

TC-H5900

SERVICE MANUAL



TC-H5900 is the integrated stereo amplifier section in the HiFi component system MHC-5900/E90X.

AEP Model
UK Model
E Model
Australian Model
Tourist Model

Model Name Using Similar Mechanism	TC-H4900
Tape Transport	DECK A :TCM-190RA12AL
Mechanism Type	DECK B :TCM-190RB12AL

SPECIFICATIONS

Recording system
4-track 2-channel stereo

Frequency response
(DOLBY NR OFF)
40 - 13,000 Hz (± 3 dB),
using Sony TYPE I cassette
40 - 14,000 Hz (± 3 dB),
using Sony TYPE II cassette
40 - 15,000 Hz (± 3 dB), using
Sony TYPE IV cassette

Wow and flutter
0.1% WRMS $\pm 0.3\%$ (DIN)

Dimensions
Approx. 225 x 125 x 230 mm (w/h/d)
(8 7/8 x 5 x 9 1/8 inches)

Mass:
Approx. 2.9 kg
(6 lb 7 oz)

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

STEREO CASSETTE DECK
SONY®

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SERVICE NOTE

● Power Supply Used Servicing

This unit does not have its own power supply. As it works on the power supplied from the amplifier (TA-H5900) and equalizer (SEQ-H5900) used for this series, connect this amplifier when servicing the unit (conduction repair, etc.).

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

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.

SECTION 1 GENERAL

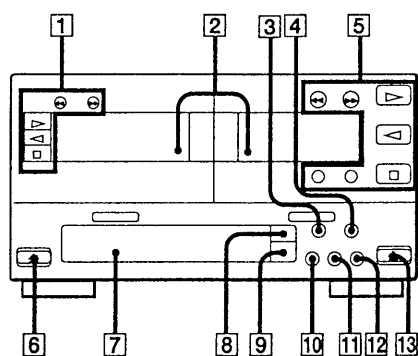
This section is extracted from MHC-5900 instruction manual.

Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

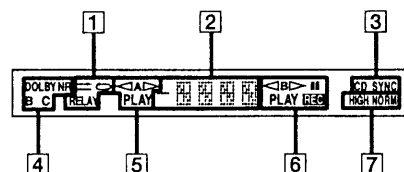
Front Panel

Tape player section



- 1 Tape operating buttons (for deck A)
 - ▷ (front side play)
 - ◁ (reverse side play)
 - (stop)
 - ▶▶ (fast rightward and AMS**)
 - ◀◀ (fast leftward and AMS**)
- 2 Cassette compartments
- 3 CD SYNCHRO button
- 4 DUBBING MODE button
- 5 Tape operating buttons (for deck B)
 - ▷ (front side play)
 - ◁ (reverse side play)
 - (stop) (13)
 - ▶▶ (fast rightward and AMS**)
 - ◀◀ (fast leftward and AMS**)
 - REC (recording)
 - || PAUSE
- **AMS: Automatic Music Sensor
- 6 ⏮ button (for deck A)
- 7 Display window
- 8 COUNTER A/B button
- 9 RESET button
- 10 DOLBY NR button
- 11 DIRECTION MODE button
- 12 ○ MUTE button
- 13 ⏭ button (for deck B)

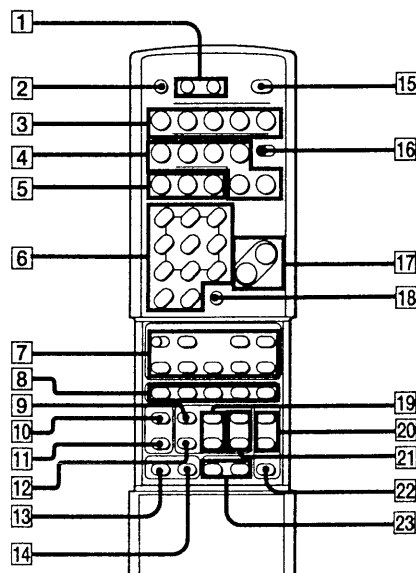
Display Window



- 1 Direction mode indication
- 2 Tape counter indication
- 3 CD SYNC (synchro) indication
- 4 Dolby NR indication
- 5 Deck A status indication
- 6 Deck B status indication
- 7 Dubbing mode indication

- 6 CD/Tuner/numeric buttons
- 7 VCR operating buttons
- 8 TV operating buttons
- 9 PRO LOGIC button
- 10 AUDIO FUNCTION button
- 11 VIDEO FUNCTION button
- 12 TEST TONE button
- 13 CHECK button
- 14 CLEAR button
- 15 SYSTEM POWER switch
- 16 CD/MD switch
- 17 VOLUME +/– buttons
- 18 MUTING button
- 19 REAR LEVEL +/– buttons
- 20 MENU 1, 2 button
- 21 CENTER LEVEL +/– buttons
- 22 DIRECT button
- 23 BALANCE L/R button

Remote commander RM-S770X

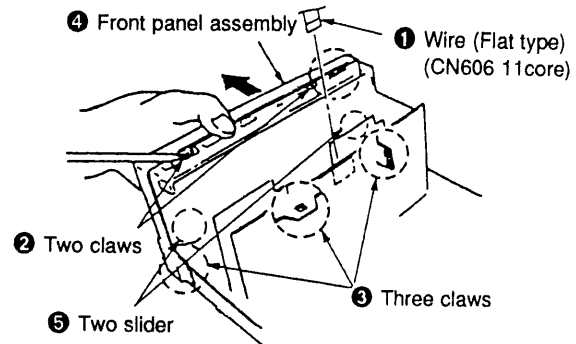
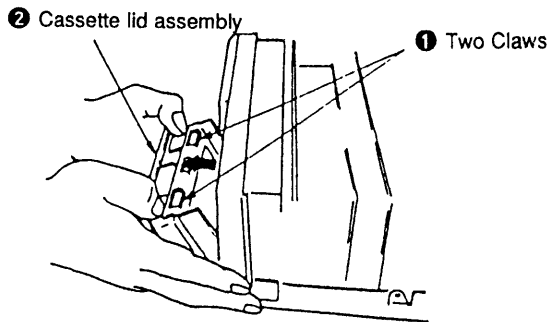


- 1 TAPE DECK A/B buttons
- 2 SLEEP button
- 3 CD/MD operating buttons
- 4 Cassette deck operating buttons
- 5 Tuner operating buttons

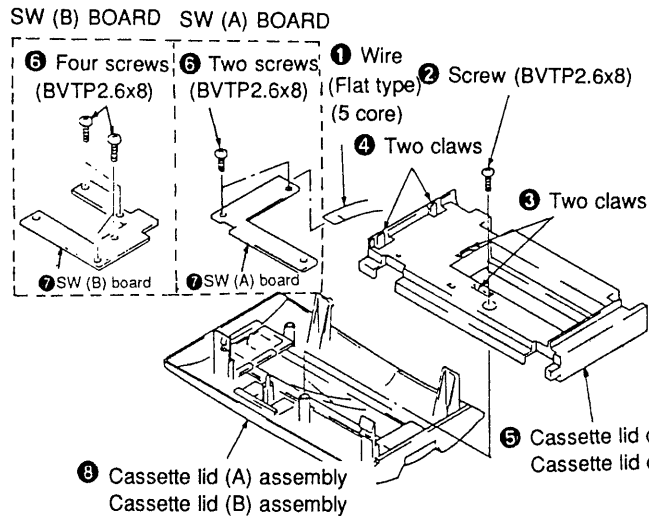
SECTION 2 DISASSEMBLY

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

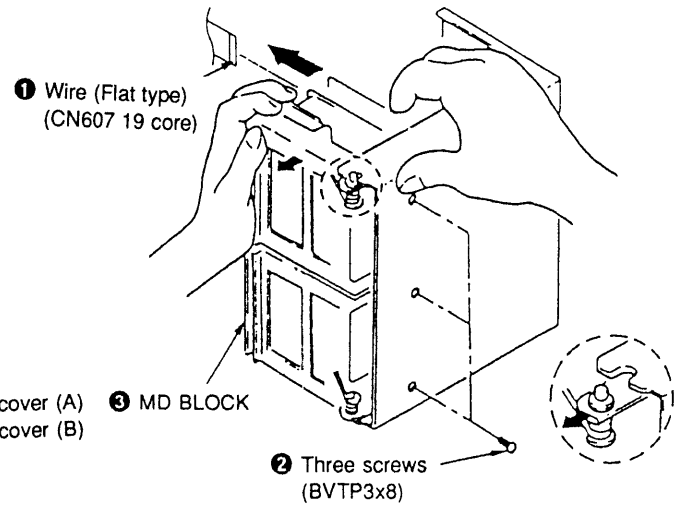
[FRONT PANEL ASSEMBLY]



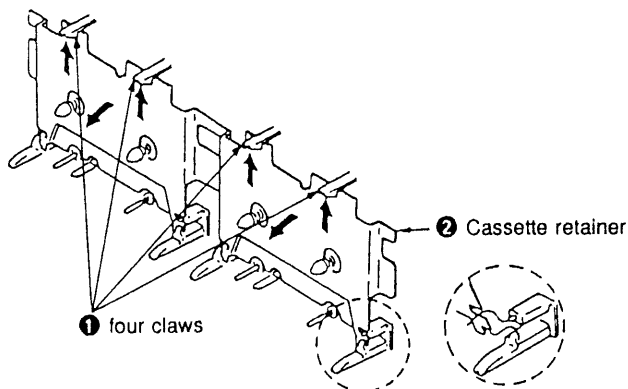
[SW (A), (B) BOARD]



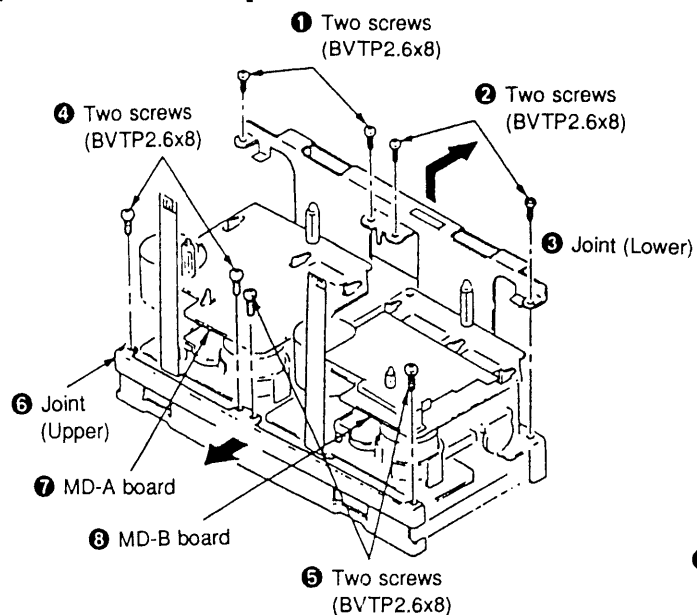
[MD BLOCK]



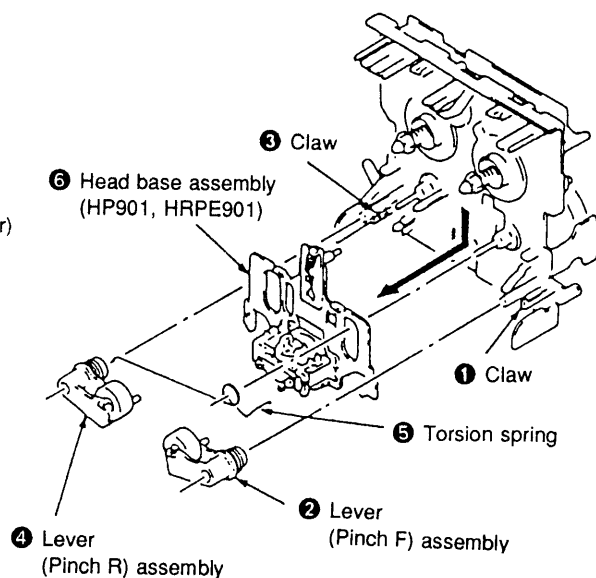
[CASSETTE RETAINER]



