

HITACHI

SERVICE MANUAL



SM0101

**AXF300E
AXF300EBS
AXF300UC
AXF300W
AXF300WUN
HMDR50**

CD MECHANISM CDV300DW
MD MECHANISM MDM-99X

**CAUTION
DANGER**

Invisible laser radiation when open and interlocks failed or defeated. AVOID DIRECT EXPOSURE TO BEAM.

GEFAHR

Unsichtbare Laser-Strahlung wenn Interlock (Blockierung) funktionsuntüchtig oder abgeschaltet.
UNMITTELBAREN KONTAKT MIT DEM STRAHL UNBEDIGT VERMEIDEN.

DANGER

Faire très attention aux radiations émises par le faisceau laser invisible au défaillance du verrouillage.
NE JAMAIS S'EXPOSER DIRECTEMENT AU FAISCEAU.

VARNING

När apparaten öppnats och skyddsanordningen felar eller satts ur funktion förekommer osynlig laserstrålning.
UNDVIK DIREKT BESTRÅLNING.

ADVARSEL

Når apparatet åbnes og beskyttelsesanordningen ikke virker eller sættes un af funktion, forekommer der usynlig laserstråling.
UNDGÅ DIREKTE BESTRÅLING.

ADVARSEL

Når denne delen er åpen som følge av at låsen er utkopleet eller ikke fungerer, eksisterer det usynlig laserstråling.
UNNGÅ Å BLI UTSATT FOR DIREKTE BESTRÅLING!

VARIOITS

Laite lähettää näkymätöntä lasersäteilyä, kun se avataan ja kun sisäiset turvalukot eivät toimi.
VARO JOUTUMASTA ALTTIIKSI SÄTEILYLLE.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

MINI COMPONENT HI-FI SYSTEM

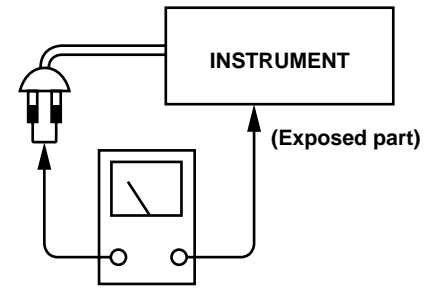
September 2000

HITACHI CONSUMER PRODUCTS (S)

Check that exposed parts are acceptably insulated from the supply circuit before returning the repaired instrument to the customer.

• **Checking method**

Measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Knob, Cover, etc. where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.



Insulation tester (DC 500V)

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with \triangle in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS

• AM-FM TUNER AMPLIFIER (HTA-R100)

Reception frequency band:	UC (FM:87.5~108.0MHz(100kHz step) AM:520~1710kHz(10kHz step)) E,EBS (FM:87.50~108.00MHz(50kHz step) MW:522~1611kHz(9kHz step) LW:153~281kHz(1kHz step)) W (FM:87.50~108.00MHz(50kHz step) AM:522~1611kHz(9kHz step) 520~1710kHz(10kHz step)) WUN (FM:76.00~108.00MHz(50kHz step) AM:522~1629kHz(9kHz step) 520~1710kHz(10kHz step))
Rated output power:	40 W + 40 W (6W/ohms, 1kHz, T.H.D. 10%)
Audio input / output jacks:	CD input jacks, TAPE input/output jacks, AUX input jacks, MD input/output jacks, PRE OUT (MONO) jack, headphones jack
Power supply:	E,EBS : AC 230 V, 50 Hz UC : AC 120 V, 60 Hz W,WUN : AC 110~127 V, 50/60 Hz AC 220~240 V, 50/60 Hz
Power consumption:	74 W (ECO-ON mode : 0.8 W)
Maximum external dimensions:	210 (W) ∞ 96.5 (H) ∞ 350 (D) mm (including feet, controls and terminals)
Weight:	4.5 kg

• CD CHANGER (DA-R100)

Sampling frequency:	44.1kHz
Optical source:	Semiconductor
Power supply:	E,EBS : AC 230 V, 50 Hz UC : AC 120 V, 60 Hz W,WUN : AC 110~127 V, 50/60 Hz AC 220~240 V, 50/60 Hz
Power consumption:	12 W
Maximum external dimensions:	210 (W) ∞ 96.5 (H) ∞ 340 (D) mm (including feet, controls and terminals)
Weight:	3.2 kg

• SPEAKER (HS-R30)

System:	2 way BASS Reflex Speaker System
Woofer:	10 cm ∞ 1
Tweeter:	5 cm ∞ 1
Impedance:	6 ohms
Maximum external dimensions:	150 (W) ∞ 275 (H) ∞ 227 (D) mm
Weight:	3.0 kg (1 speaker)

• TIMER

System:	Digital Quartz Clock
Display Format:	12-hour cycle (UC DEST) 24-hour cycle (other DEST)
Timer Accuracy:	Within 60 seconds at monthly rate

• REMOTE CONTROL

Remote control system:	Infrared pulse
Power supply:	Two DC 1.5V R6P/AA batteries
Maximum external dimensions:	54 (W) ∞ 27 (H) ∞ 172.5 (D) mm
Weight:	145g (including batteries)

• MINI DISC RECORDER (HMD-R50)

Type:	MiniDisc digital audio system
Wow & flutter:	Below measurable limits (±0.001% W. peak or less)
Sampling frequency:	44.1 kHz
Recording method:	Magnetic modulation overwriting
Light source:	Semiconductor Laser
Power supply:	E,EBS : AC 230 V, 50 Hz UC : AC 120 V, 60 Hz W,WUN : AC 110~127 V, 50/60 Hz AC 220~240 V, 50/60 Hz
Power consumption:	14 W
Maximum external dimensions:	210 (width) ∞ 96.5 (height) ∞ 320 (depth) mm (including feet, controls and terminals)
Weight:	2.6 kg

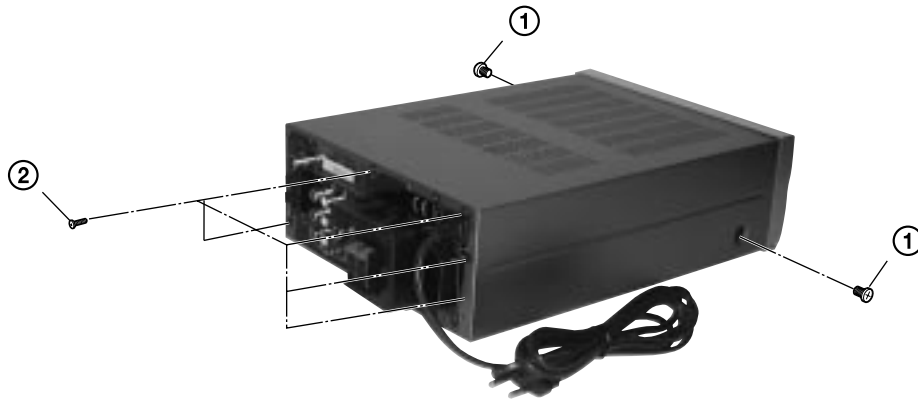
Specifications are subject to change or performance improvement without notice.

SERVICE POINTS

• AM-FM TUNER AMPLIFIER (HTA-R100)

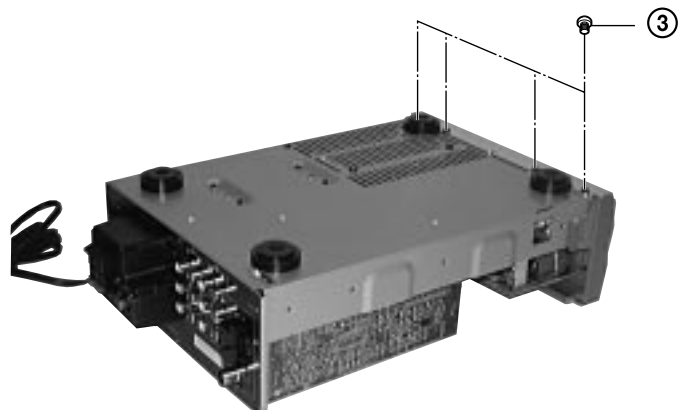
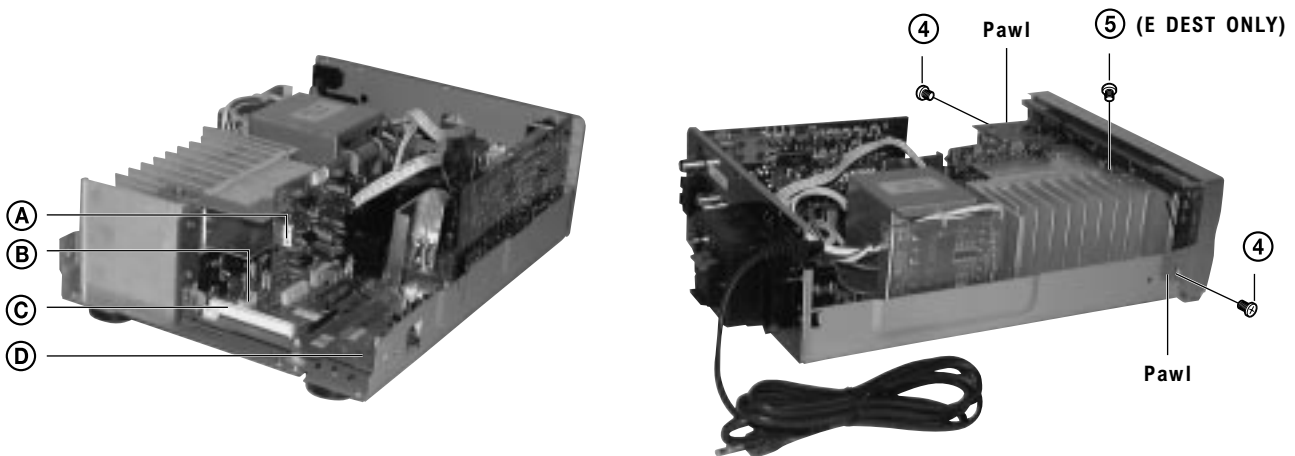
1. Removal of Cover

- (1) Remove 2 screws ① from both sides.
- (2) Remove 5 screws ② from the rear plate.



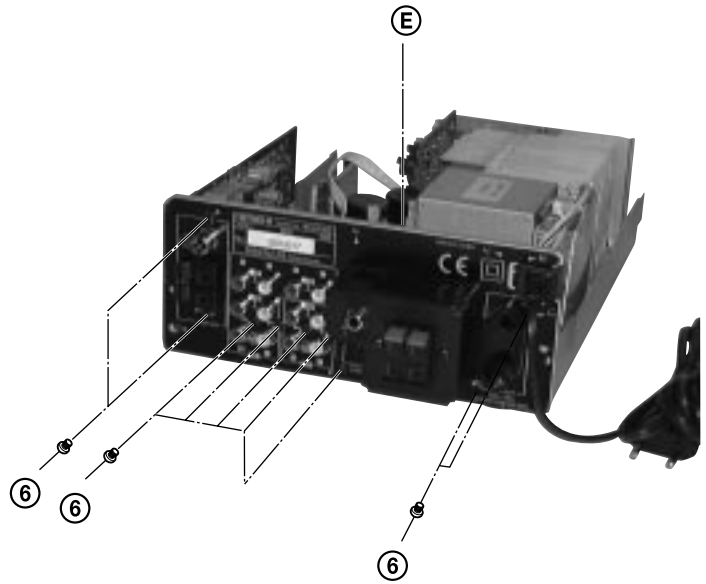
2. Removal of Front Panel

- (1) Remove 4 screws ③ from the bottom side of the front panel.
- (2) Remove 2 screws ④ from both sides.
- (3) Remove screw ⑤ to remove the ground wire. (E DEST ONLY).
- (4) Remove the connectors ①, ②, ③ and ④.
- (5) Remove the Front Panel by releasing the pawl on both sides.



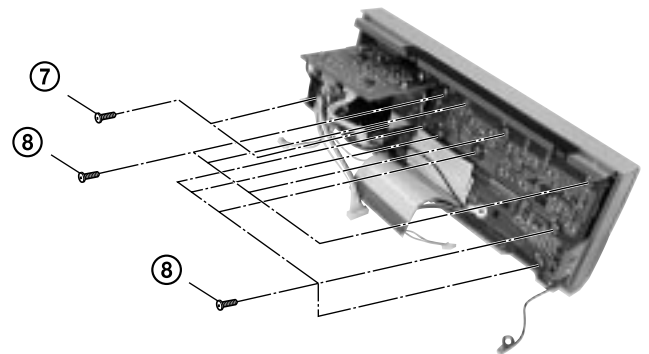
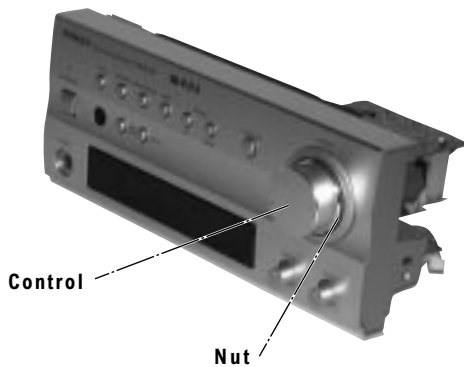
3. Removal of Rear Panel

- (1) Remove 9 screws ⑥ from the rear panel.
- (2) Remove the connector ⑤.



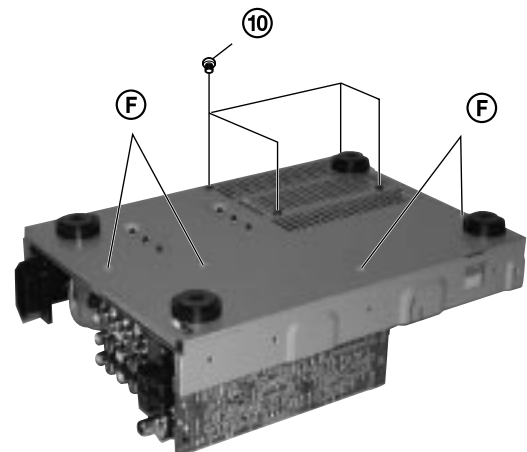
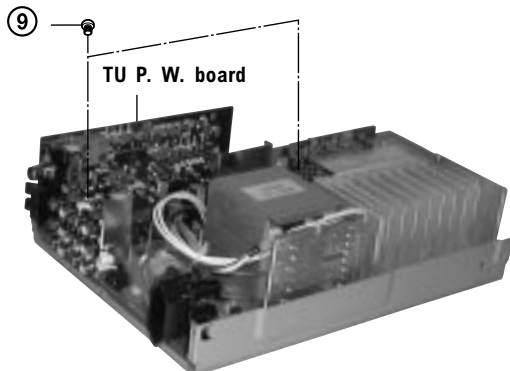
4. Removal of Front P. W. Board

- (1) Remove 2 screws ⑦ and then the tone P. W. board.
- (2) Remove the volume knob assy, remove the nut and remove the volume P. W. board.
- (3) Remove 9 screws ⑧.



5. Removal of Main P. W. Board

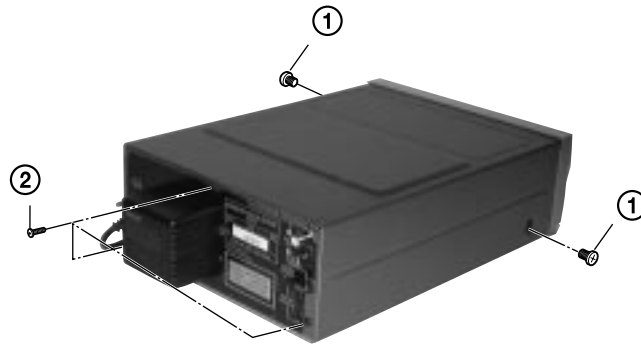
- (1) Lift up the TU P. W. board and remove it from the main P. W. board.
- (2) Remove 2 screws ⑨ from the top side of the main P. W. board.
- (3) Remove 4 screws ⑩ from the bottom side of the chassis.
- (4) Remove the 4 P. W. board holders ⑥ from the chassis via the bottom side of the chassis.



• **CD CHANGER (DA-R100)**

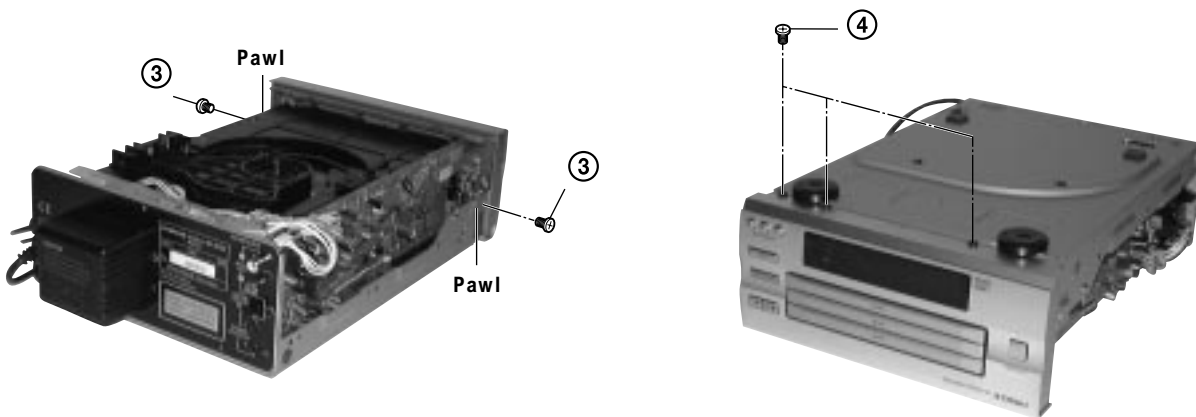
1. Removal of Cover

- (1) Remove 2 screws ① from both sides.
- (2) Remove 3 screws ② from the rear panel.



