094-00	METAL GLAZE	75K	5%	1/10W	
R366	1-216-098-00	METAL GLAZE	110K	5%	1/10W	
R367	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R368	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R369	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R370	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R371	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R372	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R373	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R374	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R375	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R376	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R377	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R378	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R379	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R701	$\Delta$ 1-219-108-11	FUSIBLE	1.5	5%	1W	F
R702	1-249-423-11	CARBON	3.3K	5%	1/4W	
R703	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R704	$\Delta$ 1-219-109-11	FUSIBLE	3.9	5%	1W	F
R705	$\Delta$ 1-219-110-11	FUSIBLE	150	5%	1W	F
R706	$\Delta$ 1-219-110-11	FUSIBLE	150	5%	1W	F
R707	1-249-425-11	CARBON	4.7K	5%	1/4W	
R708	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R709	1-249-419-11	CARBON	1.5K	5%	1/4W	
R710	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R711	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R712	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R713	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R800	1-249-417-11	CARBON	1K	5%	1/4W	
R801	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R802	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R803	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R804	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R805	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.



Ref.No.	Part No.	Description				
R806	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R807	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R808	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R809	1-249-393-11	CARBON	10	5%	1/4W	
R810	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R811	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R812	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R813	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R814	1-249-393-11	CARBON	10	5%	1/4W	
R815	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R816	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R817	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R818	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R819	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R820	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R824	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R825	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R826	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R827	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R828	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R829	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R830	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R831	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R832	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R833	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R834	1-247-895-00	CARBON	470K	5%	1/4W	
R835	1-247-895-00	CARBON	470K	5%	1/4W	
R836	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R837	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R839	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R840	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R841	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R842	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R843	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R844	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R845	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R846	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R847	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R848	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R849	1-249-412-11	CARBON	390	5%	1/4W	
R850	1-249-411-11	CARBON	330	5%	1/4W	
R852	1-249-412-11	CARBON	390	5%	1/4W	
R853	1-249-411-11	CARBON	330	5%	1/4W	
R854	1-249-415-11	CARBON	680	5%	1/4W	
R855	1-249-417-11	CARBON	1K	5%	1/4W	
R856	1-249-426-11	CARBON	5.6K	5%	1/4W	
R857	1-249-430-11	CARBON	12K	5%	1/4W	
R858	1-249-407-11	CARBON	150	5%	1/4W	
R859	1-249-409-11	CARBON	220	5%	1/4W	
R860	1-249-411-11	CARBON	330	5%	1/4W	
R861	1-249-413-11	CARBON	470	5%	1/4W	
R862	1-247-832-11	CARBON	1.1K	5%	1/4W	
R863	1-249-417-11	CARBON	1K	5%	1/4W	
R864	1-249-420-11	CARBON	1.8K	5%	1/4W	
R865	1-249-424-11	CARBON	3.9K	5%	1/4W	
R867	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

Ref.No.	Part No.	Description			
RV41A	1-228-989-00	RES, ADJ, CARBON 470			
RV41B	1-228-989-00	RES, ADJ, CARBON 470			
RV42	1-230-500-11	RES, ADJ, CARBON 220K			
RV61A	1-228-989-00	RES, ADJ, CARBON 470			
RV61B	1-228-989-00	RES, ADJ, CARBON 470			
RV62	1-230-500-11	RES, ADJ, CARBON 220K			
RV101	1-228-995-00	RES, ADJ, CARBON 22K			
RV201	1-228-995-00	RES, ADJ, CARBON 22K			
RY81	1-515-614-11	RELAY			
S11A	1-571-281-21	SWITCH, LEAF (HALF DET)			
S11B	1-571-281-21	SWITCH, LEAF (HALF DET)			
S12B	1-571-281-21	SWITCH, LEAF (ERASE PROOF-SIDE A)			
S13B	1-571-281-21	SWITCH, LEAF (ERASE PROOF-SIDE B)			
S14A	1-571-281-21	SWITCH, LEAF (CrO2)			
S14B	1-571-281-21	SWITCH, LEAF (CrO2)			
S15B	1-571-281-21	SWITCH, LEAF (METAL)			
S301	1-554-798-31	SWITCH, SLIDE (ISS)			
S302	1-570-845-11	SWITCH, SLIDE (DOLBY ON/OFF)			
S801	1-554-303-21	SWITCH, KEY BOARD (DECK A □)			
S802	1-554-303-21	SWITCH, KEY BOARD (DECK A ▷)			
S803	1-554-303-21	SWITCH, KEY BOARD (DECK A ◁)			
S804	1-554-303-21	SWITCH, KEY BOARD (DECK A ◀◀)			
S805	1-554-303-21	SWITCH, KEY BOARD (DECK A ▶▶)			
S806	1-554-303-21	SWITCH, KEY BOARD (DECK B □)			
S807	1-554-303-21	SWITCH, KEY BOARD (DECK B ▯)			
S808	1-554-303-21	SWITCH, KEY BOARD (DECK B ▷)			
S809	1-554-303-21	SWITCH, KEY BOARD (DECK B ◁)			
S810	1-554-303-21	SWITCH, KEY BOARD (DECK B ○)			
S811	1-554-303-21	SWITCH, KEY BOARD (DECK B ◀◀)			
S812	1-554-303-21	SWITCH, KEY BOARD (DECK B ▶▶)			
S813	1-554-303-21	SWITCH, KEY BOARD (DECK B ●)			
S814	1-554-303-21	SWITCH, KEY BOARD (AMS/BLANK SKIP)			
S815	1-554-303-21	SWITCH, KEY BOARD (DUBBING SPEED:HIGH)			
S816	1-554-303-21	SWITCH, KEY BOARD (DUBBING SPEED:NORMAL)			
S818	1-570-835-11	SWITCH, SLIDE (DIRECTION MODE)			
T81	1-433-337-11	TRANSFORMER, BIAS OSCILLATION			
X801	1-577-082-31	OSCILLATOR, CERAMIC (4MHz)			