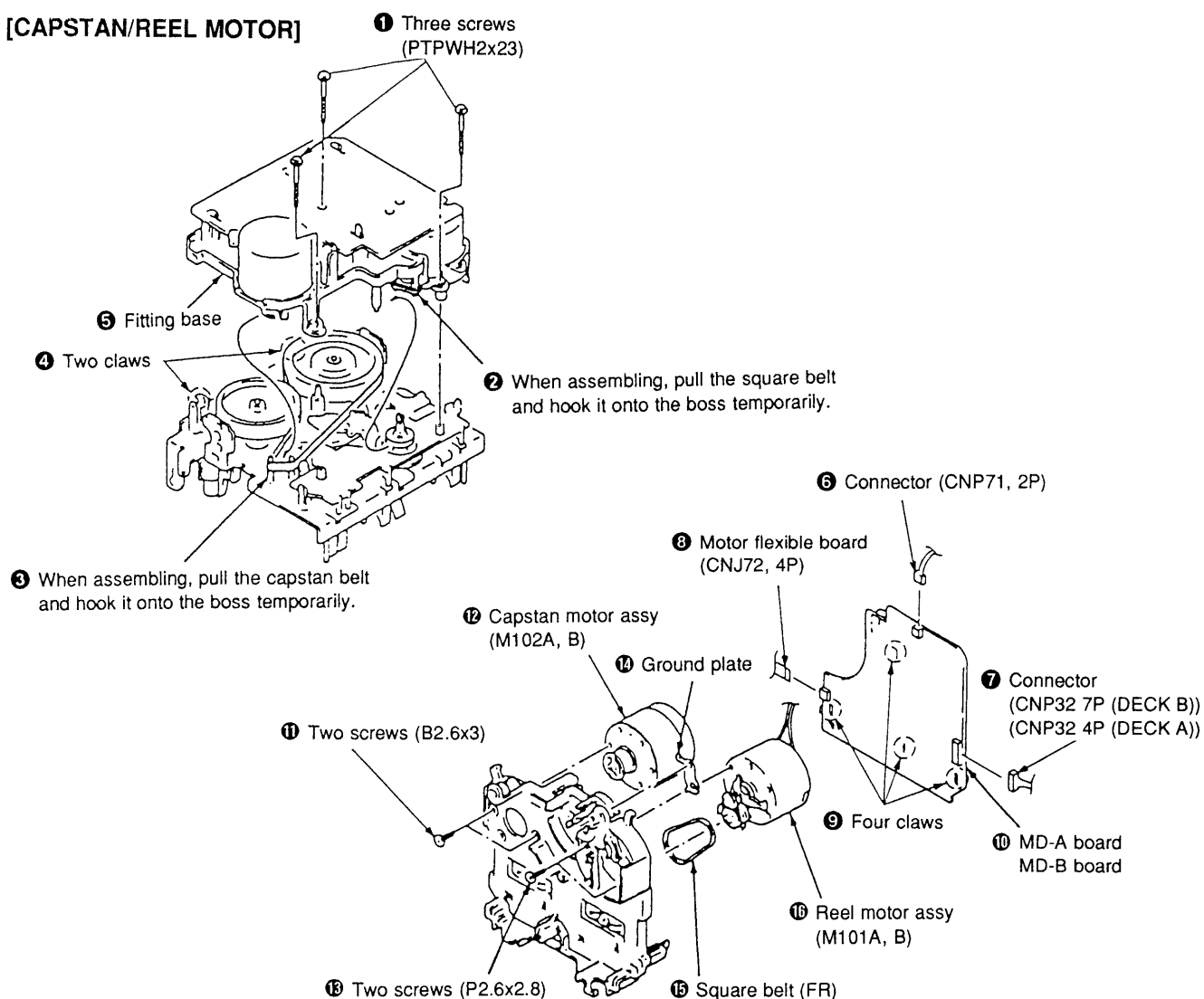
[MECHANISM DECK]



[HEAD BASE ASSEMBLY]



[CAPSTAN/REEL MOTOR]



SECTION 3 MECHANICAL ADJUSTMENTS

PRECAUTION

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

record/playback head	pinch roller
erase head	rubber belt
capstan	idler
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustment, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	30 to 65 g•cm (0.42 to 0.90 oz•inch)
FWD Back tension		1 to 6 g•cm (0.014 to 0.08 oz•inch)
REV	CQ-102RC	30 to 65 g•cm (0.42 to 0.90 oz•inch)
REV Back tension		1 to 6 g•cm (0.014 to 0.08 oz•inch)
FF, REW	CQ-201B	70 to 120 g•cm (0.98 to 1.67 oz•inch)

SECTION 4 ELECTRICAL ADJUSTMENTS

1. The adjustment should be performed in the publication.
(Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
 - Switch position
DOLBY NR switch : OFF

• Test Tape

Tape	Contents	Used for
P-4-A100	10kHz, -10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

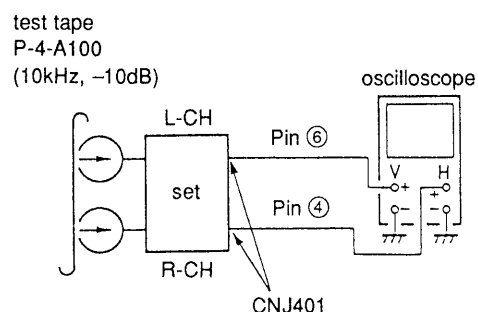
0 dB = 0.775 V

Record/ Playback Head Azimuth Adjustment

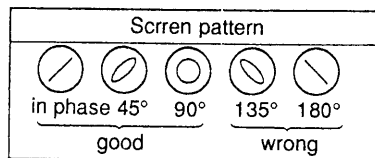
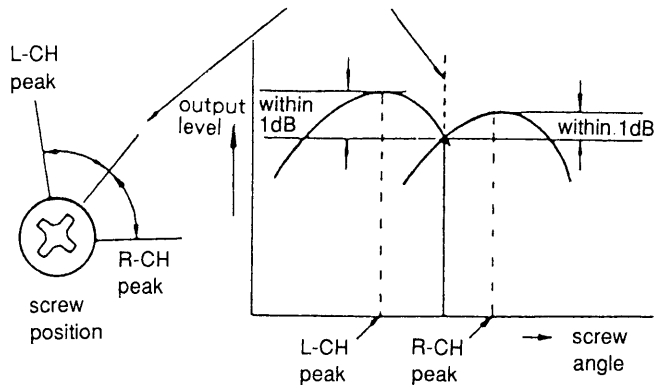
DECK A **DECK B**

Procedure :

1. Forward Playback Mode

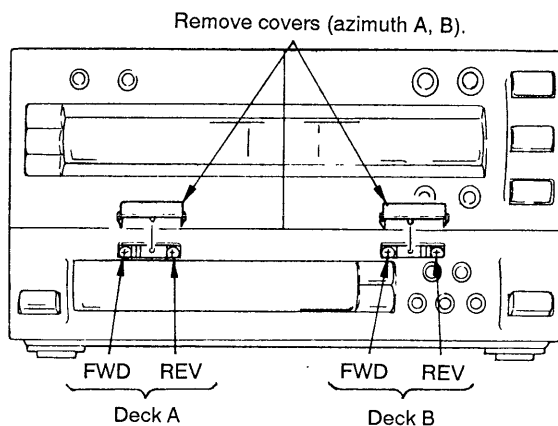


- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



- After the adjustments, apply suitable locking compound to the parts adjusted.

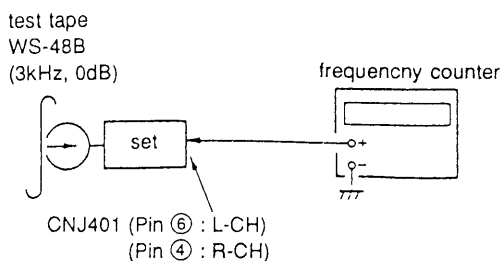
Adjustment Location :



Tape Speed Adjustment **DECK A** **DECK B**

Procedure :

- Perform high speed adjustment before normal speed adjustment.
- Mode : playback



(High Speed Adjustment)

- Short-circuit TP601 (Main board) with the power off.
- Turn on the power, press the DUB switch, and set high speed playback.
- Set decks A and B into the FWD mode.
- Adjust deck A: RV72A (H) and deck B: RV72B (H) so that the reading of the frequency counter becomes the specified value.
- After adjusting, short-circuit TP601.

(Normal Speed Adjustment)

- Set the FWD playback mode.
- Adjust deck A: RV71A (N), deck B: RV71B (N) so that the reading of the frequency counter becomes the adjustment value.

Adjustment Values:

High Speed	6000 $\pm$ 30Hz
Normal Speed	3000 $\pm$ 15Hz

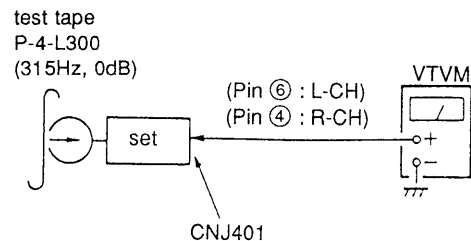
Adjust so that the difference between tape top and tape end is within 3%. Adjust so that the deviation between the speeds of deck A and deck B at the tape top is within 1.5%.

Adjustment Location : MD-A and MD-B boards. (TCM-190MD)

Play back Level Adjustment **DECK A** **DECK B**

Procedure :

Mode : playback



Deck A is RV11A (L-CH) and RV21A (R-CH), deck B is RV11B (L-CH) and RV21B (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level :

CNJ401 PB level : $-7.5\text{dB} \pm 0.5\text{dB}$ (0.30 to 0.34V)

Level Difference between Channels : within 0.5dB

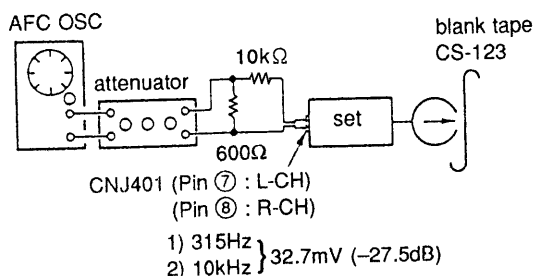
Confirm the level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD-A and MD-B boards

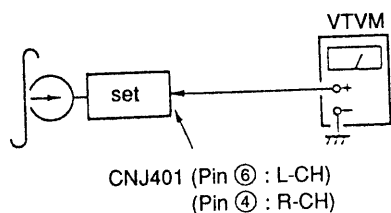
Record Bias Adjustment **DECK B**

Procedure :

1. Mode : record



2. Mode : Playback



Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjustment the RV81 (L-CH) and RV91 (R-CH) to repeat step 1 and 2.

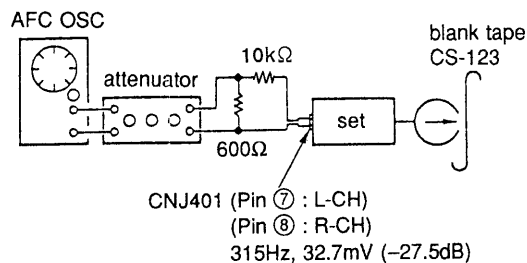
Adjustment Level : Playback output of 10kHz to playback output of 315Hz : $\pm 0.5\text{dB}$.

Adjustment Location : MD-B board

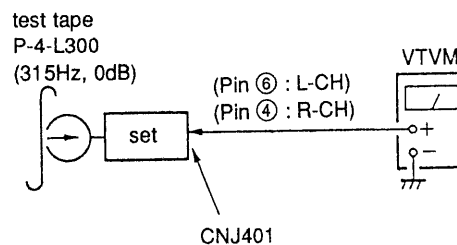
Record Level Adjustment **DECK B**

Procedure :

1. Mode : record



2. Mode : Playback



Confirm playback the signal recorded in step 1 become adjustment level as follows.

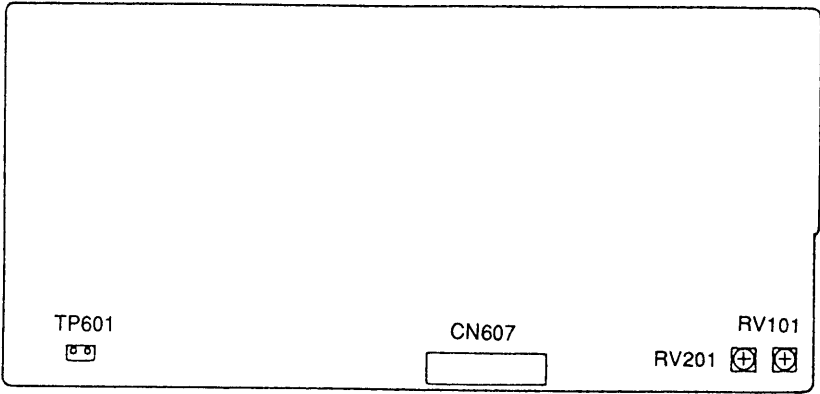
If these levels do not adjustment level, adjustment the RV101 (L-CH) and RV201 (R-CH) to repeat step 1 and 2.

Adjustment Level :
CNJ401 PB level : $-27.5\text{dB} \pm 0.5\text{dB}$ (31 to 35mV).

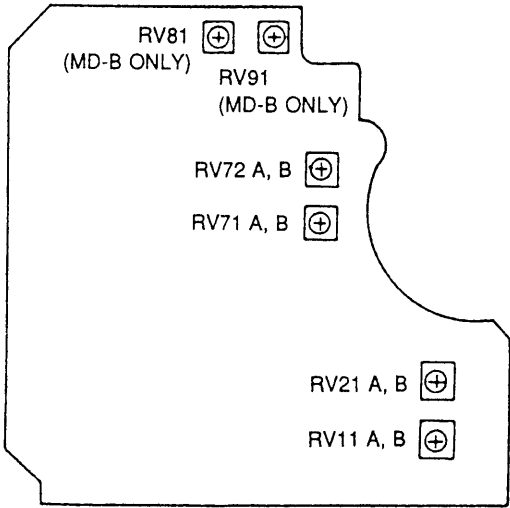
Adjustment Location : MAIN board

Adjustment Location :

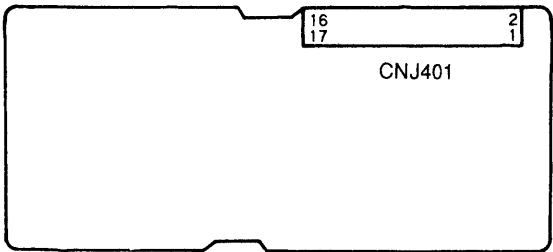
[MAIN BOARD] — Component Side —



[MD-A, MD-B BOARD] — Component Side —



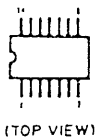
[CONNECTOR BOARD] — Component Side —



SECTION 5 DIAGRAMS

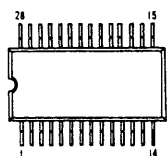
• Semiconductor Lead Layouts

**BA3308F
CD4066BCM**



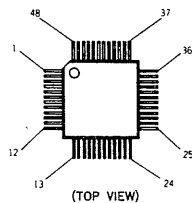
(TOP VIEW)

CXA1331M



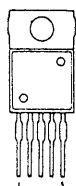
(TOP VIEW)