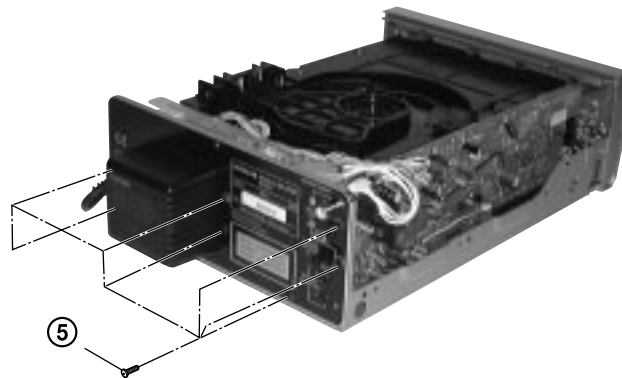
2. Removal of Front Panel

- (1) Remove 2 screws ③ from both sides.
- (2) Remove 3 screws ④ from the bottom side of the front panel.
- (3) Remove the Front Panel by releasing the pawl on both sides.
- (4) Remove the flat cable from the main P.W. board.



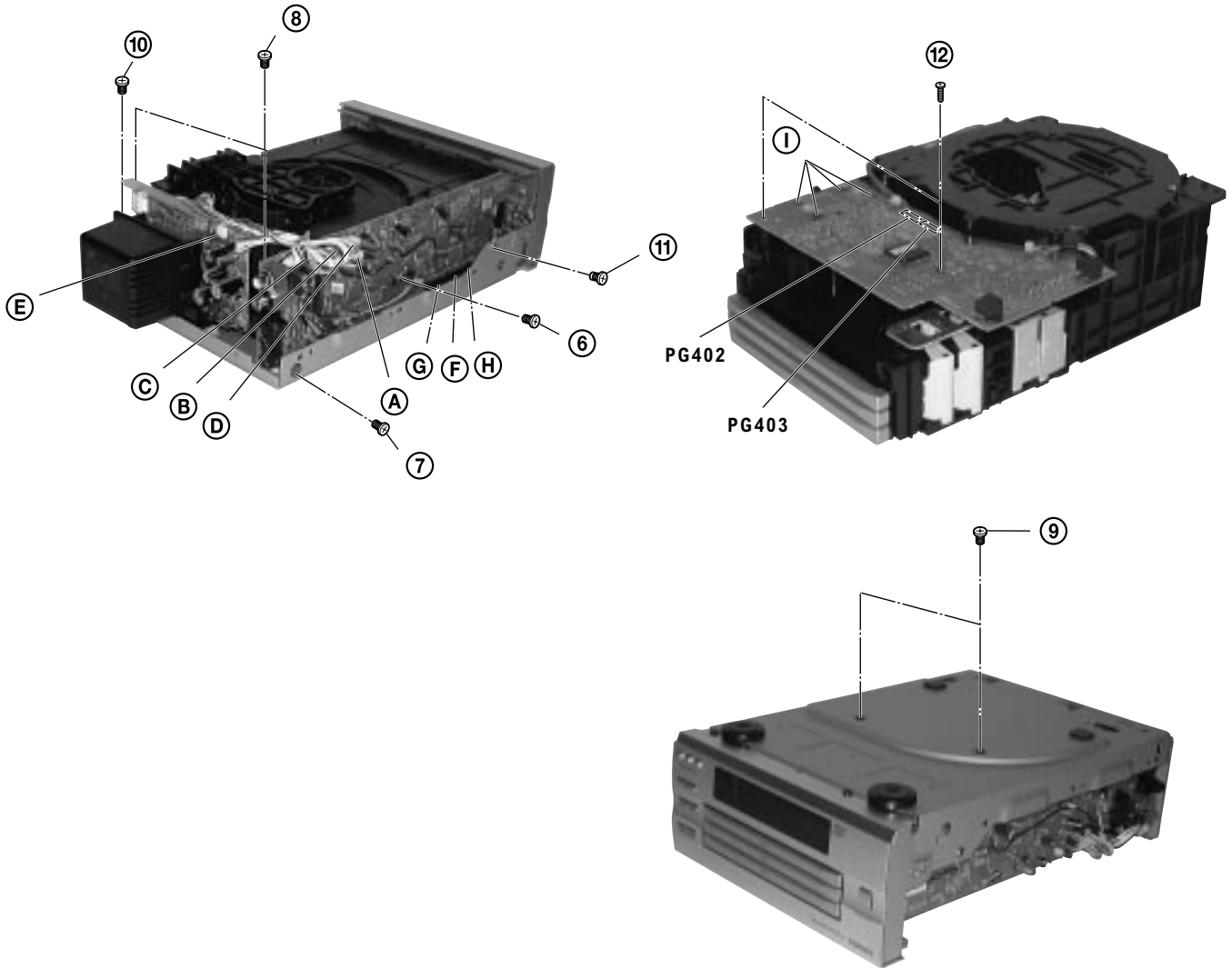
3. Removal of Rear Panel

- (1) Remove 7 screws ⑤ from the rear panel.



4. Removal of CD Mechanical-Unit Assembly, Main P. W. Board and Motor P. W. Board

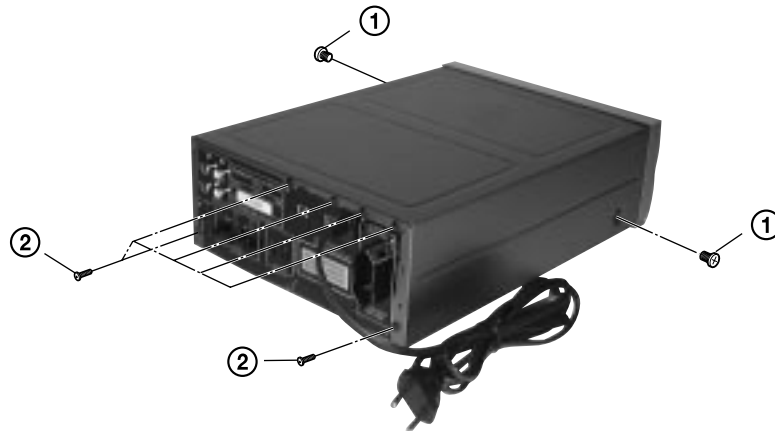
- (1) Remove one each of screws ⑥ and ⑦ from the main P.W. board on the side.
- (2) Remove 2 screws ⑧ from the top side of the mechanical unit.
- (3) Remove 2 screws ⑨ from the bottom side of the chassis.
- (4) Remove the connectors ①, ②, ③ and ④ of the main P.W. board.
- (5) Remove the connector ⑤ of the P.T. P.W. board.
- (6) Remove 1 screw ⑩ from the top side of the P.T. cover and detach the power transformer from the chassis.
- (7) Remove 1 screw ⑪ of the ground wire.
- (8) Remove the connectors ⑫, ⑬ and ⑭ of the motor P.W. board from the main P.W. board.
- (9) Remove 2 screws ⑮ from the motor P.W. board.
- (10) Remove the solder from the four places of the soldering section ⑯ of the motor.
- (11) Remove the connectors PG402 and 403 of the motor P.W. board.



• **MINI DISC RECORDER (HMD-R50)**

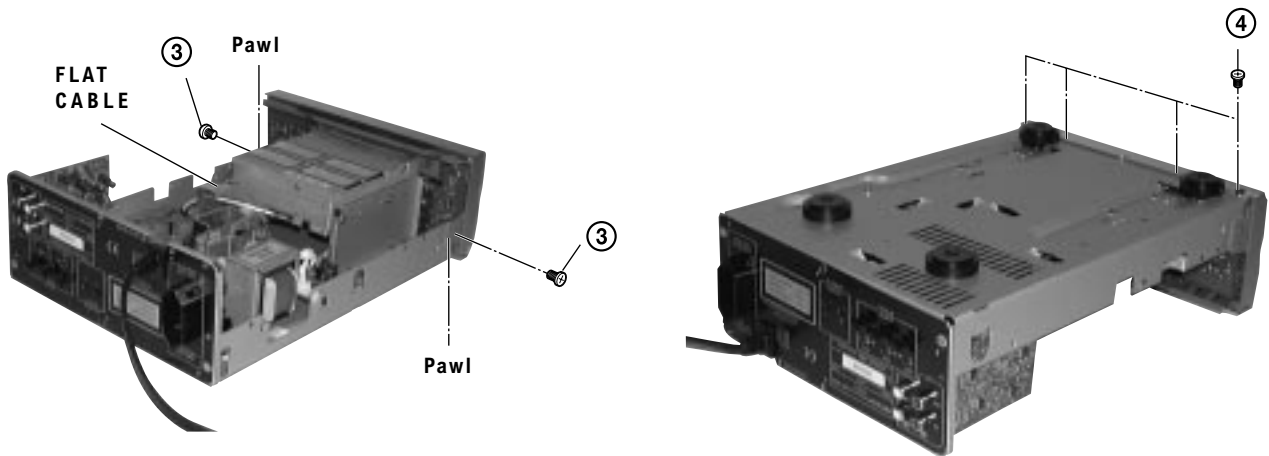
1. Removal of Cover

- (1) Remove 2 screws ① from both sides.
- (2) Remove 6 screws ② from the rear panel.



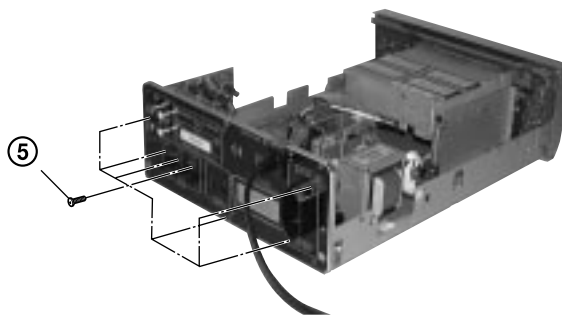
2. Removal of Front Panel

- (1) Remove 2 screws ③ from both sides.
- (2) Remove 4 screws ④ from the bottom side of the front panel.
- (3) Remove the Front Panel by releasing the pawl on both sides.
- (4) Remove the flat cable from the main P.W. board.



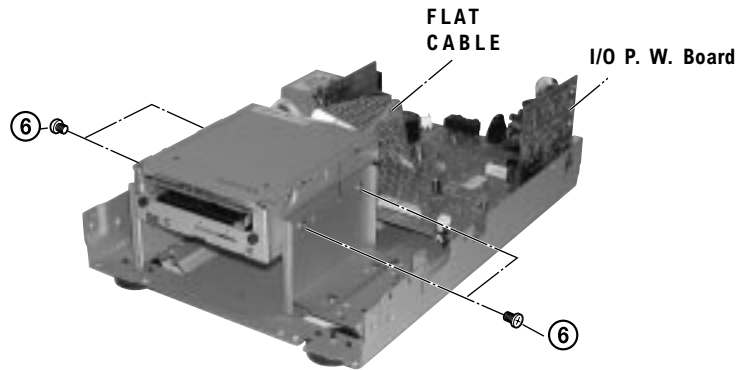
3. Removal of Rear Panel

- (1) Remove 7 screws ⑤ from the rear panel.



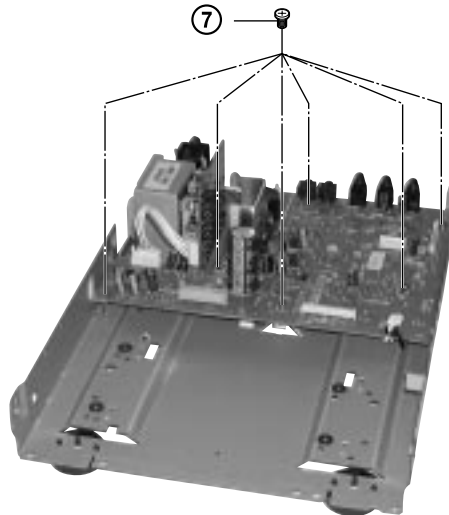
4. Removal of MD Mechanical-Unit Assembly

- (1) Remove 4 screws ⑥.
- (2) Remove the flat cable from the main P.W. board.



5. Removal of Main P. W. Board

- (1) Lift up the I/O P. W. board and remove it from the main P. W. board.
- (2) Remove 6 screws ⑦.



ADJUSTMENTS

Measuring Instruments Necessary for Adjustments

- DC voltmeter
- Screwdrivers for adjustments

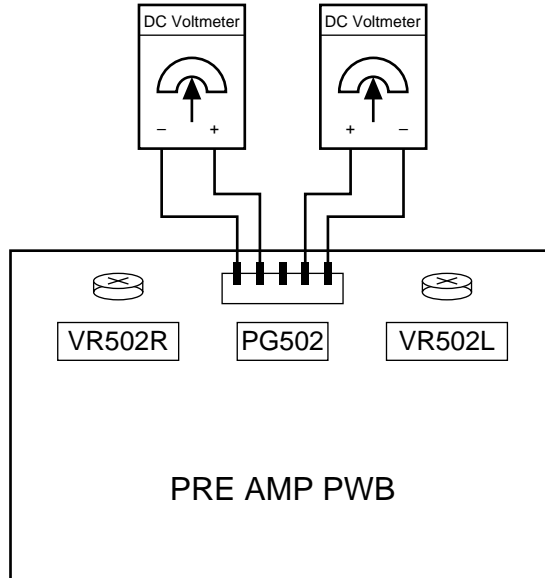
Before adjustments, perform the following setting in the receiver section (HTA-R100).

Note: Making adjustments without performing the following setting may result in damage of power transistors.

- (1) Power switch : OFF
- (2) Volume knob : MIN
- (3) Function switch : AUX
- (4) Speaker : Open
- (5) VR502L/R : Minimum

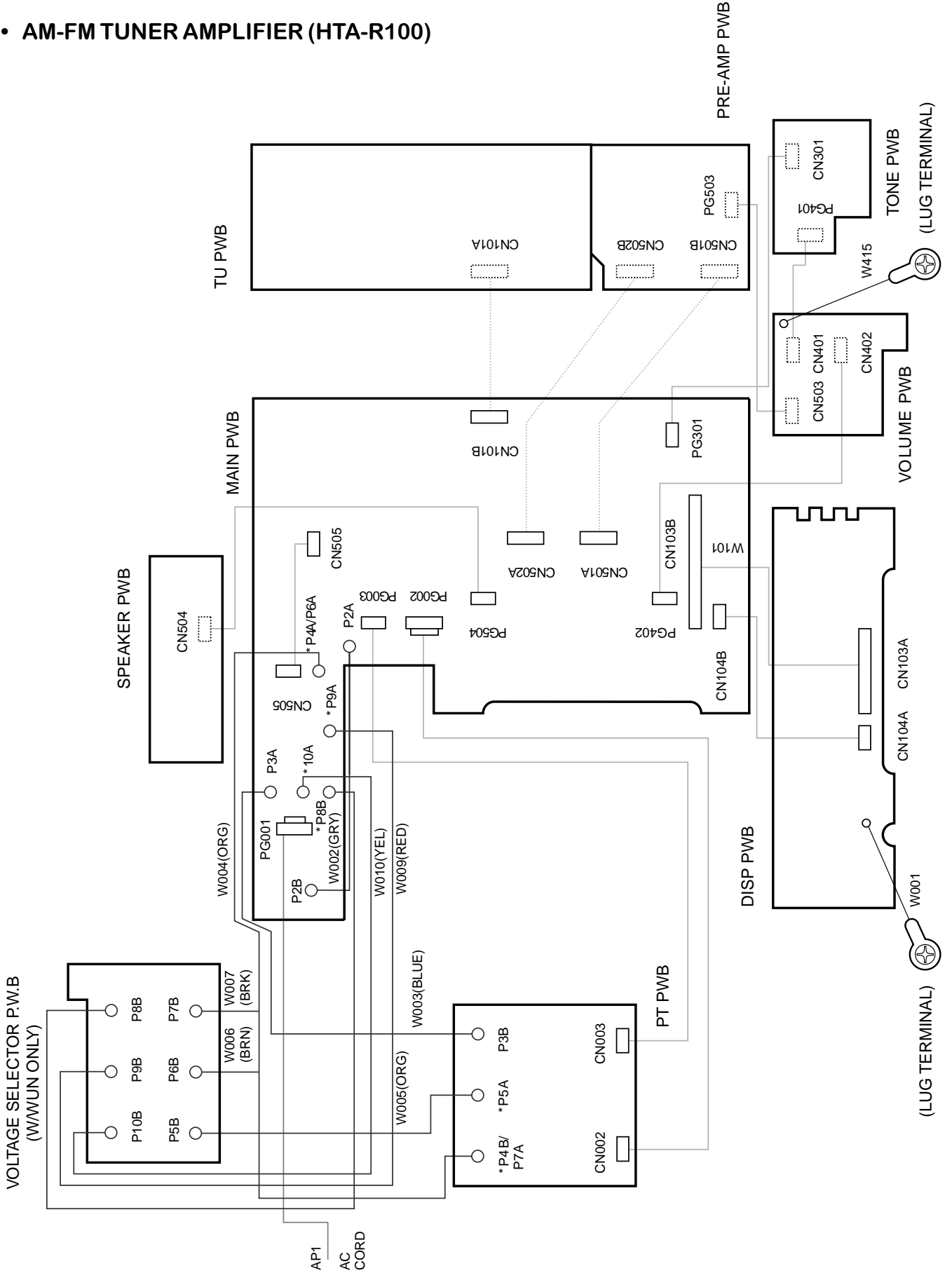
1. Idle Current Adjustment

- (1) Connect the DC voltmeter to PG502. (Refer to the connection diagram.)
- (2) Turn on the power and adjust VR502L (on the left) and VR502R (on the right) so that the measured value of the voltmeter can be within the range of 2 ± 0.5 mV.