CXA1599Q

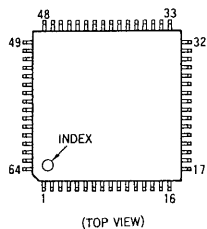


(TOP VIEW)

MC14052BF

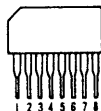


M38122-M2-060FP



(TOP VIEW)

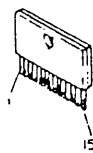
M5230L-A



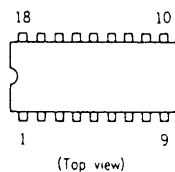
PST600E-T



TA8242AK

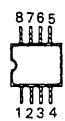


μPC1297CA



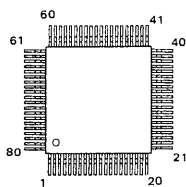
(Top view)

μPC4570G2



(TOP VIEW)

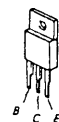
μPC78052-020



**2SA1162-G
2SA1344
2SA1602-F
2SA4154-F L6
2SC3395
2SC3398
DTA144EK**



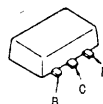
**2SB1094-LK
2SD2012**



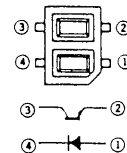
2SB1116-K



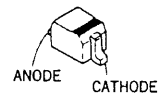
**2SD1622-S
2SD999-CLCK**



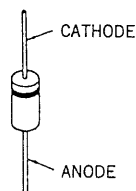
NJL5165K-B(H1)



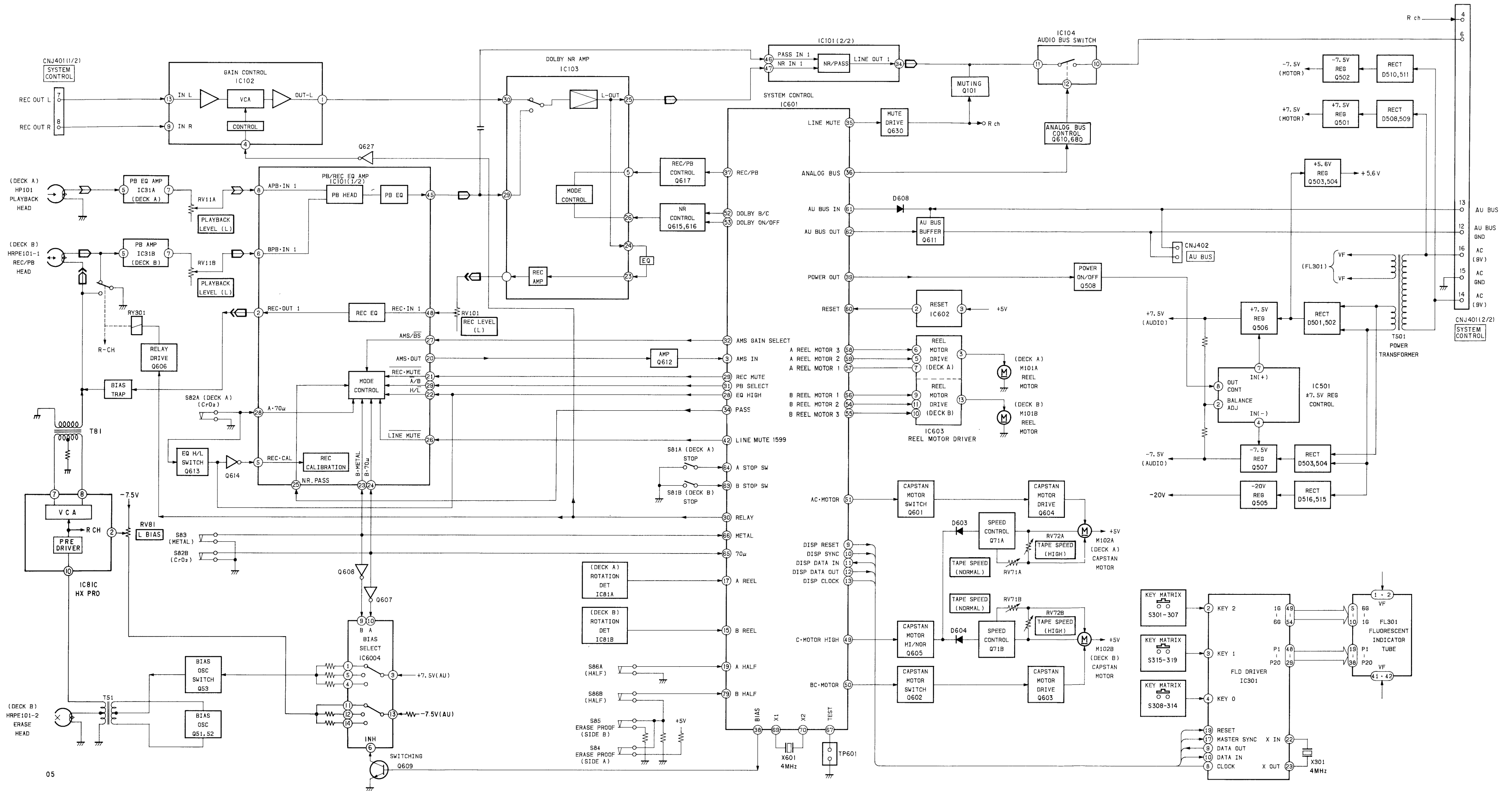
**DTZ6.8B
MA110
MA8062
MA8082-M
MA8091
MA8180
02DZ2.0
1SS352**



10E2

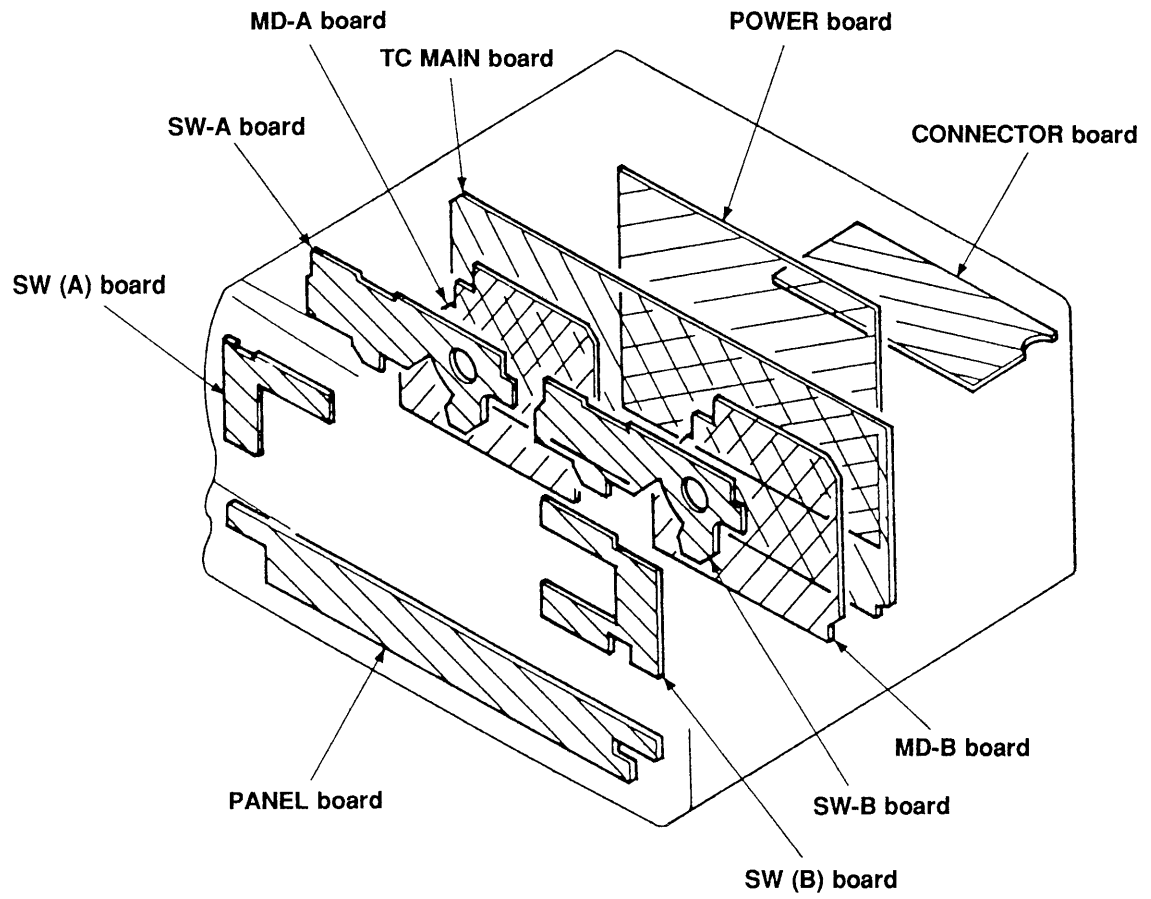


5-1. BLOCK DIAGRAM

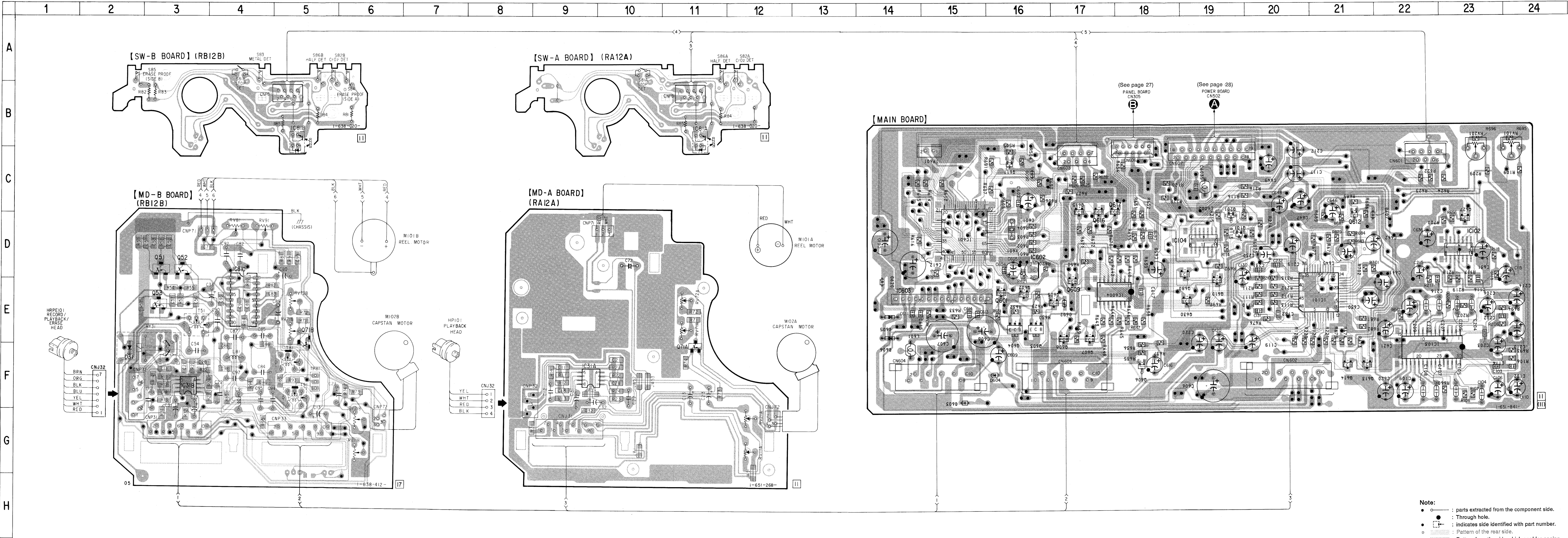


05

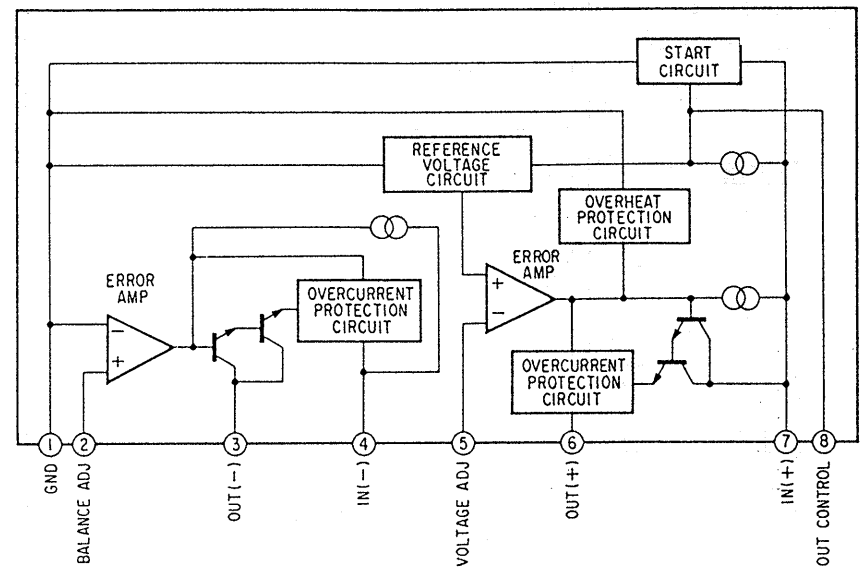
• Circuit Boards Location



Semiconductor Location	
Ref. No.	Location
D31	F-2
D602	E-17
D603	F-15
D604	F-16
D605	E-14
D606	F-14
D607	D-22
D608	C-16
D620	E-14
IC31A	F-9
IC31B	F-3
IC81A	B-11
IC81B	B-5
IC81C	D-4
IC101	E-21
IC102	E-23
IC103	F-23
IC104	D-19
IC601	D-15
IC602	D-16
IC603	E-14
IC6004	E-18
Q51	D-3
Q52	D-3
Q53	E-3
Q71A	F-11
Q71B	E-5
Q101	D-20
Q201	C-19
Q601	E-16
Q602	E-16
Q603	F-16
Q604	F-16
Q605	E-17
Q606	F-18
Q607	F-17
Q608	F-17
Q609	E-17
Q610	E-19
Q611	C-16
Q612	D-21
Q613	F-22
Q614	F-21
Q615	C-17
Q616	D-17
Q617	C-18
Q627	D-23
Q630	E-19
Q680	E-19



• IC Block Diagrams
IC501 M5230L



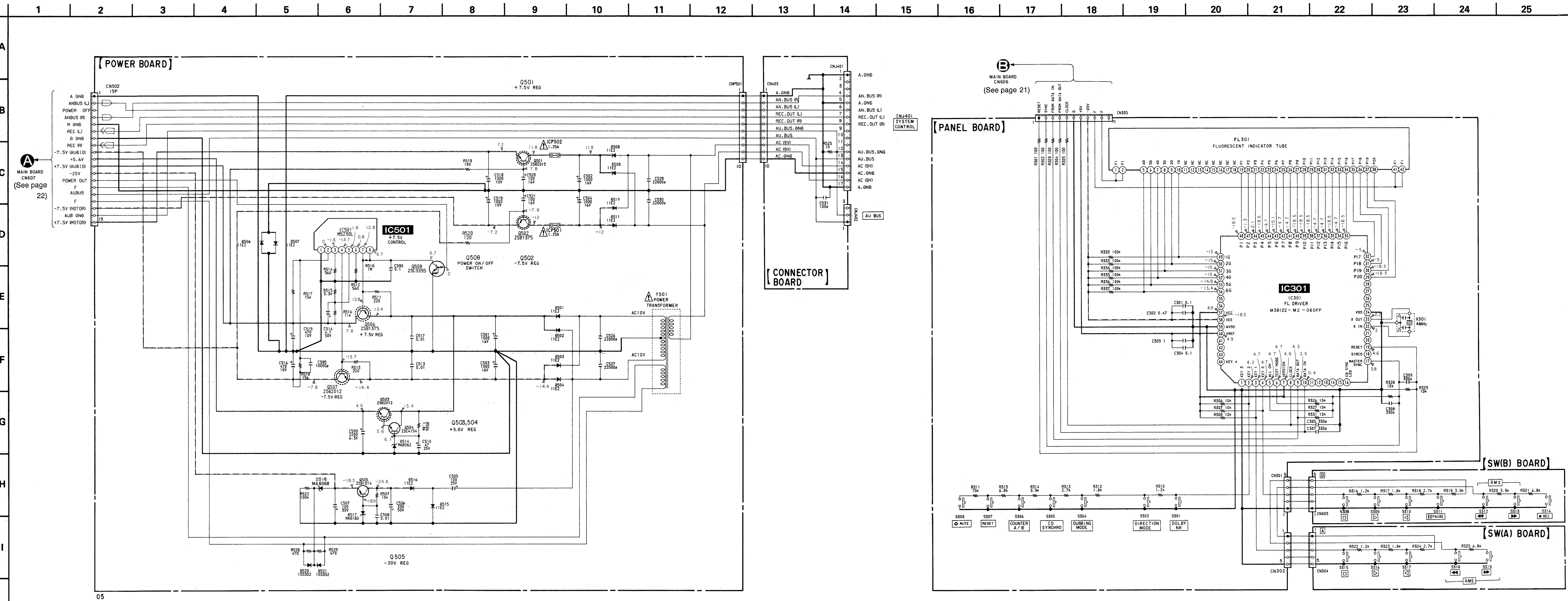
Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4} W$ or less unless otherwise specified.
- Δ : internal component.
- $\square$: panel designation.

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

- --- : B + Line.
- --- : B - Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark: STOP
- Voltages are taken with a VOM (10 M Ω/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- $\square$: PB
- $\square$: REC

5-4. PANEL/POWER SECTION SCHEMATIC DIAGRAM • See page 29 for IC Pin Functions (IC301).

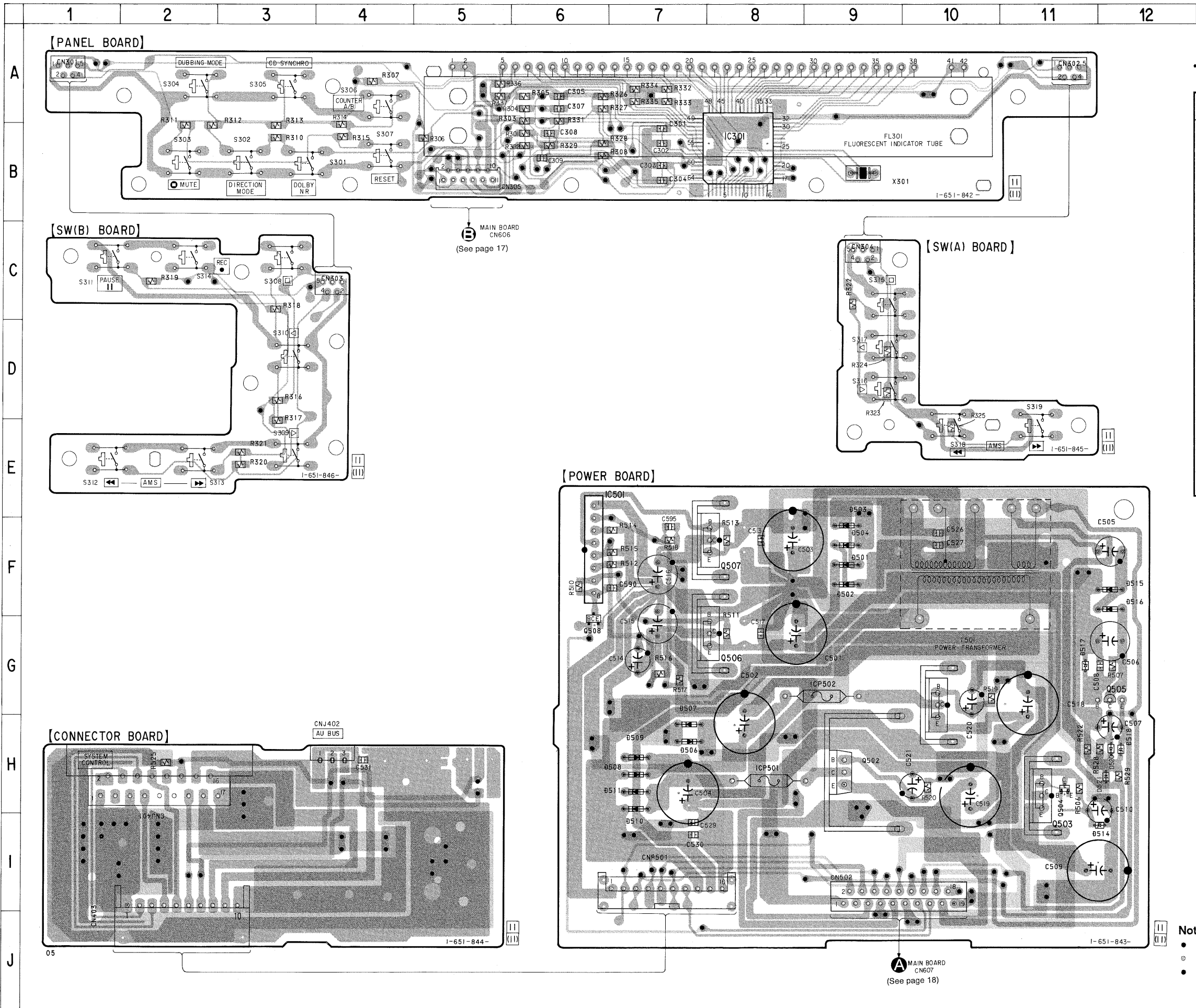


A
B
C
D
E
F
G
H
I
J

A
B
C
D
E
F
G
H
I
J

5-5. PANER/POWER SECTION PRINTED WIRING BOARDS

- See page 10 for Semiconductor Lead Layouts, page 14 for Circuit Board Location.



• Semiconductor Location

Ref. No.	Location
D501	F-9
D502	F-9
D503	E-9
D504	F-9
D506	H-7
D507	G-7
D508	H-7
D509	H-7
D510	I-7
D511	H-7
D514	I-12
D515	F-12
D516	F-12
D517	G-11
D518	H-12
D520	H-12
D521	H-12
IC301	B-8
IC501	E-7
Q501	G-10
Q502	H-9
Q503	I-11
Q504	H-11
Q505	G-11
Q506	G-8
Q507	F-8
Q508	G-6

Note:

- : Through hole.
- : Pattern of the rear side.
- : Pattern from the side which enables seeing.

5-6. IC PIN FUNCTIONS

• IC301 FL DRIVER (M38122-M2-060FP)

Pin No.	Pin Name	I/O	Function
1	KYE3	I	Not used (Open).
2	KEY2	I	} Key input (AD input)
3	KEY1	I	
4	KEY0	I	
5	ALL ON	I	} Not used (Fixed at "H").
6	TEST MODE	I	
7	VERSION	I	VERSION discrimination input
8	CLOCK	I	Clock input from IC601
9	DATA OUT	O	Data output to IC601
10	DATA IN	I	Data input from IC601
11 to 16	—	O	Not used (Open).
17	MASTER SYNC	I	SYNC input from IC601.
18	SIRCS	I	Not used (Open).
19	RESET	I	Reset input from IC601
20, 21	—	O	Not used (Open).
22	X IN	—	Clock (4 MHz)
23	X OUT	—	Clock (4 MHz)
24	V _{ss}	—	GND
25 to 28	—	O	Not used (Open).
29 to 48	P20 to P1	O	FL display drive
49 to 54	1G to 6G	O	FL display drive
55, 56	—	—	Not used (Open).
57	V _{cc}	—	+5V
58	V _{EE}	—	−20V
59	AV _{ss}	—	GND
60	V _{REF}	I	+5V
61 to 64	—		Not used (Open).

• IC601 SYSTEM CONTROL (μ PC78052-020)

Pin No.	Pin Name	I/O	Function
1	METER R	I	} VCA control input. Not used (Connected to GND)
2	VOLUME 0	I	
3	AMS IN	I	AMS signal input
4	AVss	—	GND
5	VCA CONTROL	O	VCA control output. Not used (Open)
6	CAL OSC HIGH	O	Electric adjustment mode output. Not used (Open)
7	AVREF1	—	+5V
8	CAL OSC ON	O	Not used (Open)
9	DISP RESET	O	RESET output to IC301
10	DISP SYNC	O	SYNC output to IC301
11	DISP DATA IN	I	DATA input from IC301
12	DISP DATA OUT	O	DATA output to IC301
13	DISP CLOCK	O	CLOCK output to IC301
14	—	—	Not used (Open)
15	B REEL	I	Deck B reel table detection
16	B REEL OUT	O	Deck B reel table output
17	A REEL	I	Deck A reel table detection
18	A REEL OUT	O	Deck A reel table output
19	A HALF	I	Deck A half switch detection
20 to 24	—	—	Not used (Open)
25	SAF VERSION	I	Not used (Connected to GND)
26	KEY VERSION	I	Not used (Connected to +5V)
27	—	—	Not used
28	EQ HIGH	O	Normal speed: "L", High speed: "H"
29	REC MUTE	O	"L": REC MUTE
30	RELAY	O	Relay ON/OFF. ON: "L", OFF: "H"
31	PB SELECT	O	Deck A/B select. Deck A: "L", Deck B: "H"
32	AMS GAIN SELECT	O	BS: "L", AMS: "H"
33	Vss	—	GND
34	PASS	O	"L": PASS MODE
35	LINE MUTE	O	"L": MUTE
36	ANALOG BUS	O	Analog bus output
37	REC/PB	O	REC: "L", PB: "H"
38	BIAS	O	"L": BIAS ON
39	POWER OUT	O	POWER ON: "L", STANDBY: "H"
40	POWER IN	I	POWER ON detection
41	+7.5V DETECT	I	+7.5V detection
42	LINE MUTE 1599	O	MUTE output to IC101
43 to 48	—	I	Not used (Open)
49	C. MOTOR HIGH	O	"H": Capstan motor high speed
50	BC. MOTOR	O	Capstan motor control for Deck B. "H": ON

Pin No.	Pin Name	I/O	Function
51	AC. MOTOR	O	Capstan motor control for Deck A. "H": ON
52	DOLBY B/C	O	C: "L", B: "H"
53	DOLBY ON/OFF	O	ON: "L", OFF: "H"
54	B REEL MOTOR 2	O	} Deck B Reel motor control output
55	B REEL MOTOR 3	O	
56	B REEL MOTOR 1	O	
57	A REEL MOTOR 1	O	} Deck A Reel motor control output
58	A REEL MOTOR 3	O	
59	A REEL MOTOR 2	O	
60	RESET	—	Reset input. "L": Reset
61	AU BUS IN	I	Audio bus input
62	AU BUS OUT	O	Audio bus output
63	B STOP SW	I	Deck B STOP switch detection
64	A STOP SW	I	Deck A STOP switch detection
65	70U	I	70 μ sec switch detection
66	METAL	I	METAL switch detection
67	TEST	I	"L": Electric adjustment mode
68	VDD	—	+5V
69	X1	O	} Clock (4 MHz)
70	X2	I	
71	GND	—	GND
72	—	O	Not used (open)
73	VERSION	I	VERSION discrimination input
74	AVDD	—	} +5V
75	AVREF	—	
76 to 78	KEY1 to KEY3	I	Not used (open)
79	B HALF	I	Deck B half switch detection
80	METER L	I	VCA control input. Not used (Connected to GND)