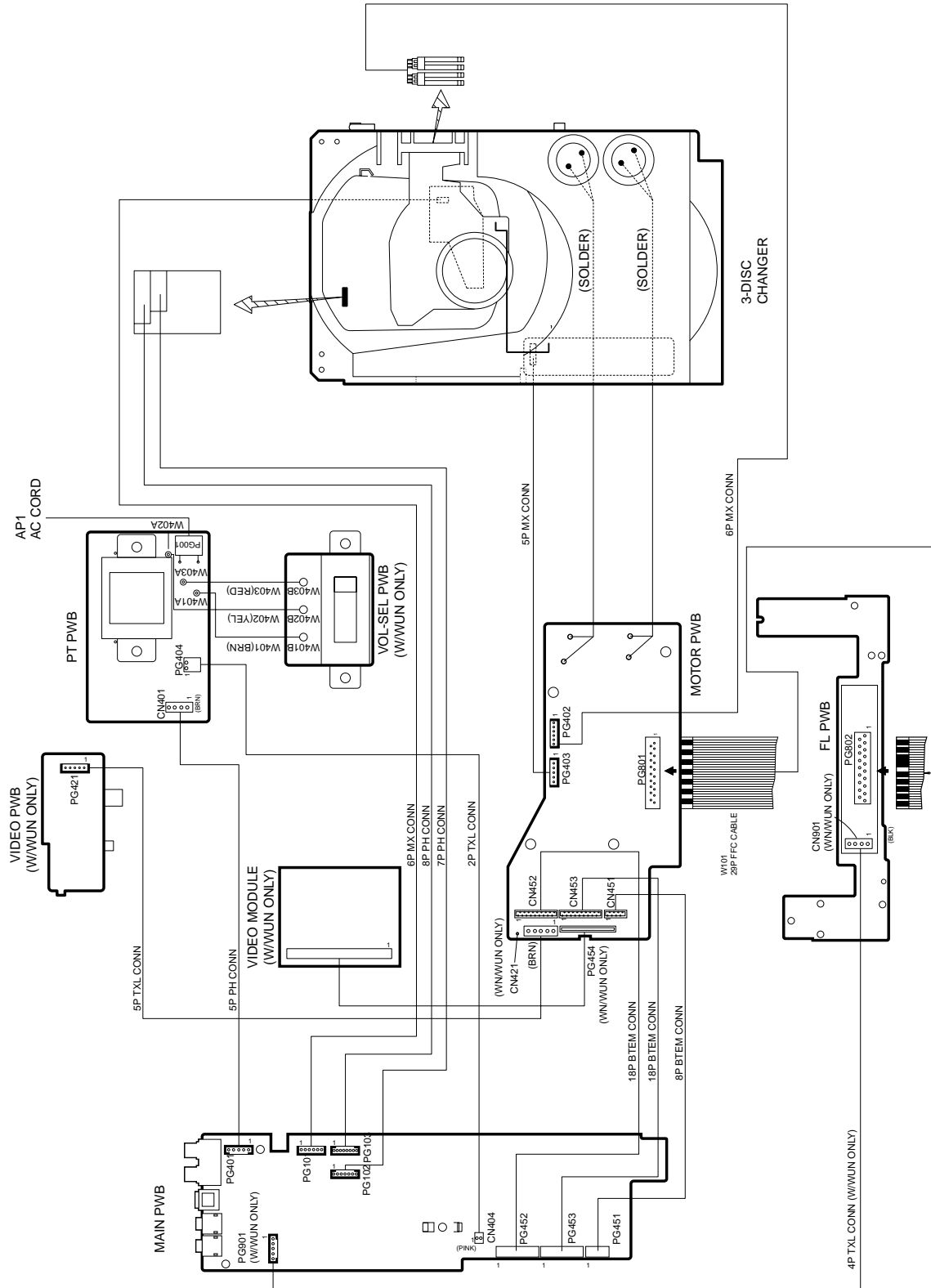


WIRING DIAGRAMS

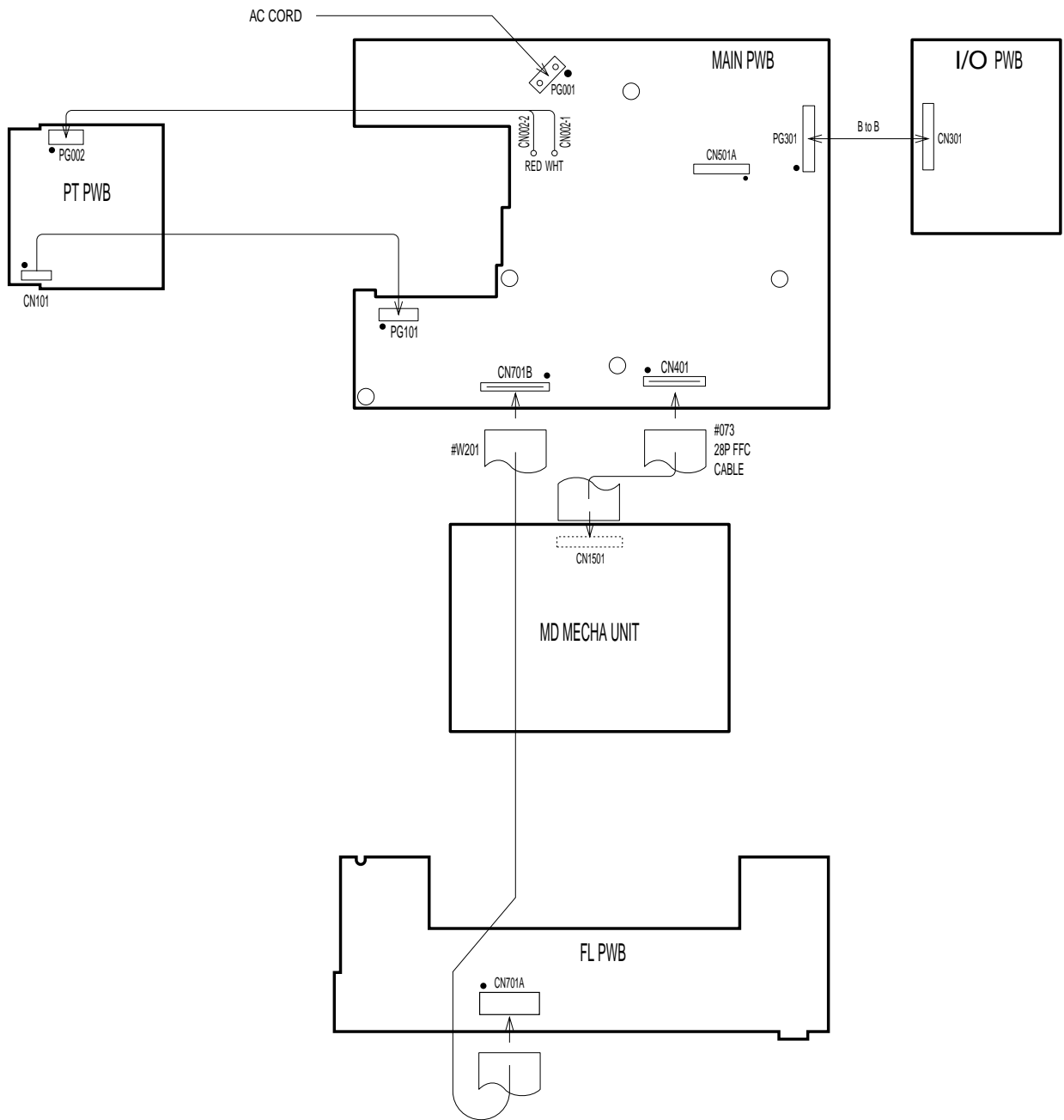
• AM-FM TUNER AMPLIFIER (HTA-R100)



• CD CHANGER (DA-R100)



• MINI DISC RECORDER (HMD-R50)

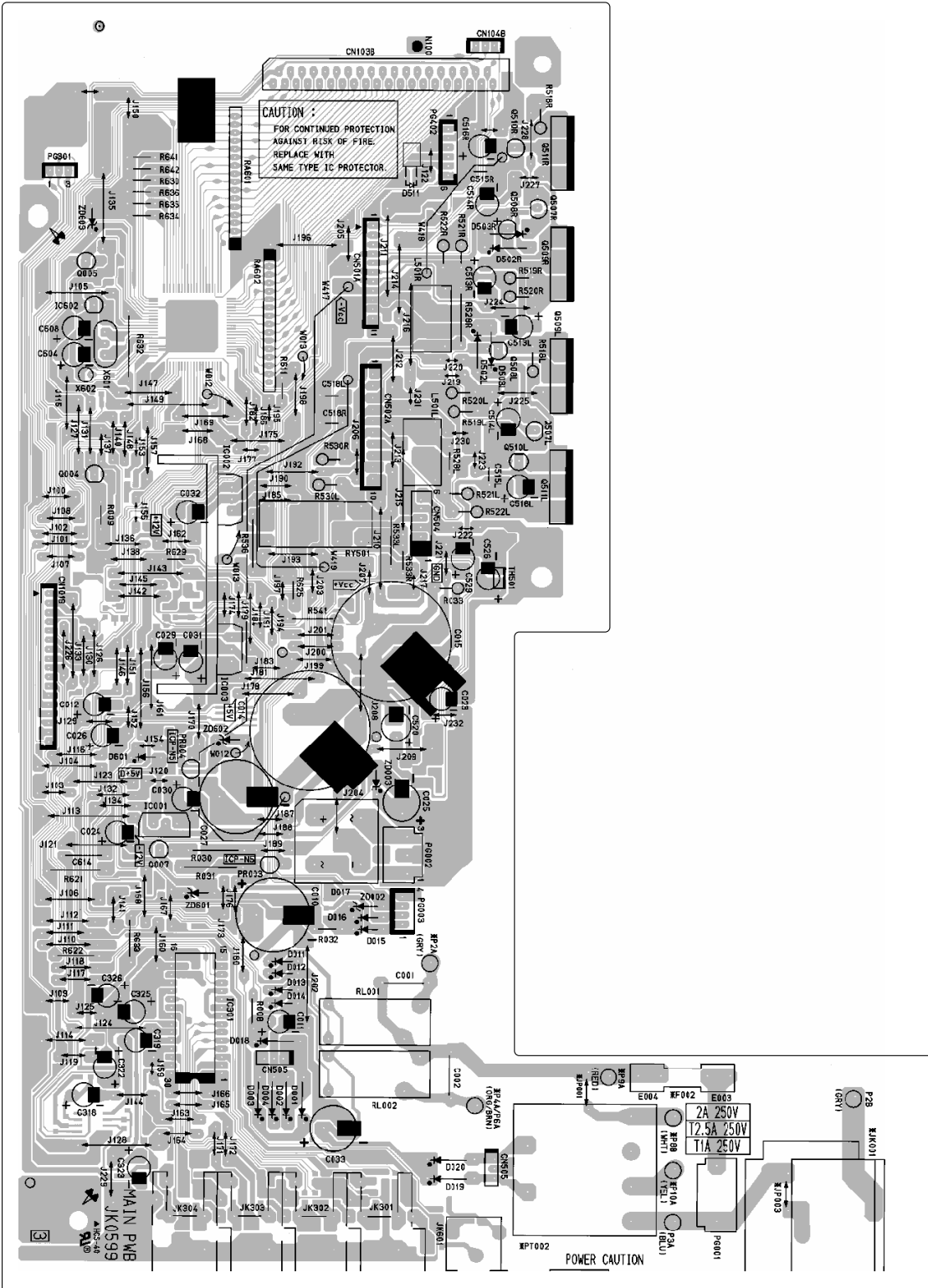


PRINTED WIRING BOARDS

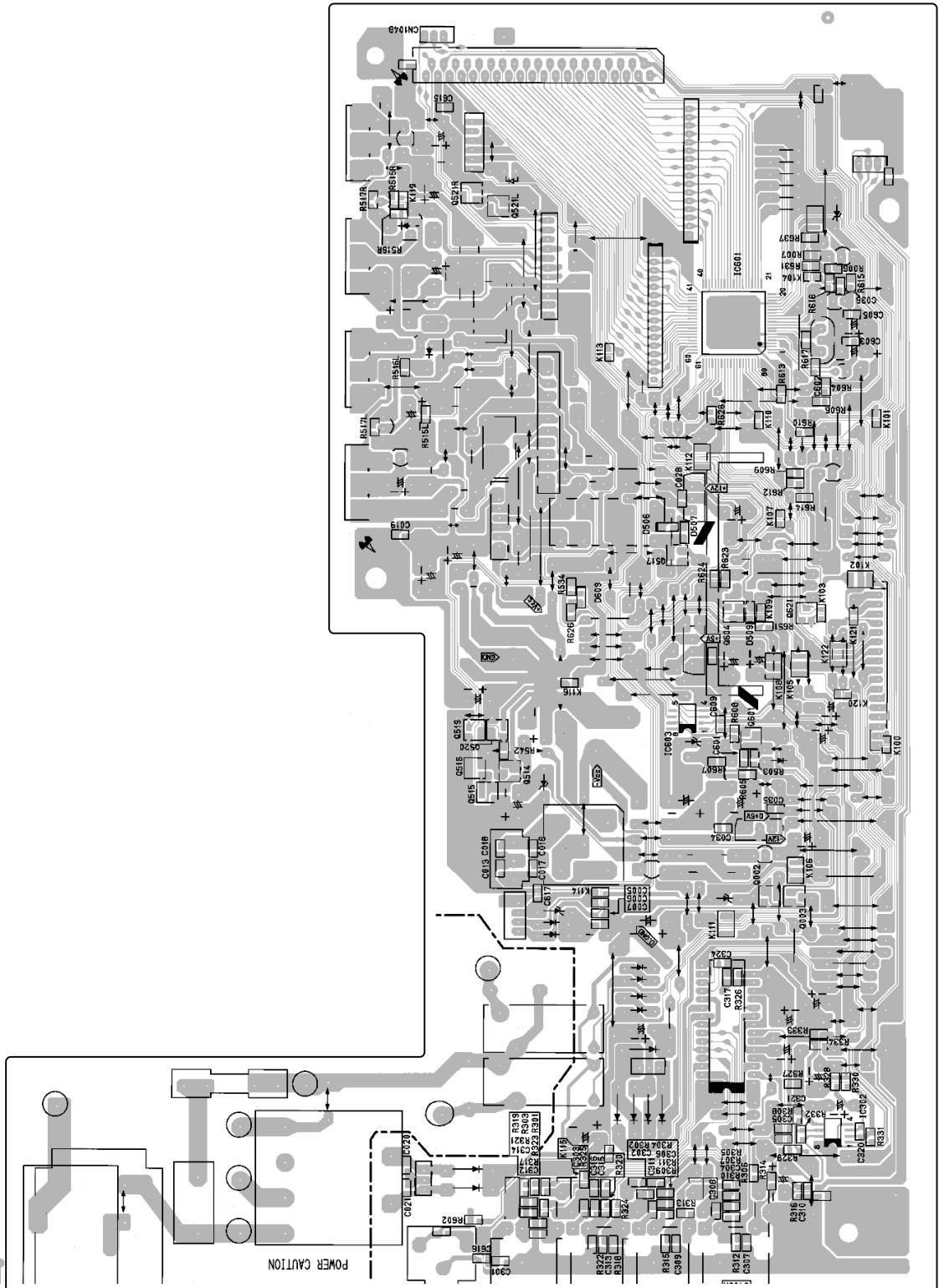
- AM-FM TUNER AMPLIFIER (HTA-R100)