SECTION 6

EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) . . . (RED)

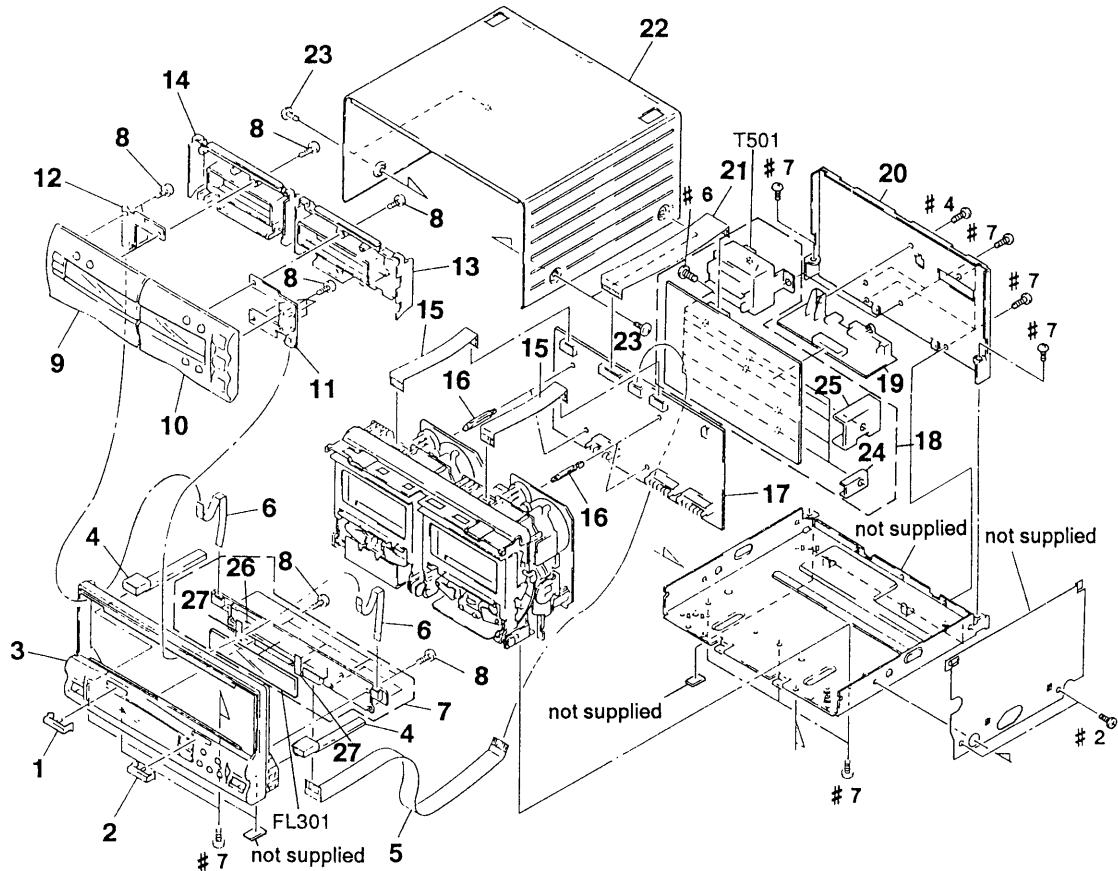
↑
Parts Color

↑
Cabinet's Color

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

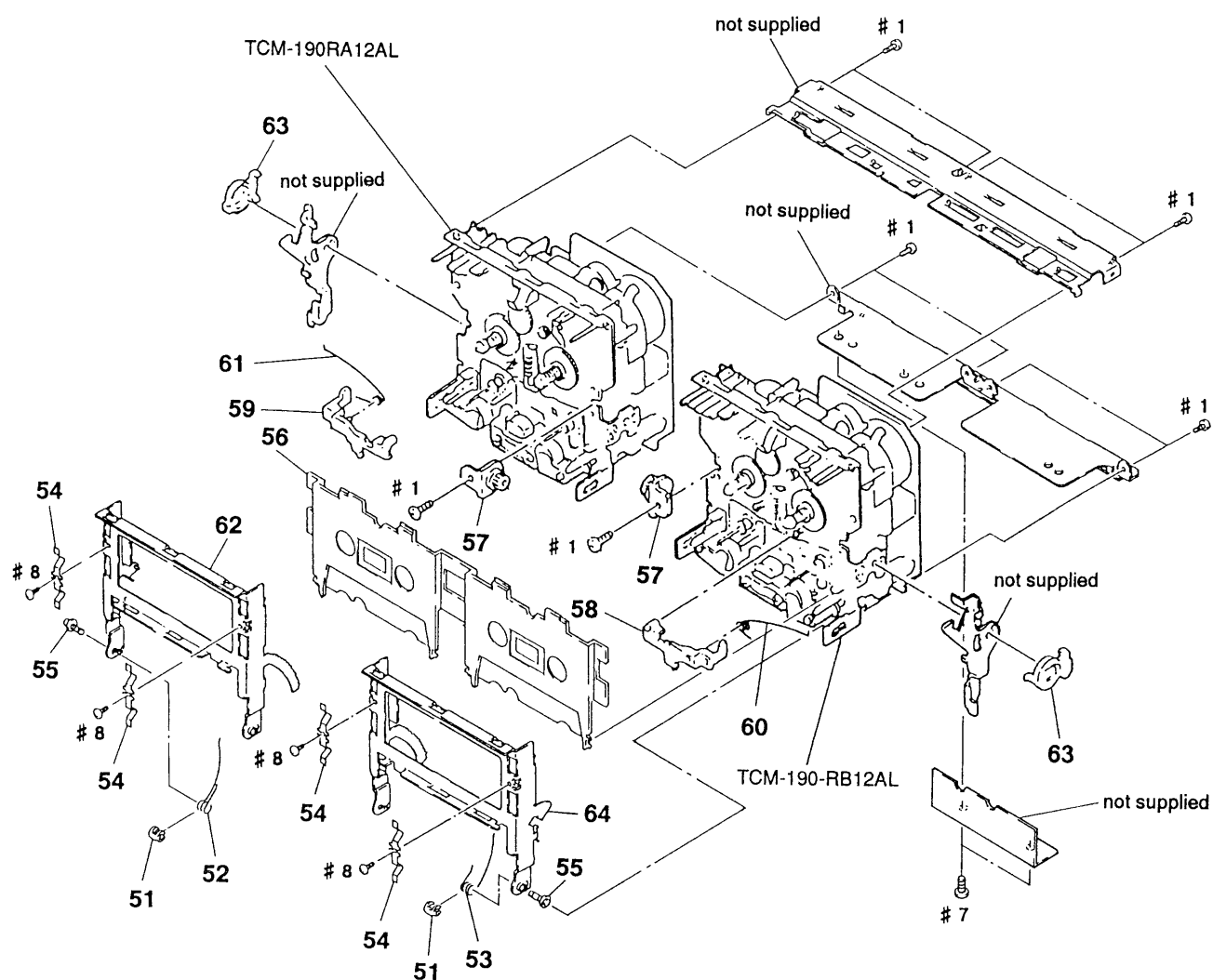
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

(1) CASE AND CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-905-904-01	COVER (AZIMUTH A)		* 16	3-682-419-21	HOLDER, P. C. B	
2	3-905-905-01	COVER (AZIMUTH B)		* 17	A-2007-205-A	TC MAIN BOARD, COMPLETE	
3	X-3367-319-1	PANEL ASSY, FRONT		* 18	A-2007-207-A	POWER BOARD, COMPLETE	
4	3-905-906-01	SLIDER		* 19	1-651-844-11	CONNECTOR BOARD	
5	1-765-405-11	WIRE (FLAT TYPE) (19 CORE)		* 20	3-905-901-51	PANEL, BACK	
6	1-751-819-11	WIRE (FLAT TYPE) (5 CORE)		21	1-751-821-11	WIRE (FLAT TYPE) (11 CORE)	
* 7	A-2007-214-A	PANEL BOARD, COMPLETE		22	4-961-519-31	CASE	
8	4-951-620-01	SCREW (2. 6X8), +BVT		23	3-363-099-21	SCREW (CASE 3 TP2)	
9	X-3367-320-1	LID (A) ASSY, CASSETTE		* 24	3-309-144-21	HEAT SNK	
10	X-3367-866-1	LID (B) ASSY, CASSETTE		* 25	4-880-403-11	HEAT SINK	
* 11	1-651-846-11	SW (B) BOARD		* 26	3-905-909-01	HOLDER (FL)	
* 12	1-651-845-11	SW (A) BOARD		* 27	4-932-810-11	CUSHION (FL)	
* 13	3-907-991-01	COVER (B), CASSETTE LID		FL301	1-517-232-11	INDICATOR TUBE, FLUORESCENT	
* 14	3-907-990-01	COVER (A), CASSETTE LID		△T501	1-423-812-11	TRANSFORMER, POWER	
15	1-765-404-11	WIRE (FLAT TYPE) (7 CORE)					

(2) CASSETTE HOLDER SECTION

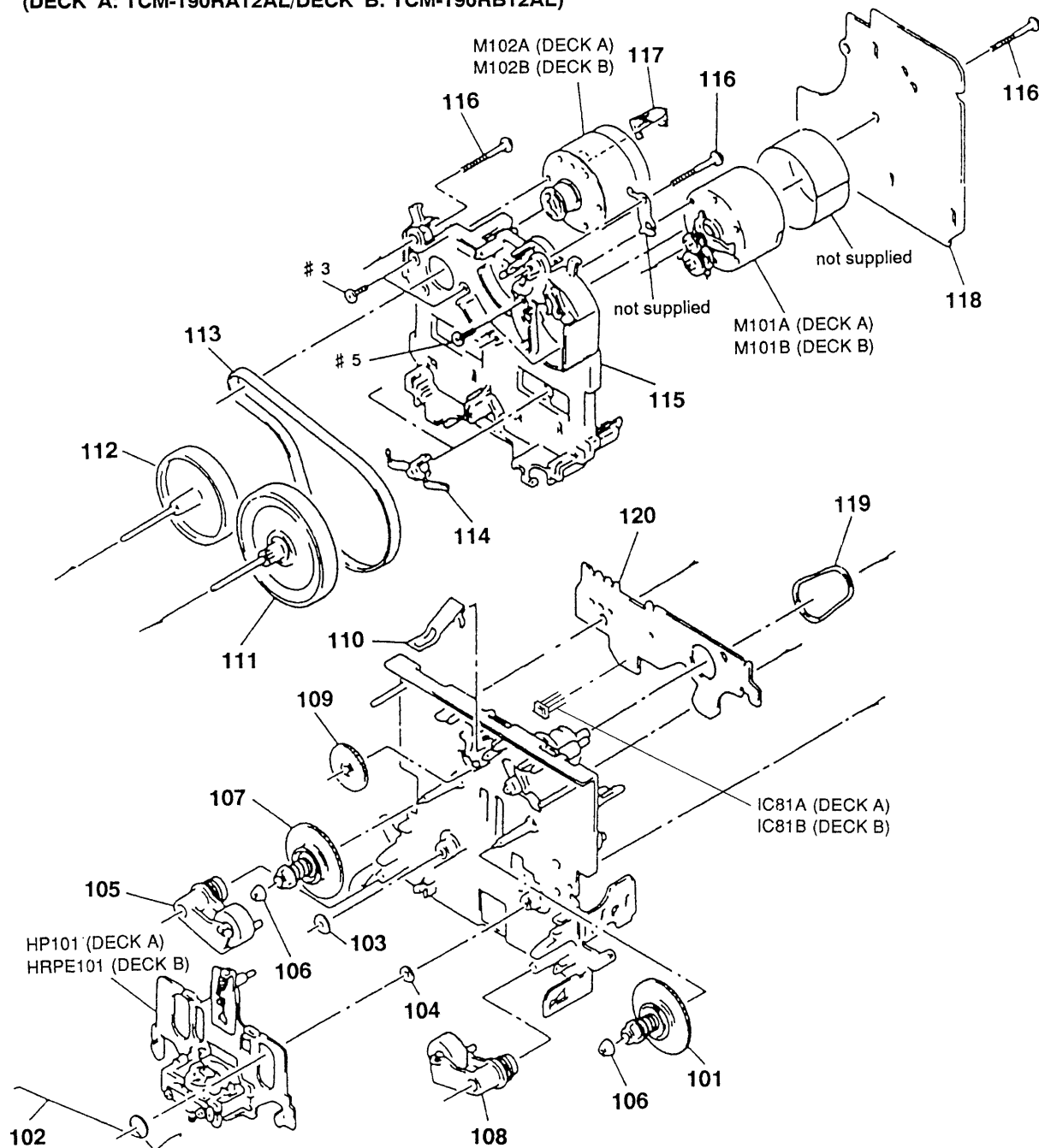


Ref. No.	Part No.	Description	Remark
51	3-367-720-01	RING (W), RETAINING	
52	3-354-959-01	SPRING (LOADING L), TORSION	
53	3-354-960-01	SPRING (LOADING R), TORSION	
54	3-340-137-01	SPRING, CASSETTE RETAINER	
55	3-367-721-01	SHAFT (FULCRUM SHAFT)	
56	3-367-711-01	RETAINER, CASSETTE	
57	3-354-963-01	DAMPER	

Ref. No.	Part No.	Description	Remark
58	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
59	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
60	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
61	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
62	3-367-712-11	HOLDER (L), CASSETTE	
63	3-354-957-01	JOINT (LOCK LEVER)	
64	3-367-713-11	HOLDER (R), CASSETTE	