MAIN PWB

Component Side

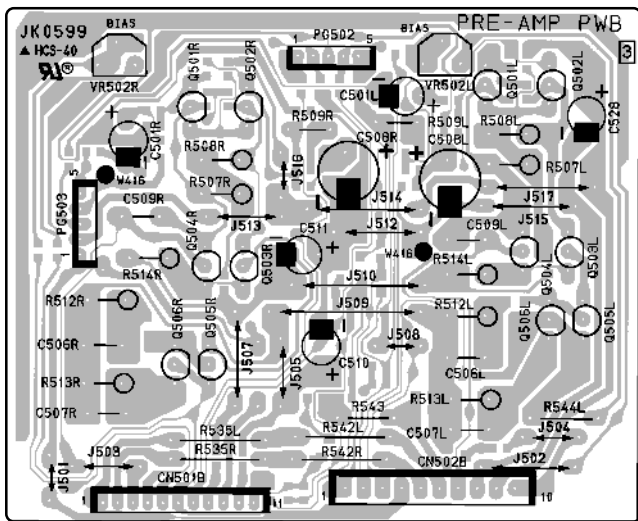


Soldering Side

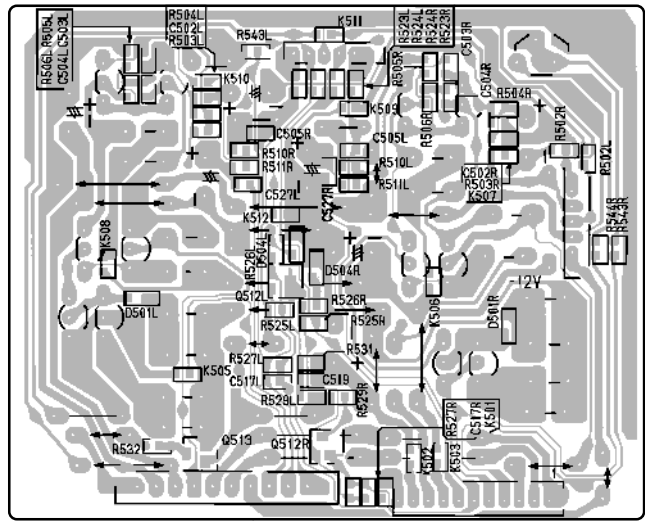


PRE-AMP PWB

Component Side

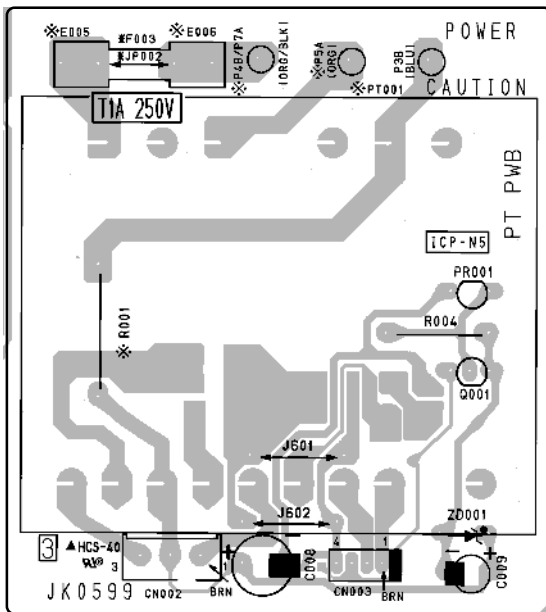


Soldering Side

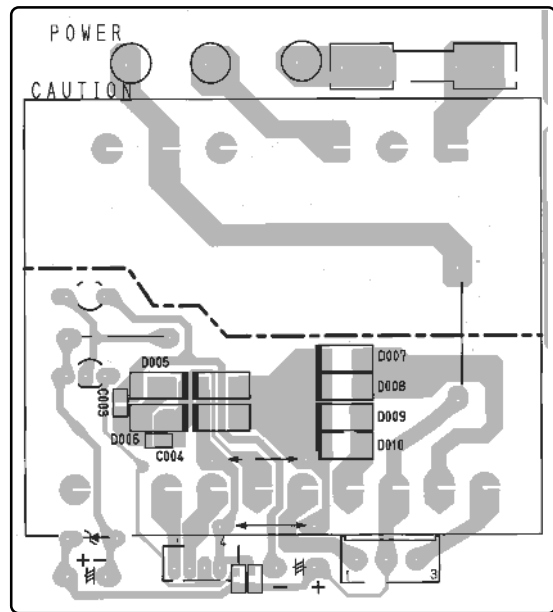


PT PWB

Component Side

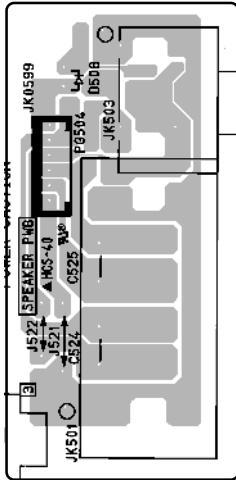


Soldering Side

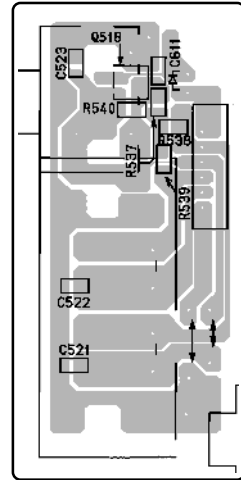


SP PWB

Component Side

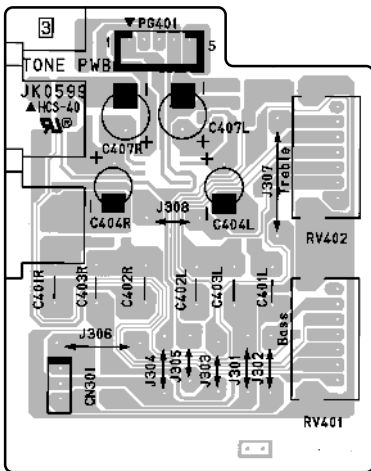


Soldering Side

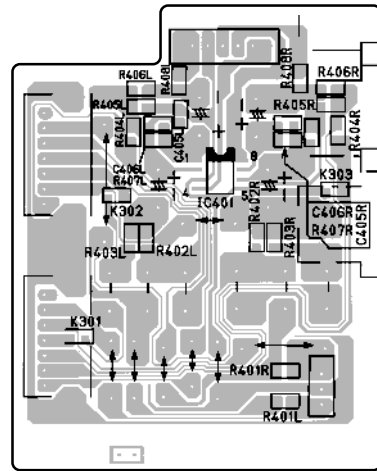


TONE PWB

Component Side

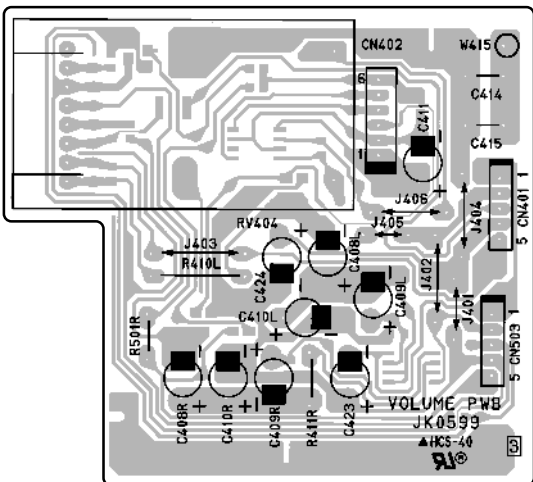


Soldering Side

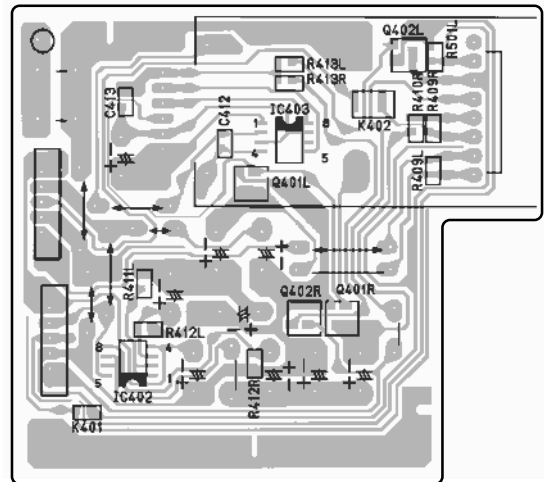


VOL PWB

Component Side

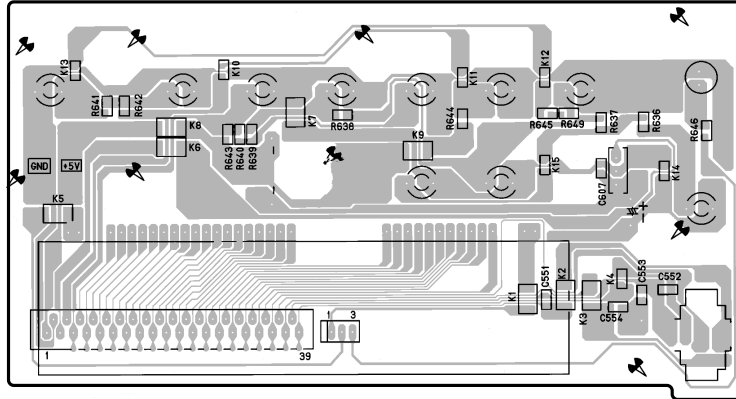


Soldering Side

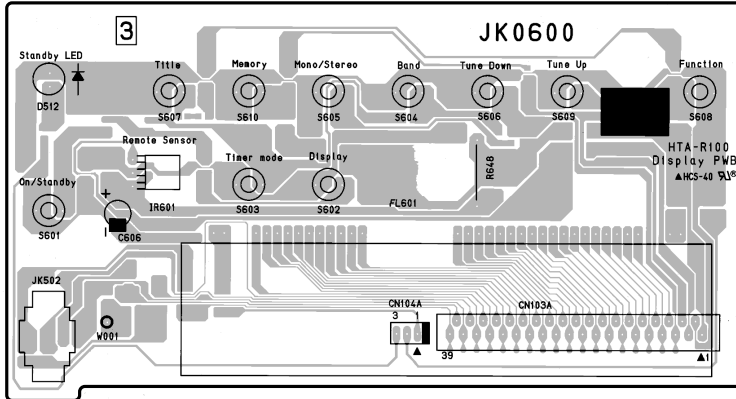


DISPLAY PWB

Soldering Side

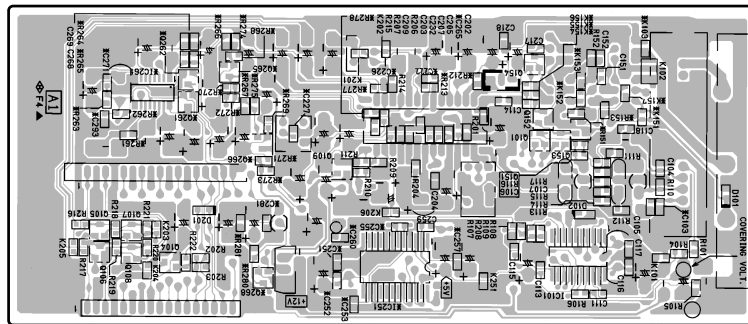


Component Side

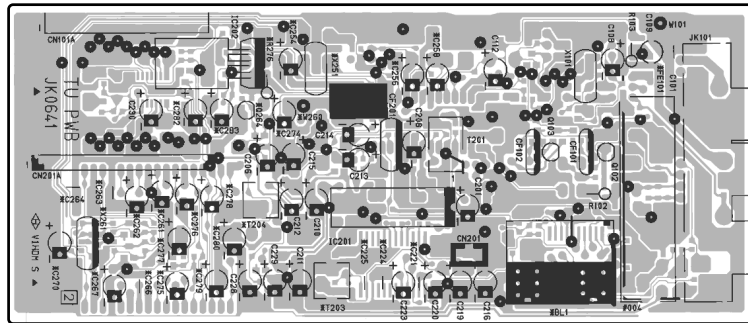


TU PWB

Soldering Side



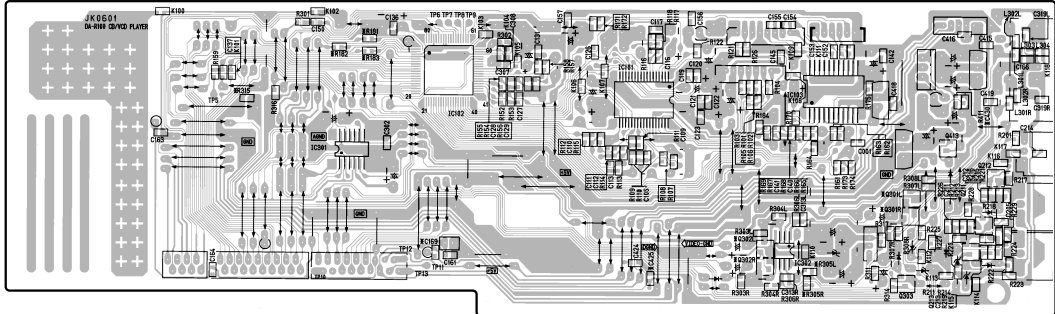
Component Side



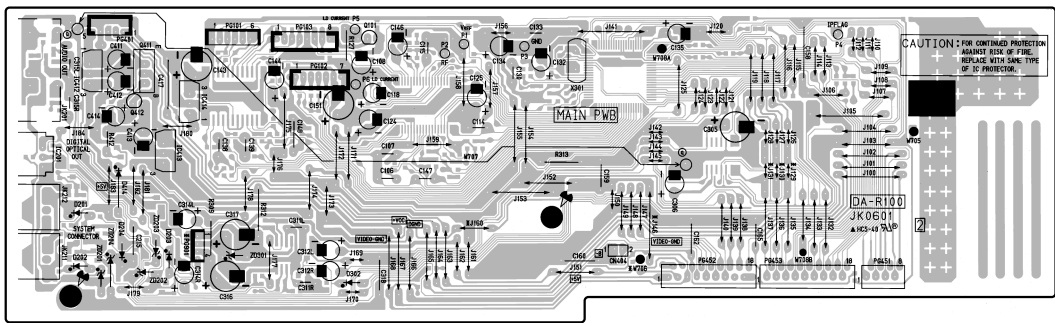
• CD CHANGER (DA-R100)