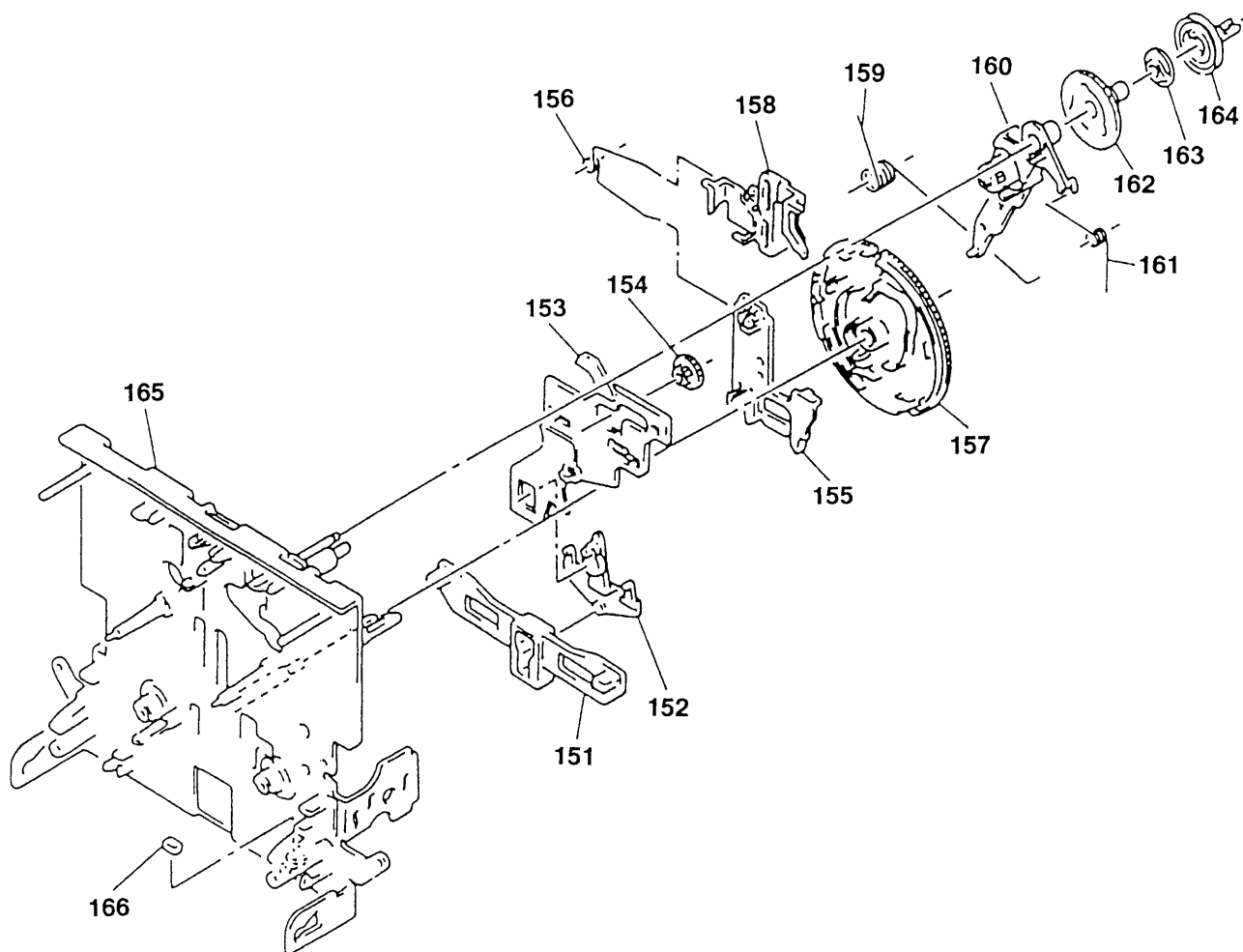
(3) MECHANISM DECK SECTION-1

(DECK A: TCM-190RA12AL/DECK B: TCM-190RB12AL)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3366-970-1	TABLE ASSY, REEL		116	3-359-414-01	SCREW (+PTPWH 2X23)	
102	3-907-362-01	SPRING, TORSION		117	1-638-983-11	MOTOR FLEXIBLE BOARD	
103	3-356-714-01	WASHER		* 118	A-2007-265-A	MD-B BOARD, COMPLETE (RB12AL)	
104	3-356-713-01	WASHER		* 118	A-2007-266-A	MD-A BOARD, COMPLETE (RA12AL)	
105	X-3366-048-1	LEVER (PINCH R) ASSY		119	3-359-466-01	BELT (FR), SQUARE	
106	3-913-841-01	CAP (REEL)		* 120	1-638-020-11	SW-A BOARD (DECK A)	
107	X-3366-971-1	TABLE ASSY (B), REEL		* 120	1-638-020-11	SW-B BOARD (DECK B)	
108	X-3366-047-1	LEVER (PINCH F) ASSY		HP101	A-2003-757-A	BASE ASSY, HEAD (DECK A)	
109	3-359-424-01	GEAR (REV GEAR)		HRPE101	A-2003-930-A	BASE ASSY, HEAD (DECK B)	
110	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF		IC81A	8-749-924-10	PHOTO REFLECTOR NJ5165K-B (DECK A)	
111	X-3367-629-1	FLYWHEEL (FWD) ASSY		IC81B	8-749-924-10	PHOTO REFLECTOR NJ5165K-B (DECK B)	
112	X-3367-630-2	FLYWHEEL (REV) ASSY		M101A	X-3363-501-2	MOTOR ASSY (REEL) (DECK A)	
113	3-359-417-01	BELT (FLAT), CAPSTAN		M101B	X-3363-501-2	MOTOR ASSY (REEL) (DECK B)	
114	3-575-321-00	RETAINER, THRUST, CAPSTAN		M102A	X-3365-377-1	MOTOR ASSY (CAPSTAN) (DECK A)	
115	3-359-436-11	BASE (THRUST RETAINER), FITTING		M102B	X-3365-377-1	MOTOR ASSY (CAPSTAN) (DECK B)	

(4) MECHANISM DECK SECTION-2
(DECK A: TCM-190RA12AL/DECK B: TCM-190RB12AL)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
* 151	3-359-425-01	SLIDER (REVERSE SLIDER)		159	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
152	3-359-426-01	LEVER (REVERSE LEVER)		160	X-3366-569-1	ARM ASSY, FR	
* 153	3-359-415-01	SLIDER (TRIGGER SLIDER)		161	3-359-453-01	SPRING (FR ARM), TORSION	
154	3-359-448-01	GEAR (TRIGGER)		162	3-359-419-11	GEAR (FR GEAR)	
* 155	3-359-427-01	SLIDER (LEVERSE SLIDER)		163	3-359-421-01	CLUTCH (REEL DISK)	
156	3-359-454-01	SPRING, TORSION		164	3-359-418-11	PULLEY (FR PULLEY)	
157	3-359-420-01	GEAR (CAM GEAR)		165	X-3359-415-1	CHASSIS ASSY, MECHANICAL	
158	3-359-429-01	SLIDER (BRAKE PLATE)		166	3-359-469-01	SPACER	

SECTION 7

CONNECTOR

MD-A

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.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA.: μ A.. uPA.: μ PA..
uPB.: μ PB.. uPC.: μ PC.. uPD.: μ PD..
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-651-844-11	CONNECTOR BOARD *****				< IC >	
		< CAPACITOR >		IC31A	8-759-106-02	IC uPC4570G2	
C531	1-163-117-00	CERAMIC CHIP 100PF 5% 50V				< JUMPER RESISTOR >	
		< CONNECTOR >		JW1	1-216-295-00	METAL GLAZE 0 5% 1/10W	
* CN403	1-569-505-11	PIN, CONNECTOR 10P		JW51	1-216-296-00	METAL GLAZE 0 5% 1/8W	
CNJ401	1-569-624-21	SOCKET, CONNECTOR 17P		JW52	1-216-296-00	METAL GLAZE 0 5% 1/8W	
* CNJ402	1-565-561-11	PIN, CONNECTOR 3P		JW52	1-216-296-00	METAL GLAZE 0 5% 1/8W	
		< RESISTOR >		JW53	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R525	1-216-001-00	METAL CHIP 10 5% 1/10W		JW54	1-216-296-00	METAL GLAZE 0 5% 1/8W	
*****						< TRANSISTOR >	
*	A-2007-266-A	MD-A BOARD, COMPLETE (RA12AL) *****		Q71A	8-729-216-22	TRANSISTOR 2SA1162-G	
		< CAPACITOR >				< RESISTOR >	
C11	1-163-131-00	CERAMIC CHIP 390PF 5% 50V		R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
C12	1-136-157-00	FILM 0.022uF 5% 50V		R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
C13	1-124-234-00	ELECT 22uF 20% 16V		R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		R14	1-216-068-00	METAL CHIP 6.2K 5% 1/10W	
C21	1-163-131-00	CERAMIC CHIP 390PF 5% 50V		R21	1-216-099-00	METAL CHIP 120K 5% 1/10W	
C22	1-136-157-00	FILM 0.022uF 5% 50V		R22	1-216-025-00	METAL CHIP 100 5% 1/10W	
C23	1-124-234-00	ELECT 22uF 20% 16V		R23	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
C28	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		R24	1-216-068-00	METAL CHIP 6.2K 5% 1/10W	
C31	1-124-234-00	ELECT 22uF 20% 16V		R31	1-216-033-00	METAL CHIP 220 5% 1/10W	
C32	1-124-234-00	ELECT 22uF 20% 16V		R32	1-216-033-00	METAL CHIP 220 5% 1/10W	
C72	1-124-499-11	ELECT, NONPOLAR 1uF 20% 50V		R71	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
		< CONNECTOR >		R72	1-216-081-00	METAL CHIP 22K 5% 1/10W	
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD		R73	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P		R74	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P				< VARIABLE RESISTOR >	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P		RV11A	1-241-761-11	RES, ADJ, CARBON 1K	
				RV21A	1-241-761-11	RES, ADJ, CARBON 1K	
				RV71A	1-241-630-11	RES, ADJ, CARBON 10K	
				RV72A	1-241-630-11	RES, ADJ, CARBON 10K	

Ref. No.	Part No.	Description	Remark			
*	A-2007-265-A	MD-B BOARD, COMPLETE (RB12AL)				

		< CAPACITOR >				
C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C12	1-136-157-00	FILM	0.022uF	5%	50V	
C13	1-124-234-00	ELECT	22uF	20%	16V	
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C22	1-136-157-00	FILM	0.022uF	5%	50V	
C23	1-124-234-00	ELECT	22uF	20%	16V	
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C31	1-124-234-00	ELECT	22uF	20%	16V	
C32	1-124-234-00	ELECT	22uF	20%	16V	
C33	1-124-234-00	ELECT	22uF	20%	16V	
C51	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C52	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C53	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C54	1-136-601-11	FILM	0.01uF	5%	630V	
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
C57	1-164-346-11	CERAMIC CHIP	1uF		16V	
C71	1-164-346-11	CERAMIC CHIP	1uF		16V	
C80	1-124-234-00	ELECT	22uF	20%	16V	
C81	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C82	1-136-157-00	FILM	0.022uF	5%	50V	
C83	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C84	1-136-478-11	FILM	470PF	5%	630V	
C85	1-136-433-11	FILM	100PF	5%	630V	
C86	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V	
C87	1-136-273-91	FILM	75PF	5%	630V	
C88	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C89	1-124-234-00	ELECT	22uF	20%	16V	
C90	1-107-584-11	CERAMIC	4PF	0.25PF	500V	
C91	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C92	1-136-157-00	FILM	0.022uF	5%	50V	
C93	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C94	1-136-478-11	FILM	470PF	5%	630V	
C95	1-136-433-11	FILM	100PF	5%	630V	
C96	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V	
C97	1-136-273-91	FILM	75PF	5%	630V	
C98	1-163-003-11	CERAMIC CHIP	330PF	10%	50V	
C99	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
		< CONNECTOR >				
* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD				
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P				
* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD				
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P				
* CNP72	1-580-411-11	SOCKET, CONNECTOR 4P				

Ref. No.	Part No.	Description	Remark			
< DIODE >						
D31	8-719-404-46	DIODE	MA110			
< IC >						
IC31B	8-759-106-02	IC	uPC4570G2			
IC81B	8-759-106-56	IC	uPC1297CA			
< COIL >						
L81	1-410-780-11	INDUCTOR	27mH			
L91	1-410-780-11	INDUCTOR	27mH			
< TRANSISTOR >						
Q51	8-729-808-01	TRANSISTOR	2SD1622-S			
Q52	8-729-808-01	TRANSISTOR	2SD1622-S			
Q53	8-729-808-01	TRANSISTOR	2SD1622-S			
Q71B	8-729-216-22	TRANSISTOR	2SA1162-G			
< RESISTOR >						
R11	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R12	1-216-025-00	METAL CHIP	100	5%	1/10W	
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W	
R14	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R22	1-216-025-00	METAL CHIP	100	5%	1/10W	
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W	
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R31	1-216-033-00	METAL CHIP	220	5%	1/10W	
R32	1-216-033-00	METAL CHIP	220	5%	1/10W	
R33	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R51	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R52	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W	
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W	
R57	1-216-298-00	METAL CHIP	2.2	5%	1/10W	
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R73	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R81	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R82	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R83	1-216-001-00	METAL CHIP	10	5%	1/10W	
R84	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R85	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R91	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R92	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R93	1-216-001-00	METAL CHIP	10	5%	1/10W	
R94	1-216-101-00	METAL CHIP	150K	5%	1/10W	