MAIN PWB

Soldering Side

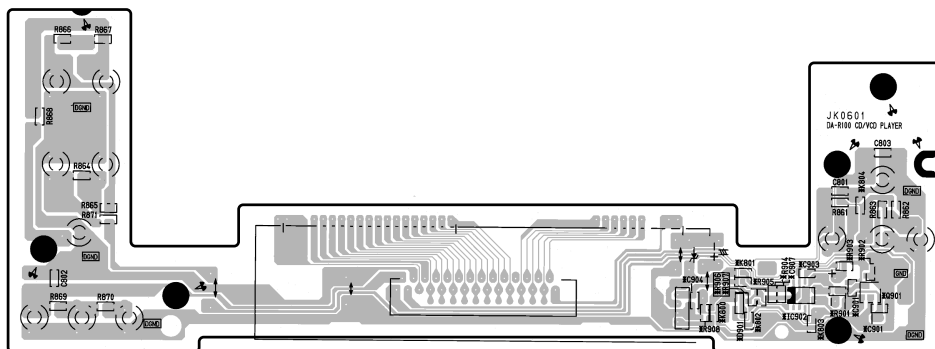


Component Side

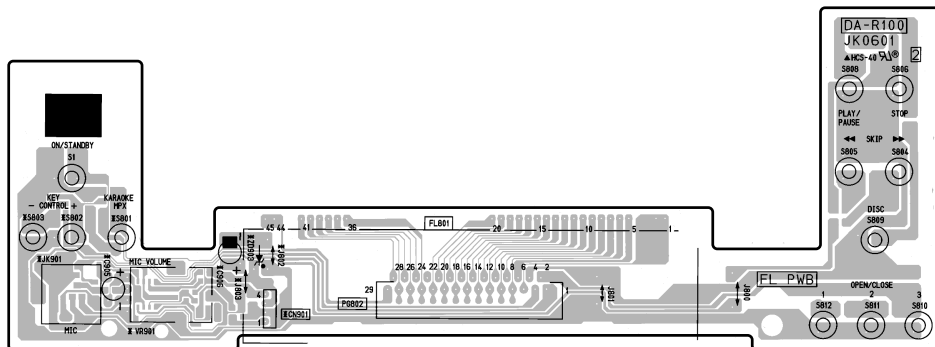


FL PWB

Soldering Side

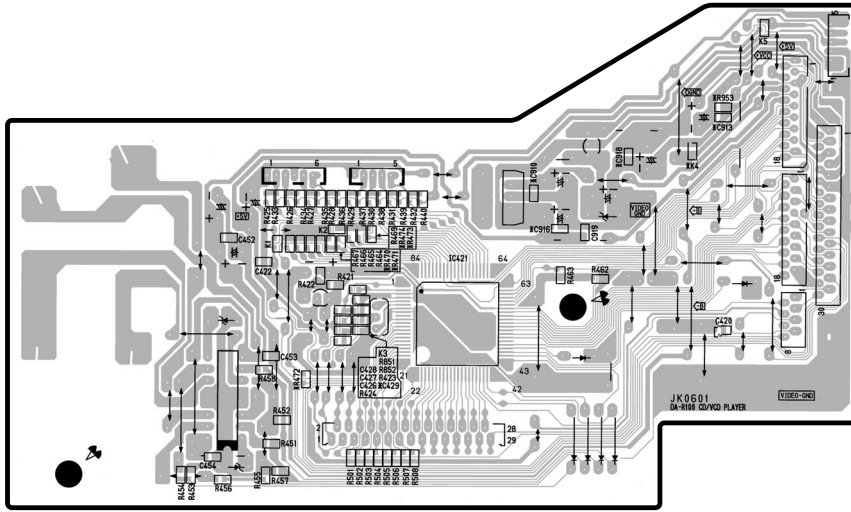


Component Side

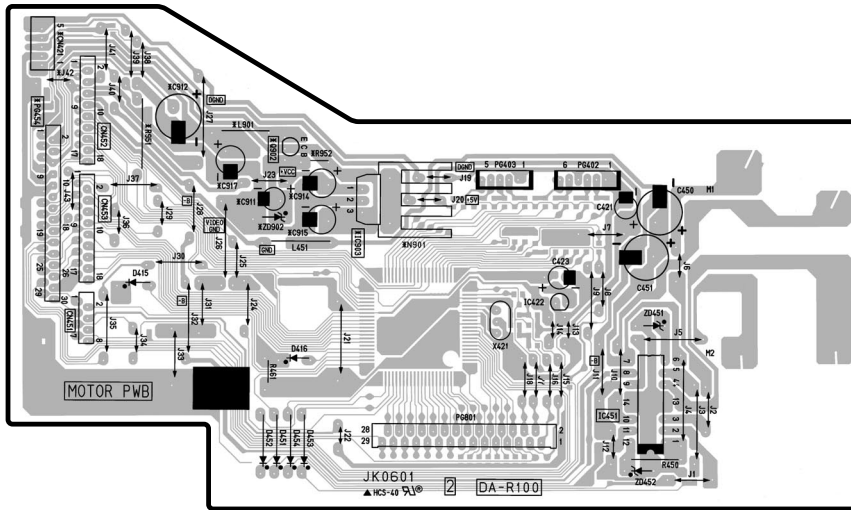


MONITOR PWB

Soldering Side

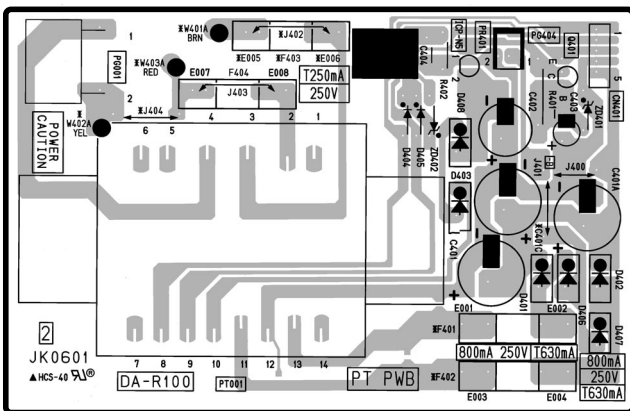


Component Side

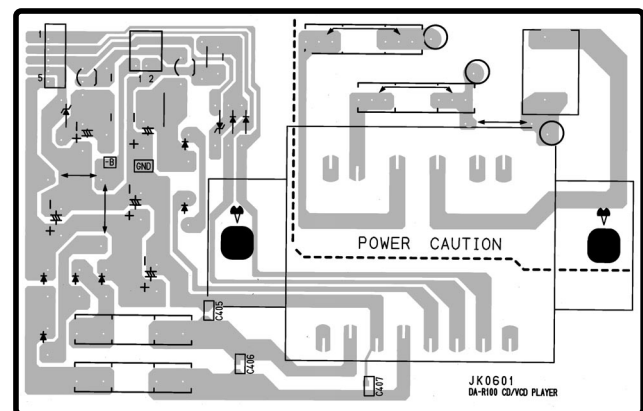


PT PWB

Component Side



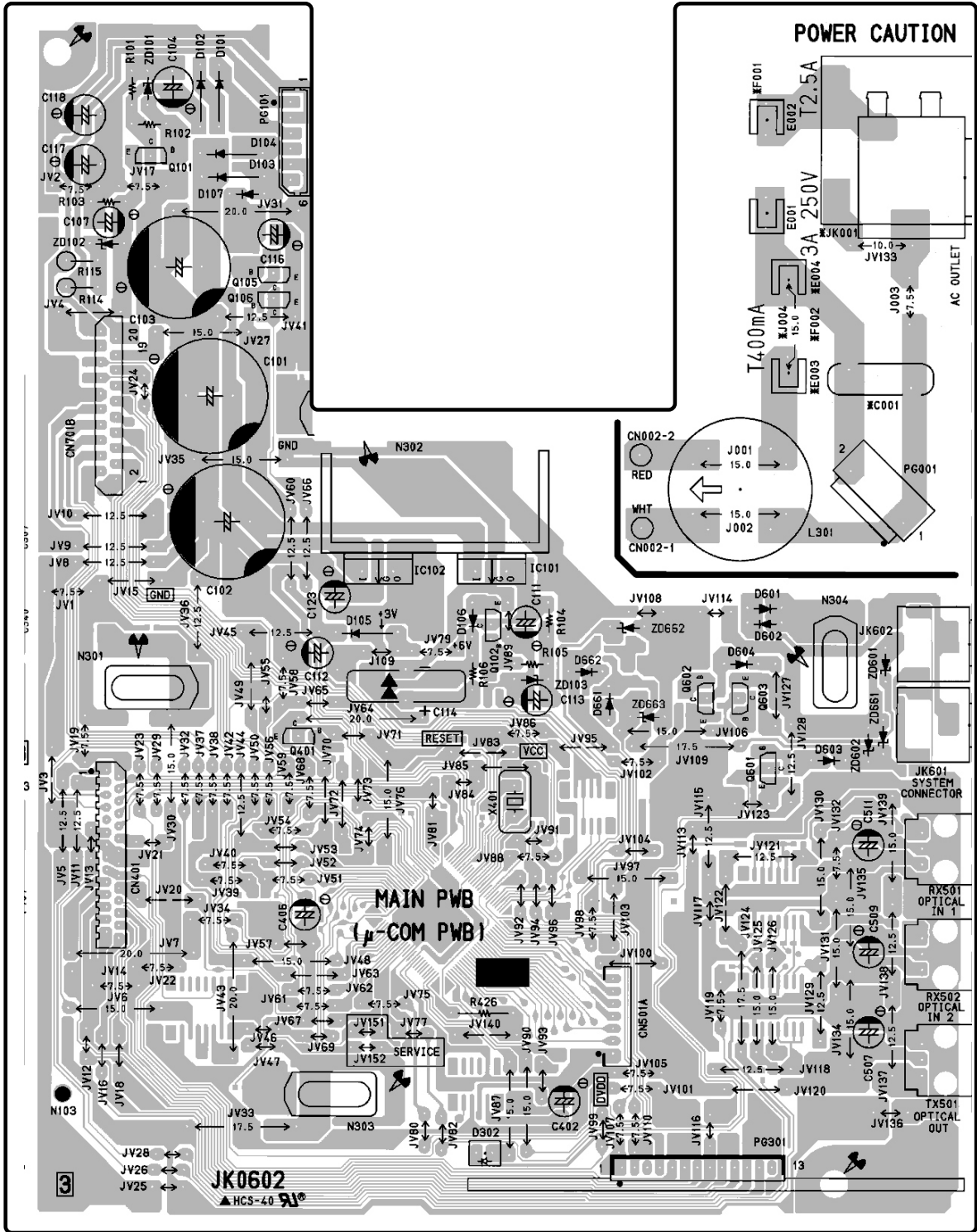
Soldering Side



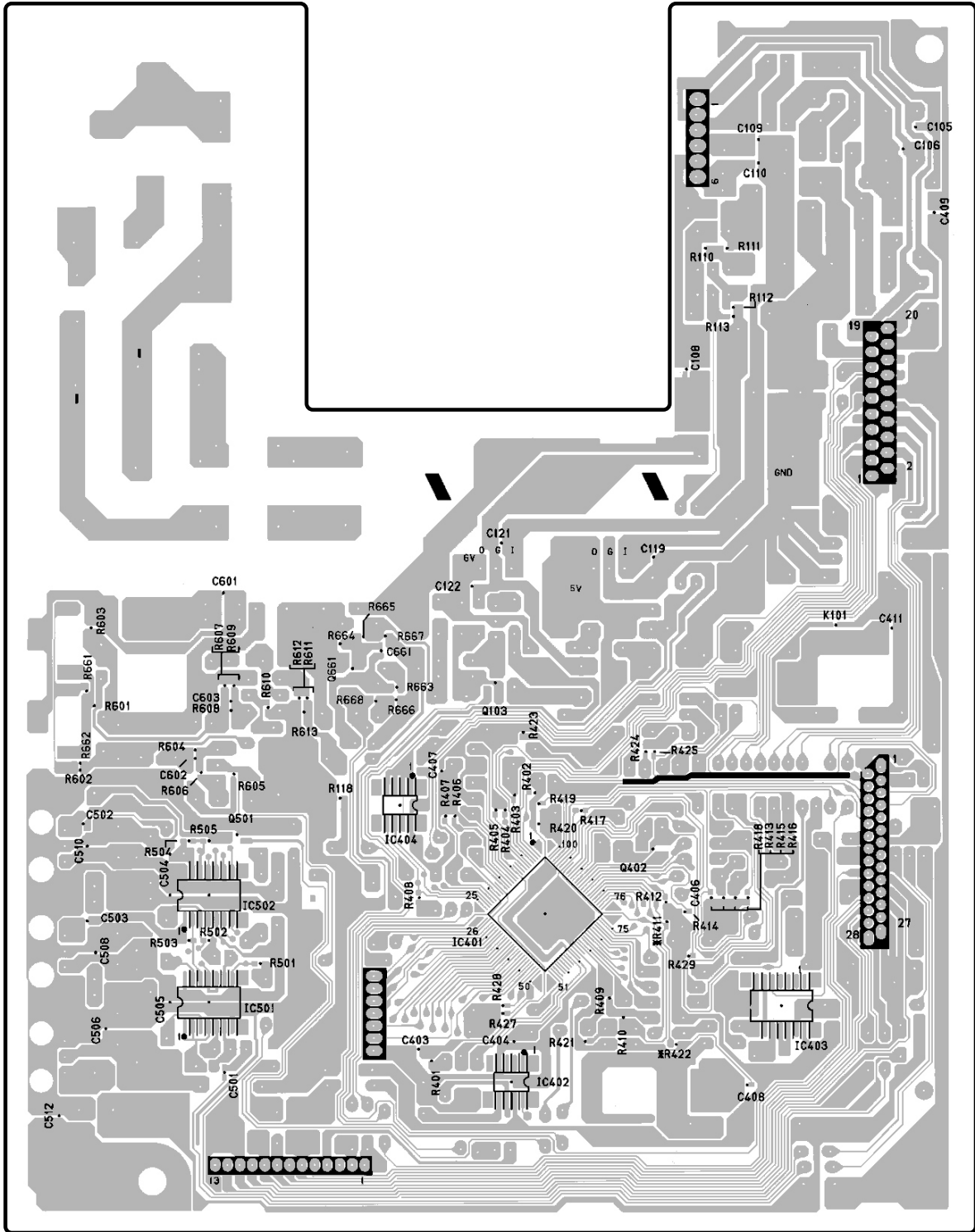
• MINI DISC RECORDER (HMD-R50)

MAIN PWB

Component Side

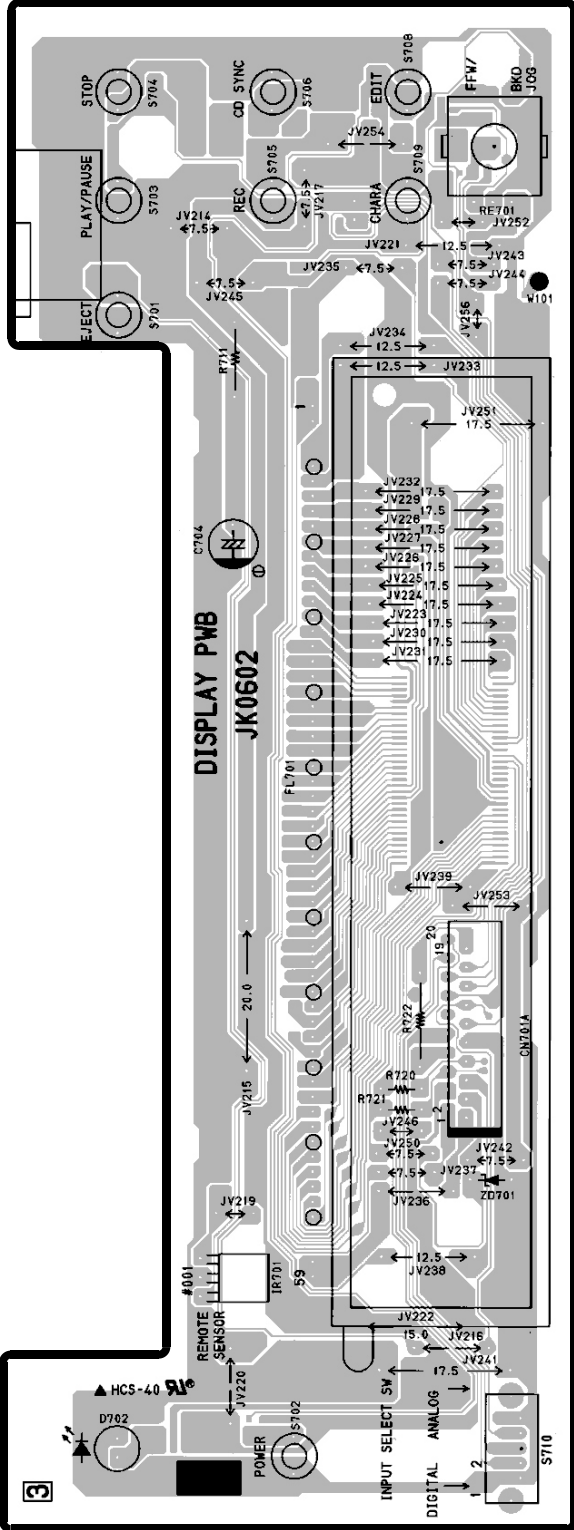


Soldering Side

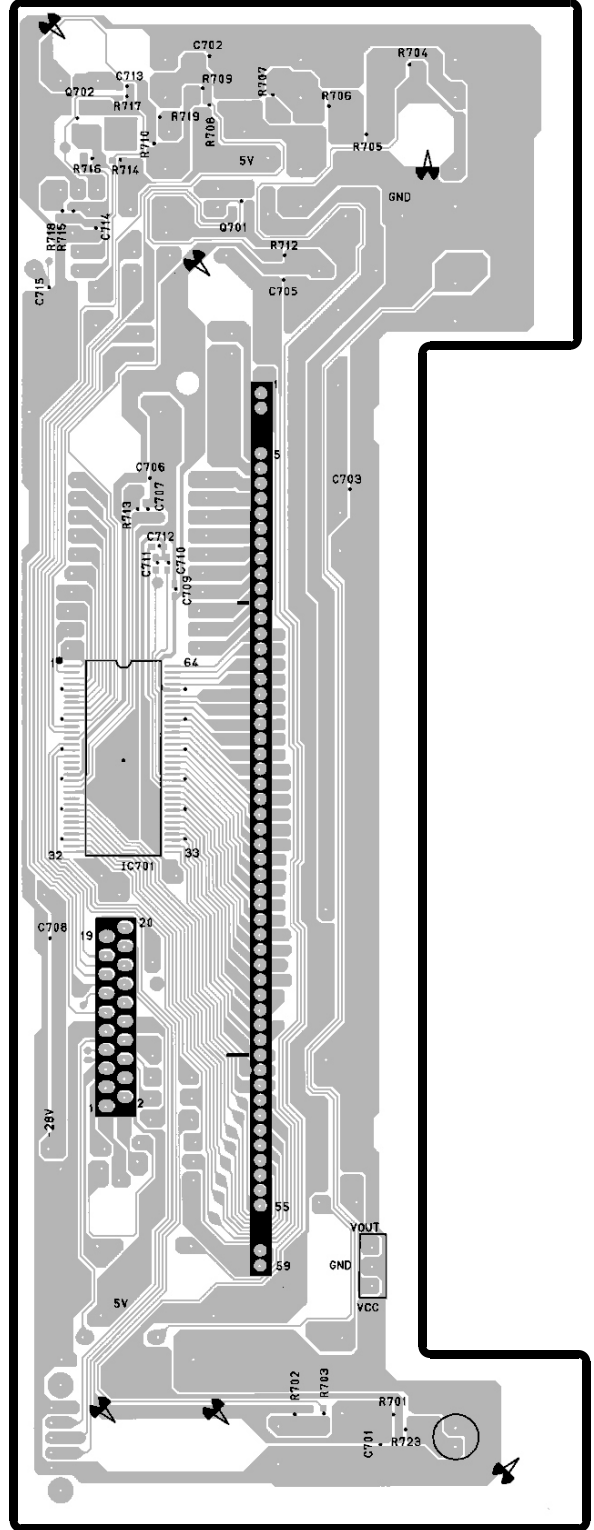


DISPLA Y PWB

Component Side

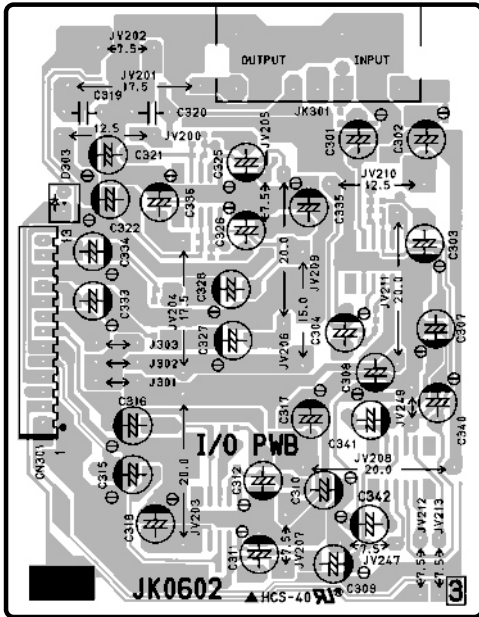


Soldering Side

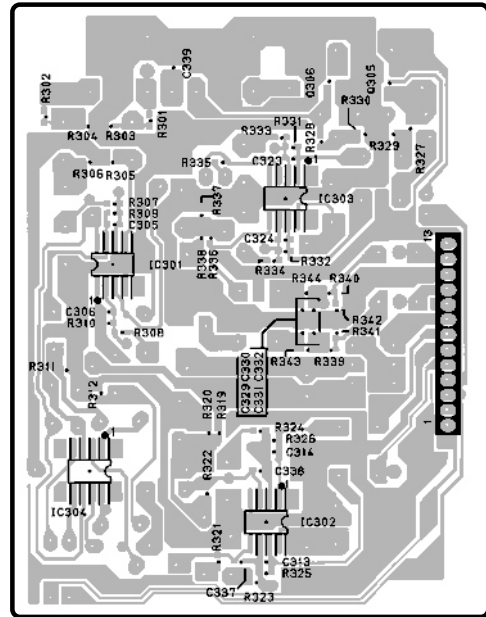


I/O PWB

Component Side

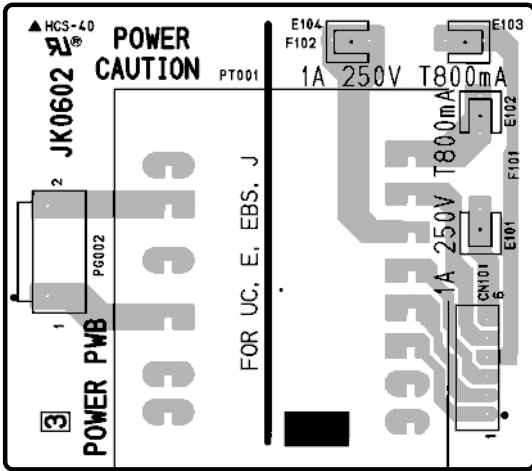


Soldering Side

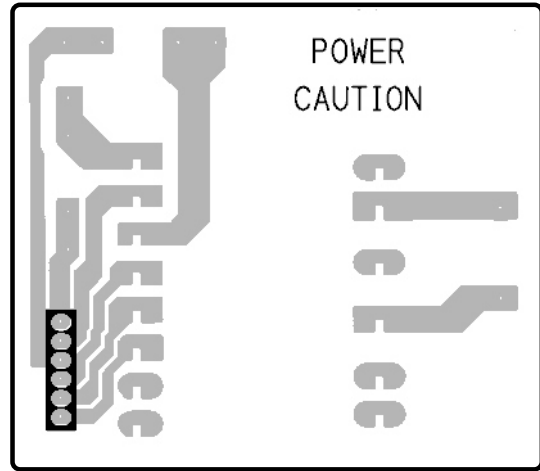


POWER PWB

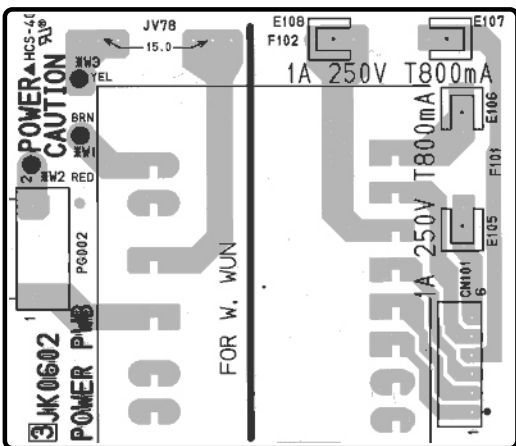
Component Side



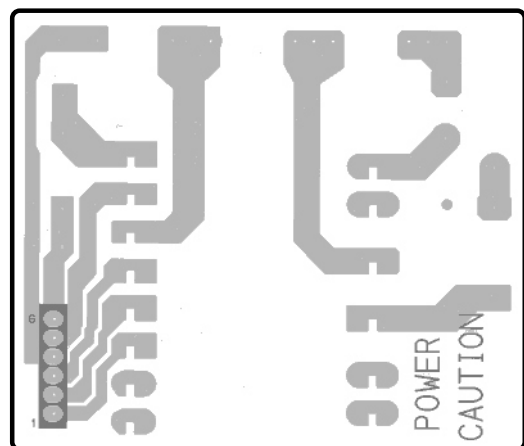
Soldering Side



Component Side

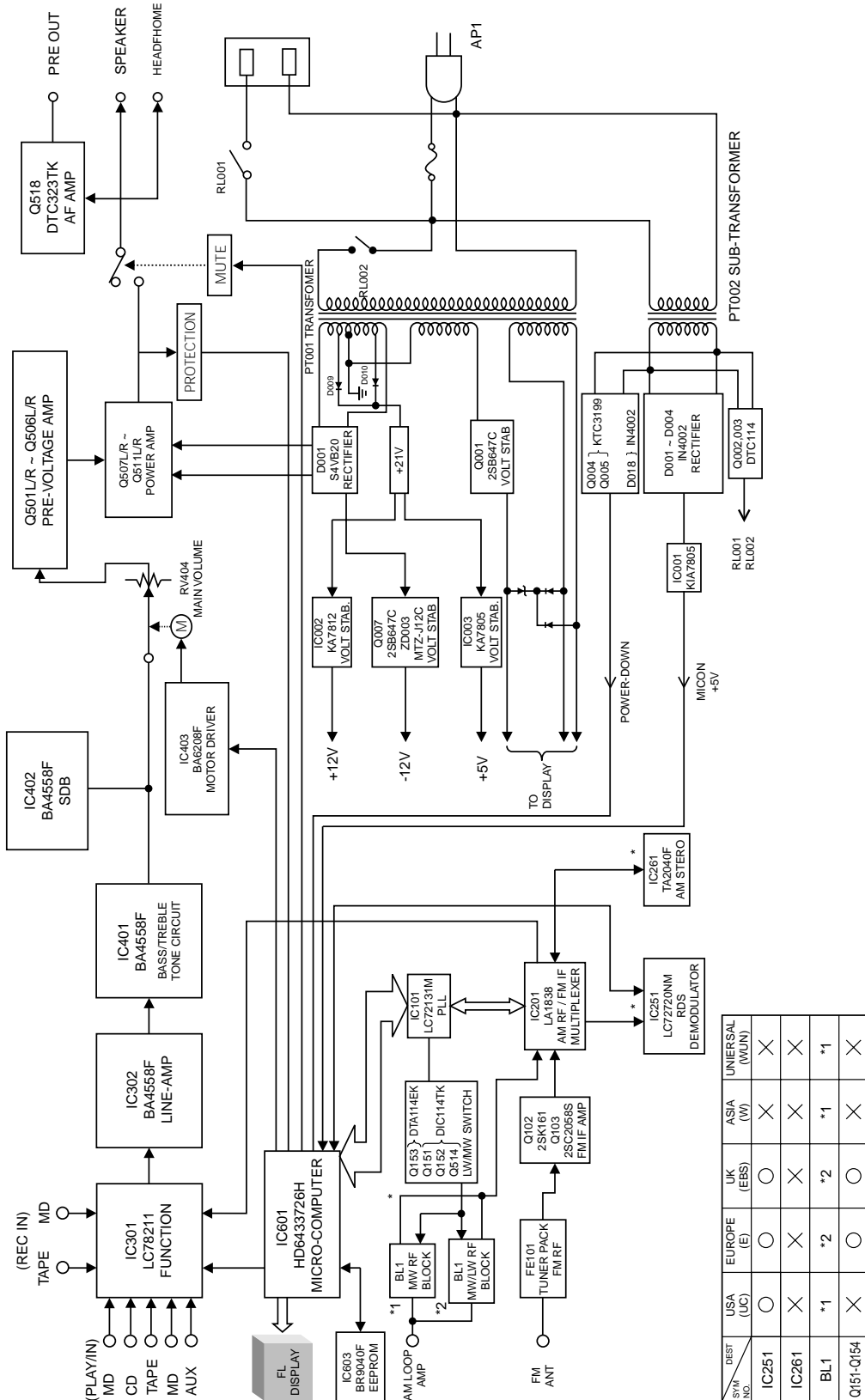


Soldering Side

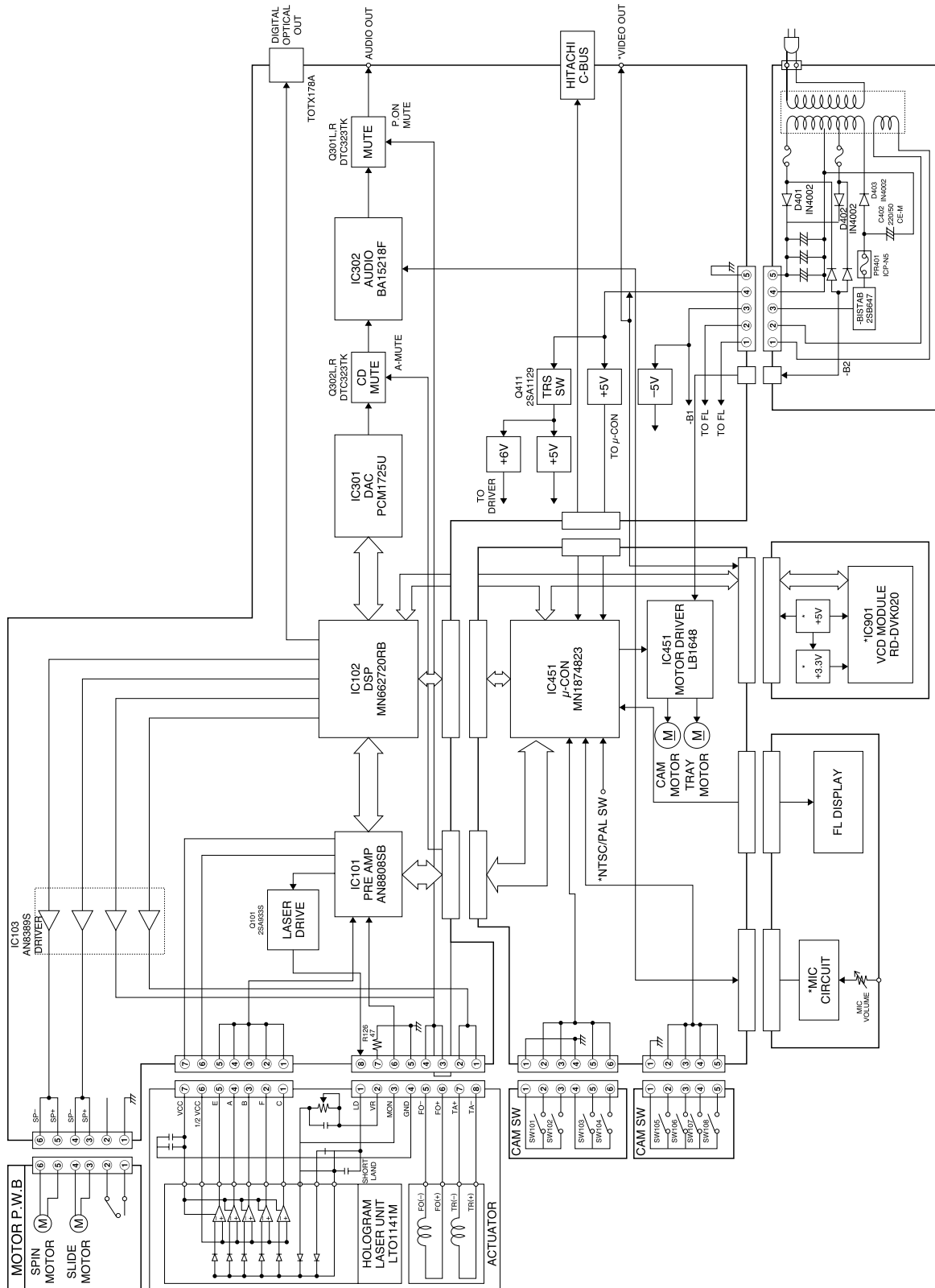


BLOCK DIAGRAM

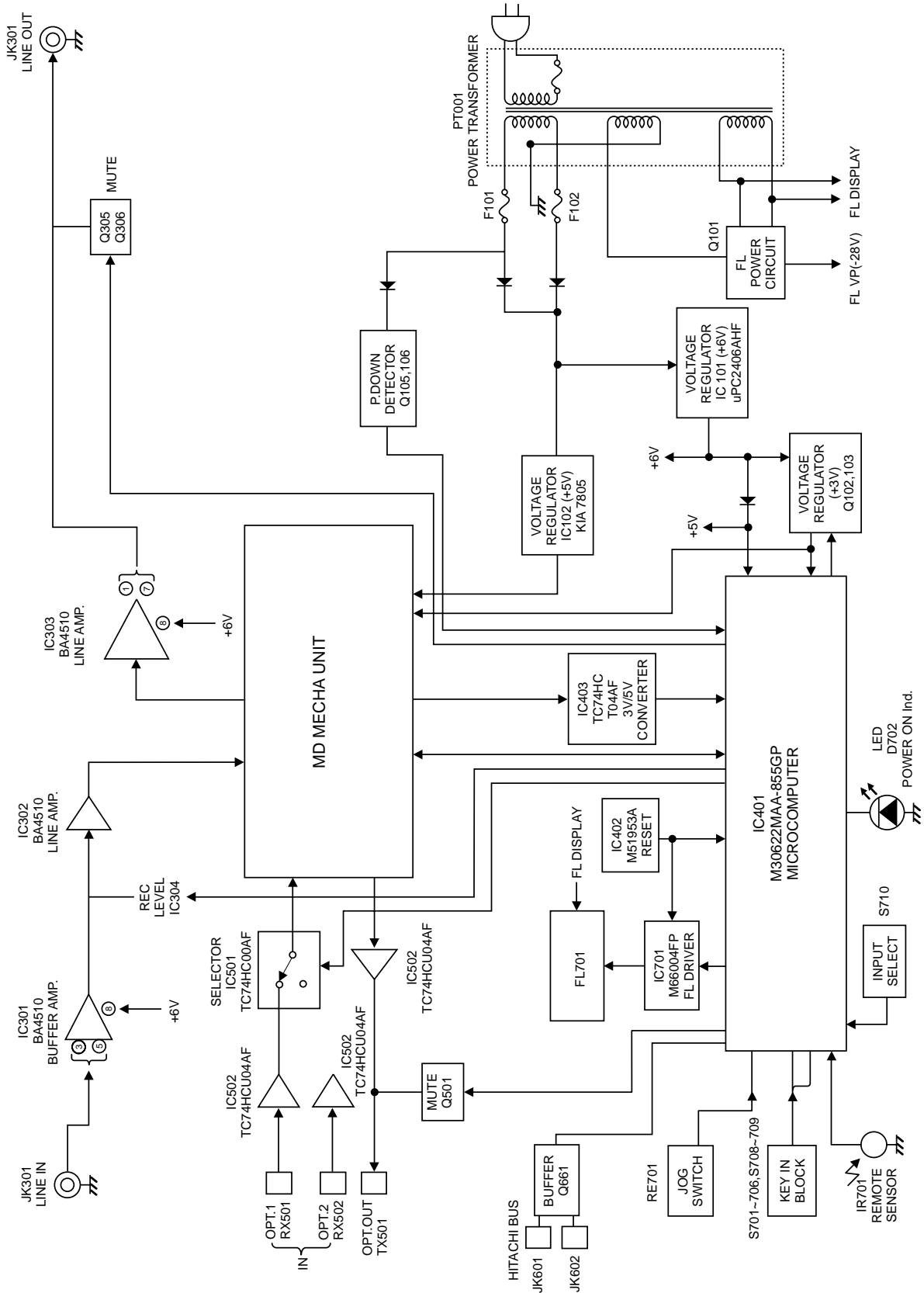
• AM-FM TUNER AMPLIFIER (HTA-R100)



• CD CHANGER (DA-R100)

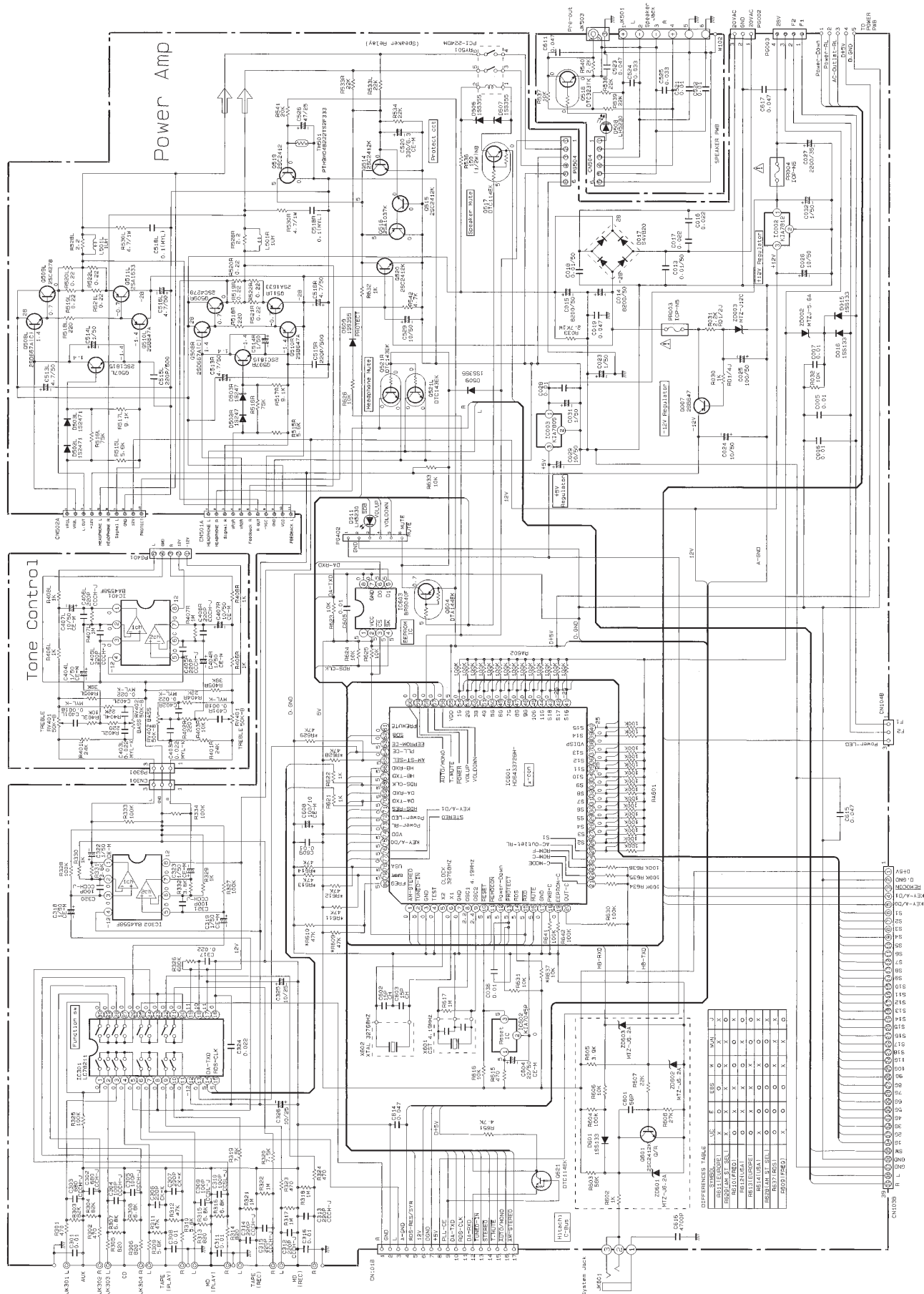


• MINI DISC RECORDER (HMD-R50)