MD-B

PANEL

POWER

Ref. No.	Part No.	Description	Remark		
R95	1-216-075-00	METAL CHIP	12K	5%	1/10W
< VARIABLE RESISTOR >					
RV11B	1-241-761-11	RES, ADJ, CARBON 1K			
RV21B	1-241-761-11	RES, ADJ, CARBON 1K			
RV71B	1-241-630-11	RES, ADJ, CARBON 10K			
RV72B	1-241-630-11	RES, ADJ, CARBON 10K			
RV81	1-241-786-11	RES, ADJ, CARBON 22K			
RV91	1-241-786-11	RES, ADJ, CARBON 22K			
< RELAY >					
RY31	1-515-913-11	RELAY			
< TRANSFORMER >					
T51	1-406-417-11	COIL, BIAS OSCILLATION			
T81	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR			
< TEST PIN >					
* TP81	1-568-449-11	HOUSING, CONNECTOR(PC BOARD) 3P			

*	A-2007-214-A	PANEL BOARD, COMPLETE			

*	3-905-909-01	HOLDER (FL)			
*	4-932-810-11	CUSHION (FL)			
< CAPACITOR >					
C301	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C302	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C303	1-164-346-11	CERAMIC CHIP	1uF		16V
C304	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C305	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C307	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C308	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C309	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
< CONNECTOR >					
CN301	1-580-472-11	SOCKET, CONNECTOR 5P			
CN302	1-580-472-11	SOCKET, CONNECTOR 5P			
* CN305	1-580-415-11	SOCKET, CONNECTOR 11P			
< FILTER >					
FL301	1-517-232-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC301	8-759-198-92	IC M38122-M2-060FP			

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R301	1-216-025-00	METAL CHIP	100	5%	1/10W
R302	1-216-025-00	METAL CHIP	100	5%	1/10W
R303	1-216-025-00	METAL CHIP	100	5%	1/10W
R304	1-216-025-00	METAL CHIP	100	5%	1/10W
R305	1-216-025-00	METAL CHIP	100	5%	1/10W
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R311	1-216-077-00	METAL CHIP	15K	5%	1/10W
R312	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R313	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R314	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R315	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W
R327	1-216-073-00	METAL CHIP	10K	5%	1/10W
R328	1-216-073-00	METAL CHIP	10K	5%	1/10W
R329	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-073-00	METAL CHIP	10K	5%	1/10W
R332	1-216-097-00	METAL CHIP	100K	5%	1/10W
R333	1-216-097-00	METAL CHIP	100K	5%	1/10W
R334	1-216-097-00	METAL CHIP	100K	5%	1/10W
R335	1-216-097-00	METAL CHIP	100K	5%	1/10W
R336	1-216-097-00	METAL CHIP	100K	5%	1/10W
R337	1-216-097-00	METAL CHIP	100K	5%	1/10W
< SWITCH >					
S301	1-554-303-21	SWITCH, TACTILE (DOLBY NR)			
S302	1-554-303-21	SWITCH, TACTILE (DIRECTION MODE)			
S303	1-554-303-21	SWITCH, TACTILE (● MUTE)			
S304	1-554-303-21	SWITCH, TACTILE (DUBBING MODE)			
S305	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)			
S306	1-554-303-21	SWITCH, TACTILE (COUNTER NB)			
S307	1-554-303-21	SWITCH, TACTILE (RESET)			
< VIBRATOR >					
X301	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			

*	A-2007-207-A	POWER BOARD, COMPLETE			

*	3-309-144-21	HEAT SINK			
*	4-880-403-11	HEAT SINK			
< CAPACITOR >					
C501	1-124-360-00	ELECT	1000uF	20%	16V
C502	1-124-360-00	ELECT	1000uF	20%	16V

Ref. No.	Part No.	Description	Remark
C503	1-124-360-00	ELECT	1000uF 20% 16V
C504	1-124-360-00	ELECT	1000uF 20% 16V
C505	1-124-478-11	ELECT	100uF 20% 25V
C506	1-124-920-11	ELECT	330uF 20% 50V
C507	1-124-122-11	ELECT	100uF 20% 50V
C508	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C509	1-126-927-11	ELECT	2200uF 20% 6.3V
C510	1-124-477-11	ELECT	47uF 20% 25V
C513	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C514	1-124-927-11	ELECT	4.7uF 20% 100V
C515	1-124-472-11	ELECT	470uF 20% 10V
C516	1-124-472-11	ELECT	470uF 20% 10V
C517	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C518	1-126-926-11	ELECT	1000uF 20% 10V
C519	1-126-926-11	ELECT	1000uF 20% 10V
C520	1-126-101-11	ELECT	100uF 20% 16V
C521	1-126-101-11	ELECT	100uF 20% 16V
C526	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C527	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C529	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C530	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C590	1-163-038-00	CERAMIC CHIP	0.1uF 25V
C595	1-164-232-11	CERAMIC CHIP	0.01uF 50V
< CONNECTOR >			
* CN502	1-568-862-11	SOCKET, CONNECTOR 19P	
* CNP501	1-569-496-11	SOCKET, CONNECTOR 10P	
< DIODE >			
D501	8-719-200-02	DIODE 10E2	
D502	8-719-200-02	DIODE 10E2	
D503	8-719-200-02	DIODE 10E2	
D504	8-719-200-02	DIODE 10E2	
D506	8-719-200-02	DIODE 10E2	
D507	8-719-200-02	DIODE 10E2	
D508	8-719-200-02	DIODE 10E2	
D509	8-719-200-02	DIODE 10E2	
D510	8-719-200-02	DIODE 10E2	
D511	8-719-200-02	DIODE 10E2	
D514	8-719-422-58	DIODE MA8062	
D515	8-719-200-02	DIODE 10E2	
D516	8-719-200-02	DIODE 10E2	
D517	8-719-017-94	DIODE MA8180-TX	
D518	8-719-977-12	DIODE DTZ6.8B	
D520	8-719-016-74	DIODE 1SS352	
D521	8-719-016-74	DIODE 1SS352	

Ref. No.	Part No.	Description	Remark
< IC >			
IC501	8-759-602-66	IC M5230L-A	
< IC LINK >			
△ICP501	1-532-840-21	LINK, IC	
△ICP502	1-532-840-21	LINK, IC	
< TRANSISTOR >			
Q501	8-729-209-15	TRANSISTOR 2SD2012	
Q502	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q503	8-729-209-15	TRANSISTOR 2SD2012	
Q504	8-729-602-21	TRANSISTOR 2SC4154	
Q505	8-729-118-01	TRANSISTOR 2SB1116	
Q506	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q507	8-729-209-15	TRANSISTOR 2SD2012	
Q508	8-729-805-45	TRANSISTOR 2SC3395	
< RESISTOR >			
R506	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R507	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R510	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R511	1-216-033-00	METAL CHIP 220 5% 1/10W	
R512	1-216-043-00	METAL CHIP 560 5% 1/10W	
R513	1-216-033-00	METAL CHIP 220 5% 1/10W	
R514	1-216-043-00	METAL CHIP 560 5% 1/10W	
R515	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R516	1-216-074-00	METAL CHIP 11K 5% 1/10W	
R517	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R518	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R519	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-025-00	METAL CHIP 100 5% 1/10W	
R522	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R528	1-216-041-00	METAL CHIP 470 5% 1/10W	
R529	1-216-041-00	METAL CHIP 470 5% 1/10W	
< TRANSFORMER >			
△T501	1-423-812-11	TRANSFORMER, POWER	

*	1-651-845-11	SW (A) BOARD	

< CONNECTOR >			
CN304	1-580-412-11	SOCKET, CONNECTOR 5P	

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

SW (A)	SW (B)	SW-A	SW-B	TC MAIN
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< RESISTOR >				< RESISTOR >			
R322	1-216-051-00	METAL CHIP	1.2K 5% 1/10W	R84	1-249-417-11	CARBON 1K 5% 1/4W F	
R323	1-216-055-00	METAL CHIP	1.8K 5% 1/10W	R85	1-249-408-11	CARBON 180 5% 1/4W F	
R324	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	< SWITCH >			
R325	1-216-069-00	METAL CHIP	6.8K 5% 1/10W	S81A	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
< SWITCH >				S82A	1-571-281-21	SWITCH, LEAF (CrO2 DET)	
S315	1-554-303-21	SWITCH, TACTILE (□)		S86A	1-571-281-21	SWITCH, LEAF (HALF DET)	
S316	1-554-303-21	SWITCH, TACTILE (▷)		*****			
S317	1-554-303-21	SWITCH, TACTILE (<)		*	1-638-020-11	SW-B BOARD (DECK B)	
S318	1-554-303-21	SWITCH, TACTILE (◀)		*****			
S319	1-554-303-21	SWITCH, TACTILE (▶)		< CONNECTOR >			
*****				* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P	
*	1-651-846-11	SW (B) BOARD	*****	< IC >			
< CONNECTOR >				IC81B	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
CN303	1-580-412-11	SOCKET, CONNECTOR 5P		< RESISTOR >			
< RESISTOR >				R81	1-249-414-11	CARBON 560 5% 1/4W F	
R316	1-216-051-00	METAL CHIP	1.2K 5% 1/10W	R82	1-247-818-11	CARBON 300 5% 1/4W	
R317	1-216-055-00	METAL CHIP	1.8K 5% 1/10W	R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R318	1-216-059-00	METAL CHIP	2.7K 5% 1/10W	R84	1-249-417-11	CARBON 1K 5% 1/4W F	
R319	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	R85	1-249-408-11	CARBON 180 5% 1/4W F	
R320	1-216-063-00	METAL CHIP	3.9K 5% 1/10W	< SWITCH >			
R321	1-216-069-00	METAL CHIP	6.8K 5% 1/10W	S81B	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
< SWITCH >				S82B	1-571-281-21	SWITCH, LEAF (CrO2 DET)	
S308	1-554-303-21	SWITCH, TACTILE (□)		S83	1-571-281-21	SWITCH, LEAF (METAL DET)	
S309	1-554-303-21	SWITCH, TACTILE (▷)		S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF (SIDE A))	
S310	1-554-303-21	SWITCH, TACTILE (<)		S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF (SIDE B))	
S311	1-554-303-21	SWITCH, TACTILE (PAUSE)		S86B	1-571-281-21	SWITCH, LEAF (HALF DET)	
S312	1-554-303-21	SWITCH, TACTILE (◀)		*****			
S313	1-554-303-21	SWITCH, TACTILE (▶)		*	A-2007-205-A	TC MAIN BOARD, COMPLETE	
S314	1-554-303-21	SWITCH, TACTILE (● REC)		*****			
*****				7-682-547-09	SCREW +BVTT 3X6 (S)		
*	1-638-020-11	SW-A BOARD (DECK A)	*****	< CAPACITOR >			
< CONNECTOR >				C102	1-164-182-11	CERAMIC CHIP 0.0033uF 10% 50V	
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P		C103	1-164-182-11	CERAMIC CHIP 0.0033uF 10% 50V	
< IC >				C104	1-106-351-00	MYLAR 2200PF 5% 200V	
IC81A	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)		C105	1-106-351-00	MYLAR 2200PF 5% 200V	
				C106	1-124-257-00	ELECT 2.2uF 20% 50V	
				C107	1-136-174-00	FILM 0.56uF 5% 50V	
				C108	1-136-171-00	FILM 0.33uF 5% 50V	
				C109	1-124-927-11	ELECT 4.7uF 20% 100V	

TC MAIN

Ref. No.	Part No.	Description	Remark
C110	1-124-925-11	ELECT	2. 2uF 20% 100V
C114	1-124-261-00	ELECT	10uF 20% 50V
C115	1-124-584-00	ELECT	100uF 20% 10V
C116	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C117	1-124-925-11	ELECT	2. 2uF 20% 100V
C119	1-124-902-00	ELECT	0. 47uF 20% 50V
C120	1-124-927-11	ELECT	4. 7uF 20% 100V
C130	1-124-925-11	ELECT	2. 2uF 20% 100V
C131	1-164-346-11	CERAMIC CHIP	1uF 16V
C132	1-164-346-11	CERAMIC CHIP	1uF 16V
C202	1-164-182-11	CERAMIC CHIP	0. 0033uF 10% 50V
C203	1-164-182-11	CERAMIC CHIP	0. 0033uF 10% 50V
C204	1-106-351-00	MYLAR	2200PF 5% 200V
C205	1-106-351-00	MYLAR	2200PF 5% 200V
C206	1-124-257-00	ELECT	2. 2uF 20% 50V
C207	1-136-174-00	FILM	0. 56uF 5% 50V
C208	1-136-171-00	FILM	0. 33uF 5% 50V
C209	1-124-927-11	ELECT	4. 7uF 20% 100V
C210	1-124-925-11	ELECT	2. 2uF 20% 100V
C214	1-124-261-00	ELECT	10uF 20% 50V
C215	1-124-584-00	ELECT	100uF 20% 10V
C216	1-163-117-00	CERAMIC CHIP	100PF 5% 50V
C217	1-124-925-11	ELECT	2. 2uF 20% 100V
C219	1-124-902-00	ELECT	0. 47uF 20% 50V
C220	1-124-927-11	ELECT	4. 7uF 20% 100V
C230	1-124-925-11	ELECT	2. 2uF 20% 100V
C231	1-164-346-11	CERAMIC CHIP	1uF 16V
C232	1-164-346-11	CERAMIC CHIP	1uF 16V
C601	1-124-443-00	ELECT	100uF 20% 10V
C602	1-163-037-11	CERAMIC CHIP	0. 022uF 10% 25V
C604	1-163-038-00	CERAMIC CHIP	0. 1uF 25V
C605	1-124-902-00	ELECT	0. 47uF 20% 50V
C606	1-126-103-11	ELECT	470uF 20% 16V
C607	1-126-103-11	ELECT	470uF 20% 16V
C608	1-126-103-11	ELECT	470uF 20% 16V
C609	1-124-902-00	ELECT	0. 47uF 20% 50V
C610	1-124-472-11	ELECT	470uF 20% 10V
C611	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C612	1-124-472-11	ELECT	470uF 20% 10V
C613	1-163-133-00	CERAMIC CHIP	470PF 5% 50V
C614	1-163-038-00	CERAMIC CHIP	0. 1uF 25V
C615	1-163-038-00	CERAMIC CHIP	0. 1uF 25V
C616	1-124-907-11	ELECT	10uF 20% 50V
C617	1-163-038-00	CERAMIC CHIP	0. 1uF 25V
C618	1-163-003-11	CERAMIC CHIP	330PF 10% 50V
C620	1-124-907-11	ELECT	10uF 20% 50V
C621	1-124-907-11	ELECT	10uF 20% 50V
C630	1-124-927-11	ELECT	4. 7uF 20% 100V