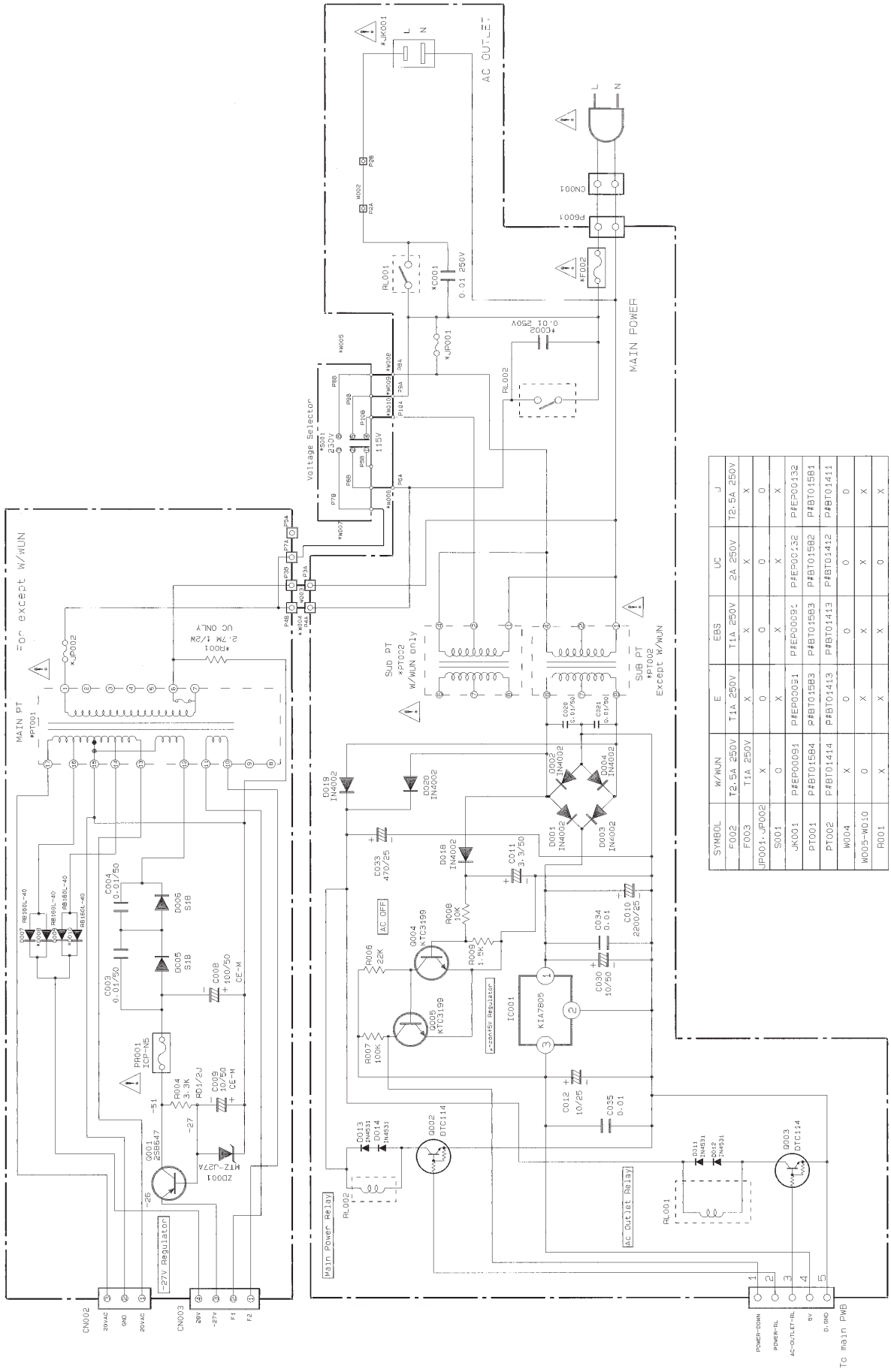
CIRCUIT DIAGRAM

- AM-FM TUNER AMPLIFIER (HTA-R100)



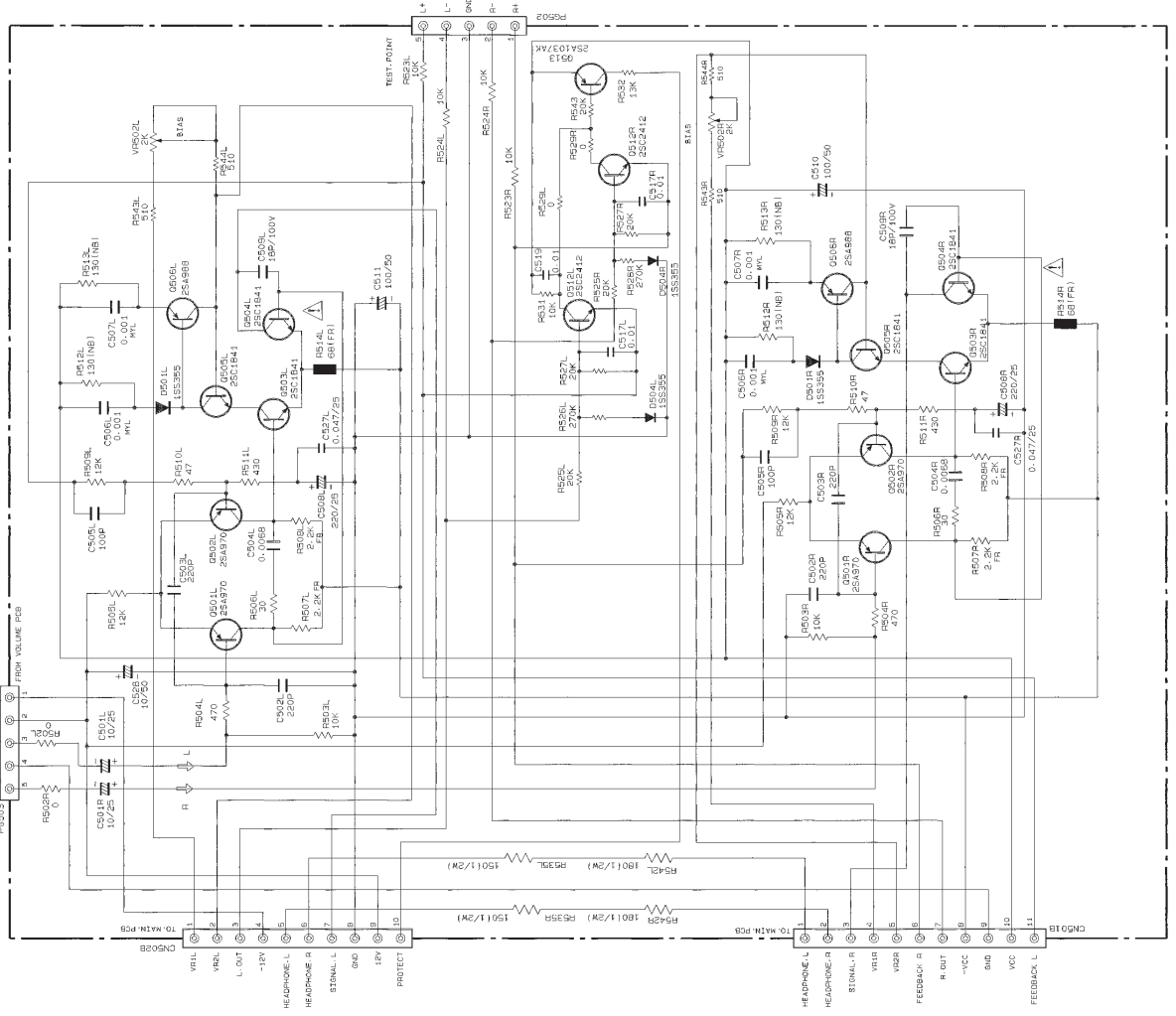
DIFFERENCES TABLE

REV.	DATE	BY	DESCRIPTION
1	01/01/80	J. S.	INITIAL DESIGN
2	02/15/80	J. S.	REVISION 1
3	03/10/80	J. S.	REVISION 2
4	04/05/80	J. S.	REVISION 3
5	05/01/80	J. S.	REVISION 4
6	06/01/80	J. S.	REVISION 5
7	07/01/80	J. S.	REVISION 6
8	08/01/80	J. S.	REVISION 7
9	09/01/80	J. S.	REVISION 8
10	10/01/80	J. S.	REVISION 9
11	11/01/80	J. S.	REVISION 10
12	12/01/80	J. S.	REVISION 11
13	01/01/81	J. S.	REVISION 12
14	02/01/81	J. S.	REVISION 13
15	03/01/81	J. S.	REVISION 14
16	04/01/81	J. S.	REVISION 15
17	05/01/81	J. S.	REVISION 16
18	06/01/81	J. S.	REVISION 17
19	07/01/81	J. S.	REVISION 18
20	08/01/81	J. S.	REVISION 19
21	09/01/81	J. S.	REVISION 20
22	10/01/81	J. S.	REVISION 21
23	11/01/81	J. S.	REVISION 22
24	12/01/81	J. S.	REVISION 23
25	01/01/82	J. S.	REVISION 24
26	02/01/82	J. S.	REVISION 25
27	03/01/82	J. S.	REVISION 26
28	04/01/82	J. S.	REVISION 27
29	05/01/82	J. S.	REVISION 28
30	06/01/82	J. S.	REVISION 29
31	07/01/82	J. S.	REVISION 30
32	08/01/82	J. S.	REVISION 31
33	09/01/82	J. S.	REVISION 32
34	10/01/82	J. S.	REVISION 33
35	11/01/82	J. S.	REVISION 34
36	12/01/82	J. S.	REVISION 35
37	01/01/83	J. S.	REVISION 36
38	02/01/83	J. S.	REVISION 37
39	03/01/83	J. S.	REVISION 38
40	04/01/83	J. S.	REVISION 39
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43	07/01/83	J. S.	REVISION 42
44	08/01/83	J. S.	REVISION 43
45	09/01/83	J. S.	REVISION 44
46	10/01/83	J. S.	REVISION 45
47	11/01/83	J. S.	REVISION 46
48	12/01/83	J. S.	REVISION 47
49	01/01/84	J. S.	REVISION 48
50	02/01/84	J. S.	REVISION 49
51	03/01/84	J. S.	REVISION 50
52	04/01/84	J. S.	REVISION 51
53	05/01/84	J. S.	REVISION 52
54	06/01/84	J. S.	REVISION 53
55	07/01/84	J. S.	REVISION 54
56	08/01/84	J. S.	REVISION 55
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58	10/01/84	J. S.	REVISION 57
59	11/01/84	J. S.	REVISION 58
60	12/01/84	J. S.	REVISION 59
61	01/01/85	J. S.	REVISION 60
62	02/01/85	J. S.	REVISION 61
63	03/01/85	J. S.	REVISION 62
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67	07/01/85	J. S.	REVISION 66
68	08/01/85	J. S.	REVISION 67
69	09/01/85	J. S.	REVISION 68
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71	11/01/85	J. S.	REVISION 70
72	12/01/85	J. S.	REVISION 71
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74	02/01/86	J. S.	REVISION 73
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79	07/01/86	J. S.	REVISION 78
80	08/01/86	J. S.	REVISION 79
81	09/01/86	J. S.	REVISION 80
82	10/01/86	J. S.	REVISION 81
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86	02/01/87	J. S.	REVISION 85
87	03/01/87	J. S.	REVISION 86
88	04/01/87	J. S.	REVISION 87
89	05/01/87	J. S.	REVISION 88
90	06/01/87	J. S.	REVISION 89
91	07/01/87	J. S.	REVISION 90
92	08/01/87	J. S.	REVISION 91
93	09/01/87	J. S.	REVISION 92
94	10/01/87	J. S.	REVISION 93
95	11/01/87	J. S.	REVISION 94
96	12/01/87	J. S.	REVISION 95
97	01/01/88	J. S.	REVISION 96
98	02/01/88	J. S.	REVISION 97
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100	04/01/88	J. S.	REVISION 99
101	05/01/88	J. S.	REVISION 100

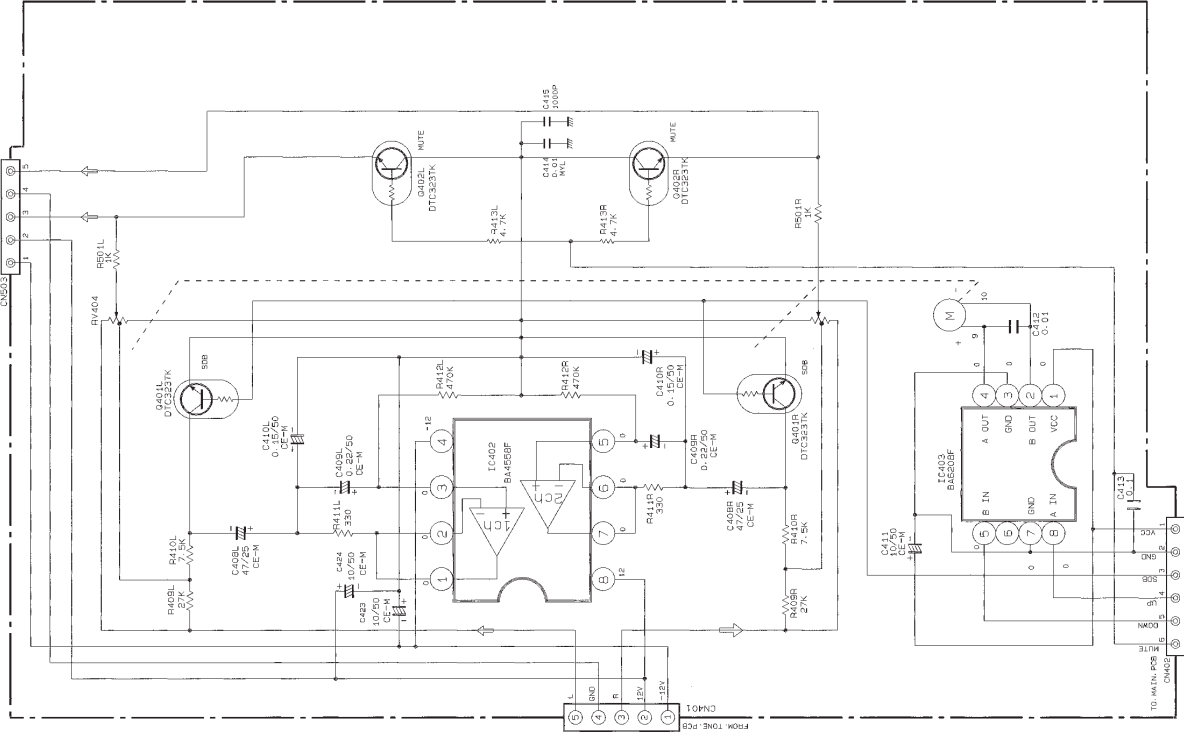


SYMBOL	W/WUN	E	EBS	UC	J
F002	T2.5A 250V	T1A 250V	X	2A 250V	T2.5A 250V
F003	T1A 250V	X	X	X	X
JR001-JR002	X	0	0	0	0
S001	0	X	X	X	X
JK001	P#EP00091	P#EP00031	P#EP00051	P#EP00132	P#EP00132
PT001	P#BT015B4	P#BT015B3	P#BT015B3	P#BT015B2	P#BT015B1
PT002	P#BT01414	P#BT01413	P#BT01413	P#BT01412	P#BT01411
W004	X	0	0	0	0
W005-W010	0	X	X	X	X
R001	X	X	X	0	X

Pre - Voltage Amp.

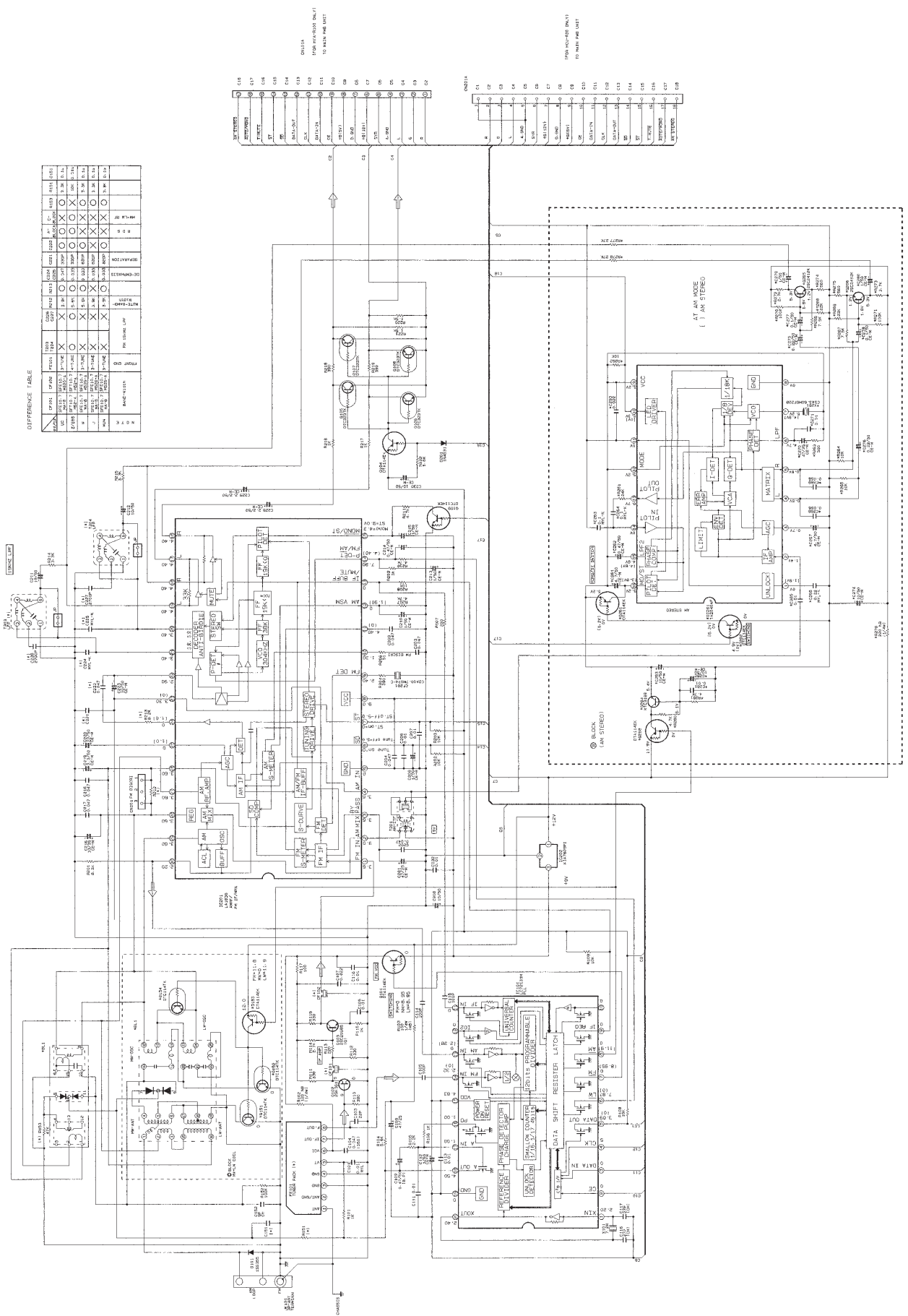


Volume Control

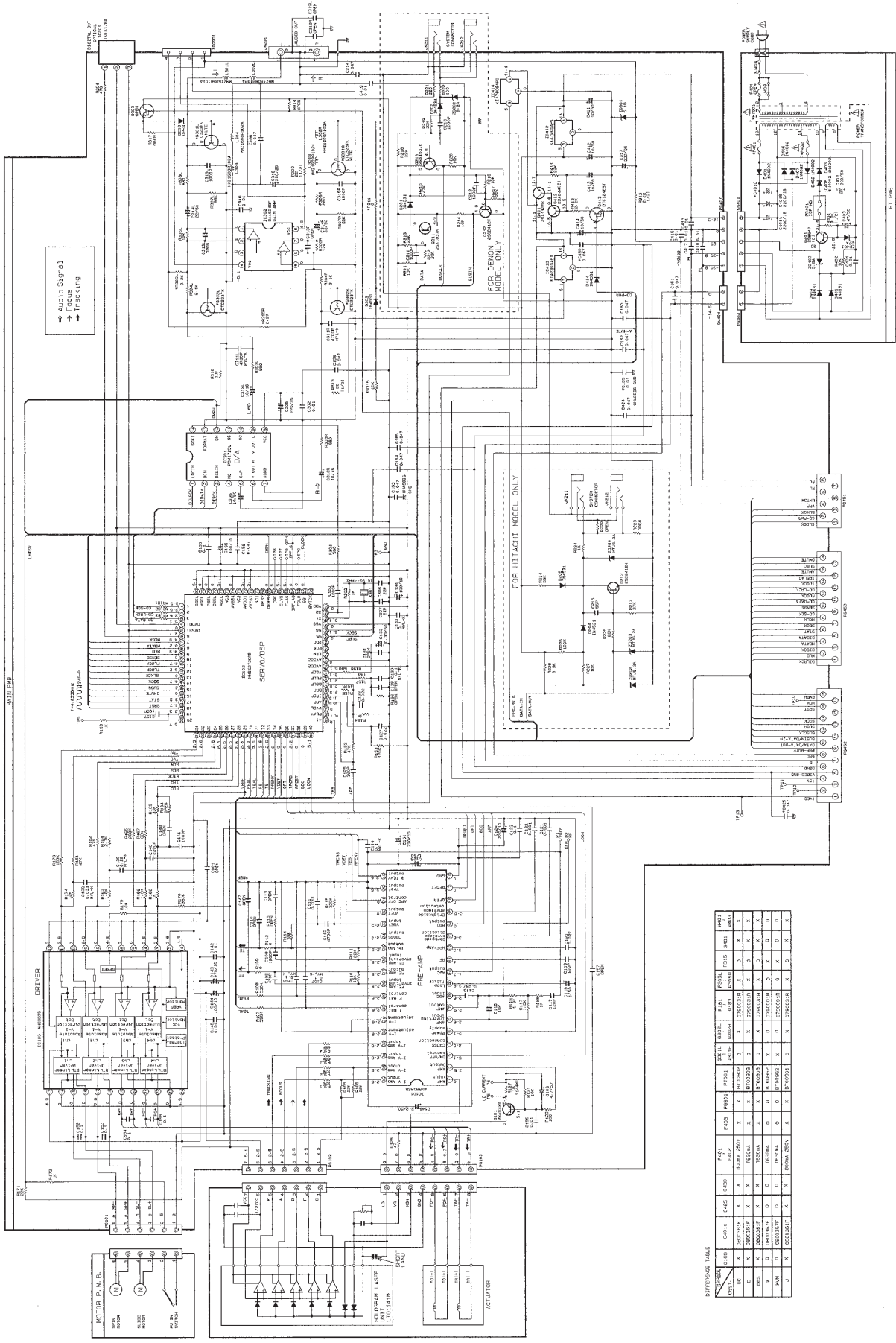


DIFFERENCE TABLE

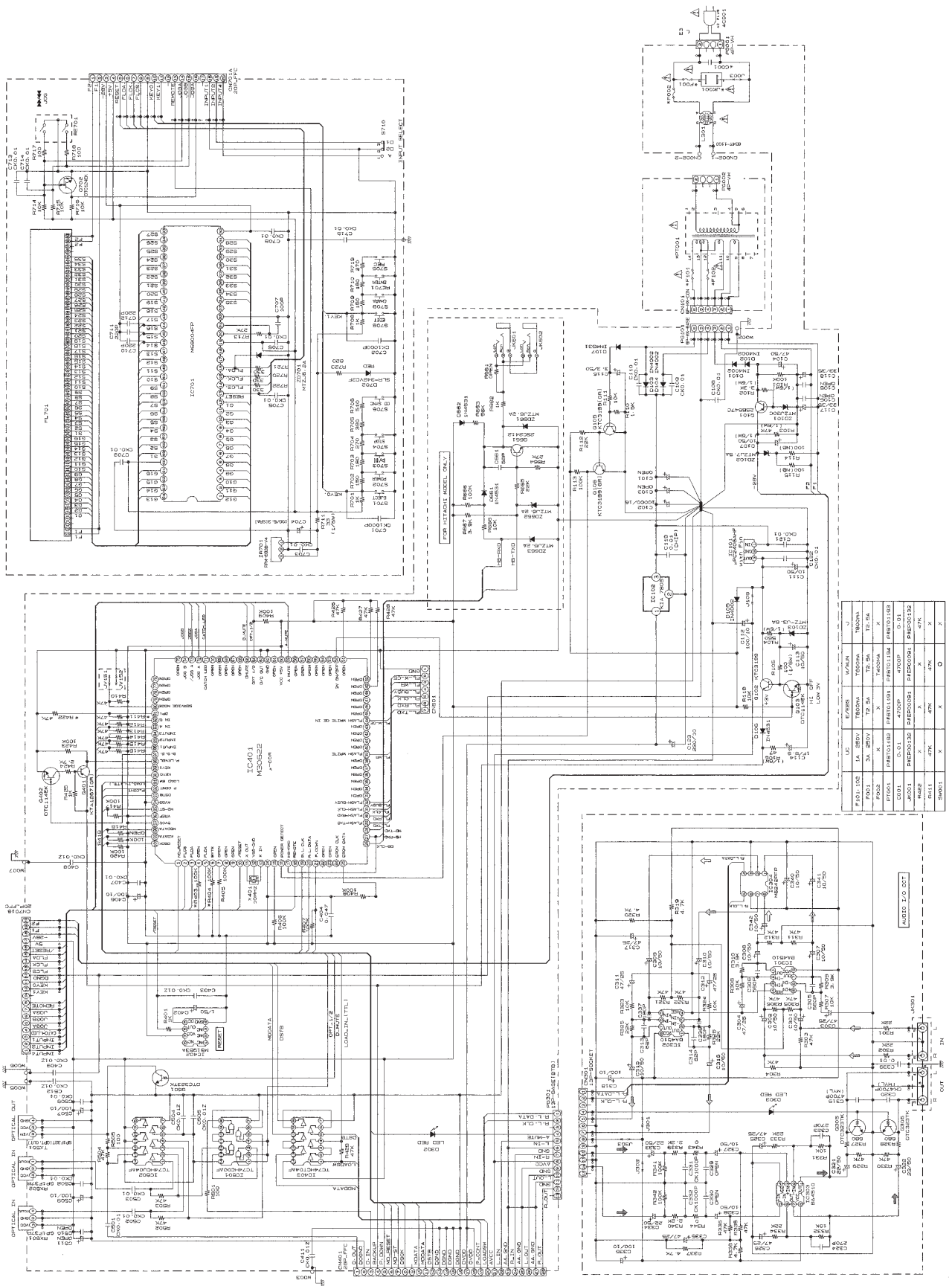
MODEL	MANUFACTURE	FORMER CD	PH. SYSTEM	MTC-M40	COMPRESSOR	OPERATION	RECORDING	REPRODUCING	REVERSE	REPEAT	STOP	SKIP	SEARCH	STOP
AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300
AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300	AX-F300



• CD CHANGER (DA-R100)

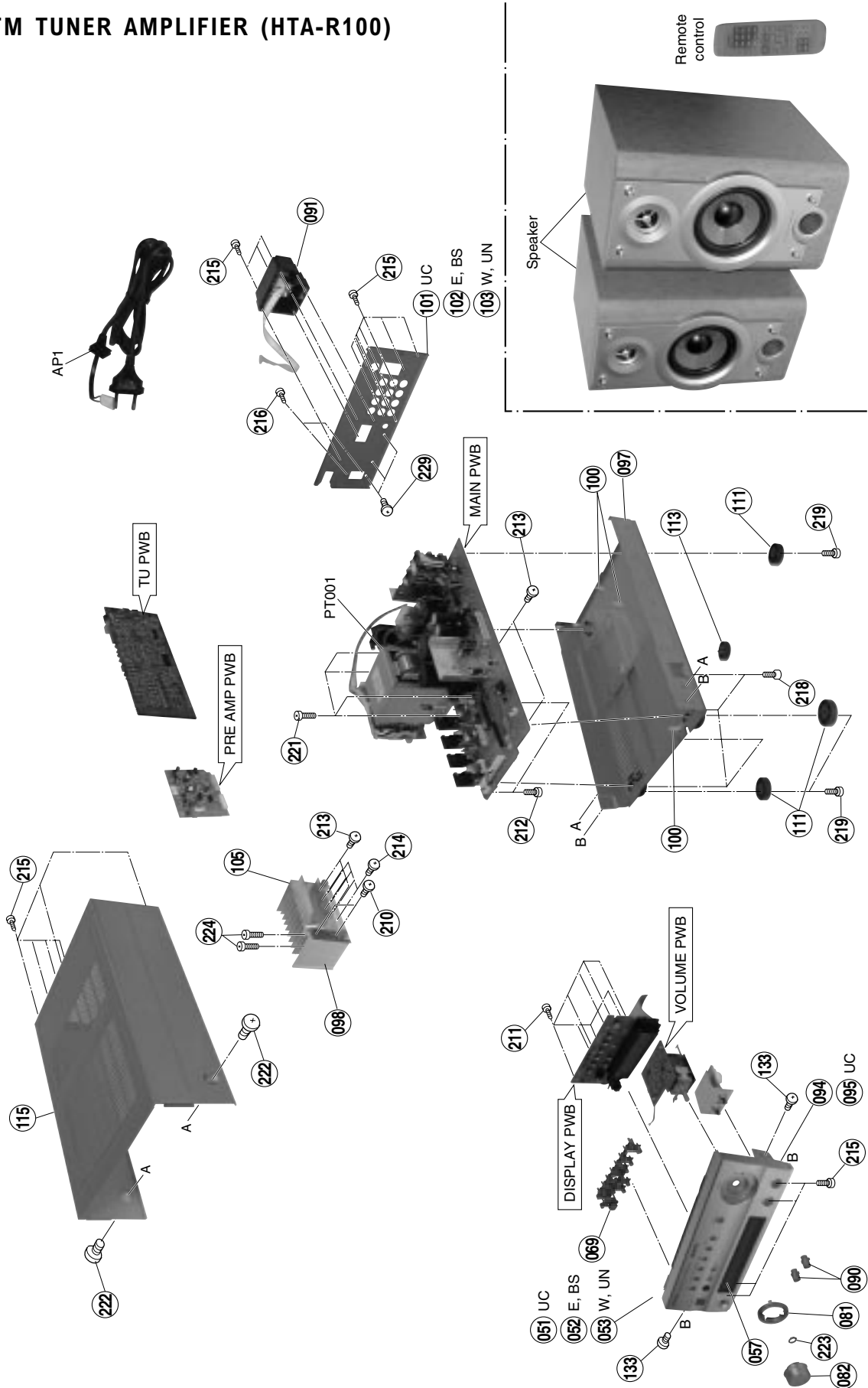


• MINI DISC RECORDER (HMD-R50)

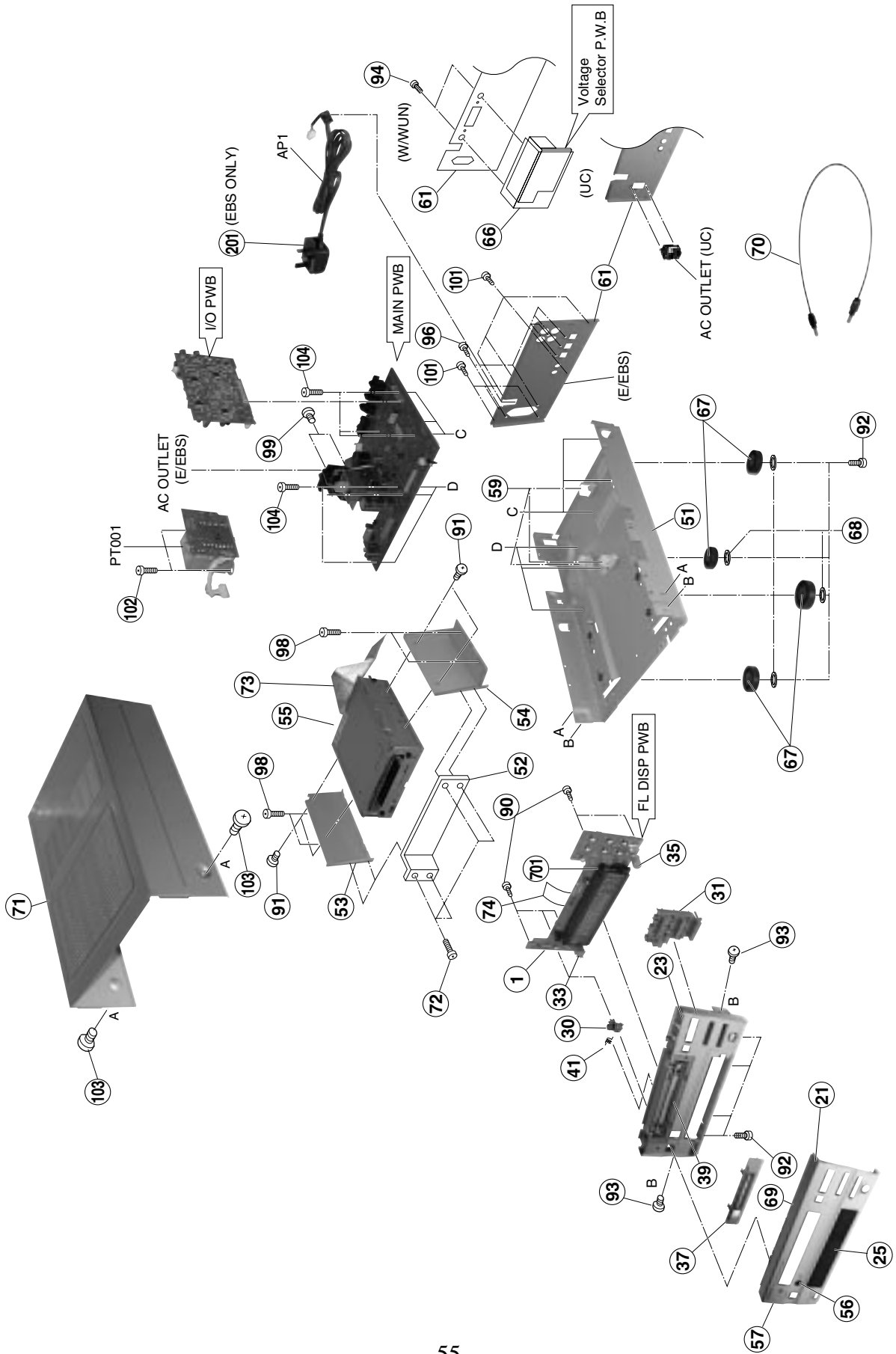


EXPLODED VIEW

• AM-FM TUNER AMPLIFIER (HTA-R100)



• MINI DISC RECORDER (HMD-R50)
EXPLODED VIEW



**THE UPDATED PARTS LIST
FOR THIS MODEL IS
AVAILABLE ON ESTA**

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