Ref. No.	Part No.	Description	Remark
C631	1-126-160-11	ELECT	1uF 20% 50V
C636	1-124-916-11	ELECT	22uF 20% 63V
C641	1-124-927-11	ELECT	4. 7uF 20% 100V
C642	1-124-902-00	ELECT	0. 47uF 20% 50V
C645	1-124-907-11	ELECT	10uF 20% 50V
C646	1-124-925-11	ELECT	2. 2uF 20% 100V
C647	1-124-443-00	ELECT	100uF 20% 10V
C648	1-124-443-00	ELECT	100uF 20% 10V
C649	1-124-907-11	ELECT	10uF 20% 50V
C650	1-124-916-11	ELECT	22uF 20% 63V
C6035	1-163-141-00	CERAMIC CHIP	0. 001uF 5% 50V
< CONNECTOR >			
CN601	1-750-585-11	CONNECTOR, FFC/FPC 7P	
CN602	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN603	1-750-585-11	CONNECTOR, FFC/FPC 7P	
CN604	1-580-783-11	CONNECTOR, BOARD TO BOARD	
CN605	1-580-783-11	CONNECTOR, BOARD TO BOARD	
* CN606	1-580-415-11	SOCKET, CONNECTOR 11P	
* CN607	1-568-862-11	SOCKET, CONNECTOR 19P	
< DIODE >			
D602	8-719-422-91	DIODE MA8091	
D603	8-719-016-74	DIODE 1SS352	
D604	8-719-016-74	DIODE 1SS352	
D605	8-719-200-02	DIODE 10E2	
D606	8-719-200-02	DIODE 10E2	
D607	8-719-016-74	DIODE 1SS352	
D608	8-719-016-74	DIODE 1SS352	
D620	8-719-016-84	DIODE 02DZ2. 0-TPH3	
< IC >			
IC101	8-752-058-57	IC CXA1599Q	
IC102	8-759-998-71	IC BA3308F	
IC103	8-752-037-90	IC CXA1331M	
IC104	8-759-516-47	IC CD4066BCM	
IC601	8-759-259-60	IC uPD78052-020	
IC602	8-759-165-82	IC PST600E-T	
IC603	8-759-266-35	IC TA8242AK	
IC6004	8-759-009-06	IC MC14052BF	
< COIL >			
L601	1-408-421-00	INDUCTOR 100uH	
L6002	1-410-470-11	INDUCTOR 10uH	
< TRANSISTOR >			
Q101	8-729-602-21	TRANSISTOR 2SC4154-F	
Q201	8-729-602-21	TRANSISTOR 2SC4154-F	

TC MAIN

Ref. No.	Part No.	Description	Remark
Q601	8-729-901-06	TRANSISTOR DTA144EK	
Q602	8-729-901-06	TRANSISTOR DTA144EK	
Q603	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q604	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q605	8-729-805-41	TRANSISTOR 2SC3398	
Q606	8-729-602-36	TRANSISTOR 2SA1602-F	
Q607	8-729-805-45	TRANSISTOR 2SC3395	
Q608	8-729-805-45	TRANSISTOR 2SC3395	
Q609	8-729-805-45	TRANSISTOR 2SC3395	
Q610	8-729-805-65	TRANSISTOR 2SA1344	
Q611	8-729-602-21	TRANSISTOR 2SC4154-F	
Q612	8-729-602-36	TRANSISTOR 2SA1602-F	
Q613	8-729-901-06	TRANSISTOR DTA144EK	
Q614	8-729-805-45	TRANSISTOR 2SC3395	
Q615	8-729-901-06	TRANSISTOR DTA144EK	
Q616	8-729-901-06	TRANSISTOR DTA144EK	
Q617	8-729-901-06	TRANSISTOR DTA144EK	
Q627	8-729-805-45	TRANSISTOR 2SC3395	
Q630	8-729-805-65	TRANSISTOR 2SA1344	
Q680	8-729-805-41	TRANSISTOR 2SC3398	
< RESISTOR >			
R106	1-216-050-00	METAL GLAZE 1.1K 5%	1/10W
R107	1-216-082-00	METAL GLAZE 24K 5%	1/10W
R108	1-216-043-00	METAL CHIP 560 5%	1/10W
R109	1-216-073-00	METAL CHIP 10K 5%	1/10W
R110	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R111	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R112	1-216-054-00	METAL GLAZE 1.6K 5%	1/10W
R113	1-216-079-00	METAL CHIP 18K 5%	1/10W
R114	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R115	1-216-105-00	METAL CHIP 220K 5%	1/10W
R116	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R117	1-216-049-00	METAL CHIP 1K 5%	1/10W
R118	1-216-093-00	METAL CHIP 68K 5%	1/10W
R119	1-216-049-00	METAL CHIP 1K 5%	1/10W
R120	1-216-025-00	METAL CHIP 100 5%	1/10W
R121	1-216-025-00	METAL CHIP 100 5%	1/10W
R128	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R206	1-216-050-00	METAL GLAZE 1.1K 5%	1/10W
R207	1-216-082-00	METAL GLAZE 24K 5%	1/10W
R208	1-216-043-00	METAL CHIP 560 5%	1/10W
R209	1-216-073-00	METAL CHIP 10K 5%	1/10W
R210	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R211	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R212	1-216-054-00	METAL GLAZE 1.6K 5%	1/10W
R213	1-216-079-00	METAL CHIP 18K 5%	1/10W
R214	1-216-057-00	METAL CHIP 2.2K 5%	1/10W

Ref. No.	Part No.	Description	Remark
R215	1-216-105-00	METAL CHIP 220K 5%	1/10W
R216	1-216-689-11	METAL CHIP 39K 0.5%	1/10W
R217	1-216-049-00	METAL CHIP 1K 5%	1/10W
R218	1-216-093-00	METAL CHIP 68K 5%	1/10W
R219	1-216-049-00	METAL CHIP 1K 5%	1/10W
R220	1-216-025-00	METAL CHIP 100 5%	1/10W
R221	1-216-025-00	METAL CHIP 100 5%	1/10W
R228	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R504	1-216-025-00	METAL CHIP 100 5%	1/10W
R505	1-216-073-00	METAL CHIP 10K 5%	1/10W
R601	1-216-025-00	METAL CHIP 100 5%	1/10W
R602	1-216-025-00	METAL CHIP 100 5%	1/10W
R603	1-216-025-00	METAL CHIP 100 5%	1/10W
R604	1-216-025-00	METAL CHIP 100 5%	1/10W
R605	1-216-081-00	METAL CHIP 22K 5%	1/10W
R606	1-216-085-00	METAL CHIP 33K 5%	1/10W
R607	1-216-025-00	METAL CHIP 100 5%	1/10W
R612	1-216-105-00	METAL CHIP 220K 5%	1/10W
R614	1-216-105-00	METAL CHIP 220K 5%	1/10W
R615	1-216-025-00	METAL CHIP 100 5%	1/10W
R616	1-216-081-00	METAL CHIP 22K 5%	1/10W
R619	1-216-081-00	METAL CHIP 22K 5%	1/10W
R620	1-216-097-00	METAL CHIP 100K 5%	1/10W
R621	1-216-049-00	METAL CHIP 1K 5%	1/10W
R622	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R623	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R624	1-216-083-00	METAL CHIP 27K 5%	1/10W
R625	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R626	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R627	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R628	1-216-083-00	METAL CHIP 27K 5%	1/10W
R629	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R630	1-216-073-00	METAL CHIP 10K 5%	1/10W
R631	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R632	1-216-073-00	METAL CHIP 10K 5%	1/10W
R633	1-216-025-00	METAL CHIP 100 5%	1/10W
R634	1-216-025-00	METAL CHIP 100 5%	1/10W
R635	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R636	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R637	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R638	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R639	1-216-073-00	METAL CHIP 10K 5%	1/10W
R640	1-216-295-91	METAL GLAZE 0 5%	1/10W
R641	1-216-295-91	METAL GLAZE 0 5%	1/10W
R642	1-216-295-91	METAL GLAZE 0 5%	1/10W
R643	1-216-025-00	METAL CHIP 100 5%	1/10W
R644	1-216-025-00	METAL CHIP 100 5%	1/10W
R645	1-216-077-00	METAL CHIP 15K 5%	1/10W
R646	1-216-055-00	METAL CHIP 1.8K 5%	1/10W

Ref.No.	Part No.	Description	Remark		
R647	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W
R648	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R649	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R650	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R651	1-216-025-00	METAL CHIP	100	5%	1/10W
R652	1-216-025-00	METAL CHIP	100	5%	1/10W
R653	1-216-025-00	METAL CHIP	100	5%	1/10W
R654	1-216-025-00	METAL CHIP	100	5%	1/10W
R655	1-216-025-00	METAL CHIP	100	5%	1/10W
R656	1-216-001-00	METAL CHIP	10	5%	1/10W
R660	1-216-049-00	METAL CHIP	1K	5%	1/10W
R661	1-216-083-00	METAL CHIP	27K	5%	1/10W
R670	1-216-085-00	METAL CHIP	33K	5%	1/10W
R671	1-216-081-00	METAL CHIP	22K	5%	1/10W
R672	1-216-085-00	METAL CHIP	33K	5%	1/10W
R673	1-216-073-00	METAL CHIP	10K	5%	1/10W
R674	1-216-078-00	METAL GLAZE	16K	5%	1/10W
R675	1-216-073-00	METAL CHIP	10K	5%	1/10W
R676	1-216-083-00	METAL CHIP	27K	5%	1/10W
R677	1-216-025-00	METAL CHIP	100	5%	1/10W
R678	1-216-025-00	METAL CHIP	100	5%	1/10W
R679	1-216-025-00	METAL CHIP	100	5%	1/10W
R681	1-216-073-00	METAL CHIP	10K	5%	1/10W
R682	1-216-073-00	METAL CHIP	10K	5%	1/10W
R683	1-216-073-00	METAL CHIP	10K	5%	1/10W
R684	1-216-041-00	METAL CHIP	470	5%	1/10W
R685	1-216-073-00	METAL CHIP	10K	5%	1/10W
R686	1-216-073-00	METAL CHIP	10K	5%	1/10W
R687	1-216-049-00	METAL CHIP	1K	5%	1/10W
R689	1-216-090-00	METAL CHIP	51K	5%	1/10W
R690	1-216-073-00	METAL CHIP	10K	5%	1/10W
R691	1-216-069-00	METAL CHIP	6. 8K	5%	1/10W
R692	1-216-081-00	METAL CHIP	22K	5%	1/10W
R693	1-216-083-00	METAL CHIP	27K	5%	1/10W
R694	1-216-083-00	METAL CHIP	27K	5%	1/10W
R695	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W
R696	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W
R697	1-216-073-00	METAL CHIP	10K	5%	1/10W
R700	1-216-121-00	METAL CHIP	1M	5%	1/10W
R701	1-216-073-00	METAL CHIP	10K	5%	1/10W
R702	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R6070	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W
R6071	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W

< VARIABLE RESISTOR >

RV101	1-241-785-11	RES, ADJ, CARBON 10K
RV201	1-241-785-11	RES, ADJ, CARBON 10K

Ref.No.	Part No.	Description	Remark
		< TEST PIN >	
* TP601	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P	
		< VIBRATOR >	
X601	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

		MISCELLANEOUS	

5	1-765-405-11	WIRE (FLAT TYPE) (19 CORE)	
6	1-751-819-11	WIRE (FLAT TYPE) (5 CORE)	
15	1-765-404-11	WIRE (FLAT TYPE) (7 CORE)	
21	1-751-821-11	WIRE (FLAT TYPE) (11 CORE)	
117	1-638-983-11	MOTOR FLEXIBLE BOARD	
HP101	A-2003-757-A	BASE ASSY, HEAD (DECK A)	
HRPE101	A-2003-930-A	BASE ASSY, HEAD (DECK B)	
M101A	X-3363-501-2	MOTOR ASSY (REEL) (DECK A)	
M101B	X-3363-501-2	MOTOR ASSY (REEL) (DECK B)	
M102A	X-3365-377-1	MOTOR ASSY (CAPSTAN) (DECK A)	
M102B	X-3365-377-1	MOTOR ASSY (CAPSTAN) (DECK B)	

HARDWARE LIST			

#1	7-621-770-67	SCREW +PTT 2. 6X6 (S)	
#2	7-621-773-93	SCREW (PANEL 2. 6 TP2)	
#3	7-621-775-00	SCREW +B 2. 6X3	
#4	7-621-849-00	SCREW, TAPPING	
#5	7-627-556-08	SCREW +P 2. 6X2. 8	
#6	7-682-547-09	SCREW +BVTT 3X6 (S)	
#7	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#8	7-685-780-01	SCREW +PTT 2X3 (S)	

