

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

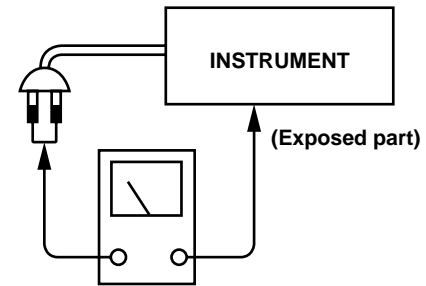
September 2000

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 |
| Woofers: | 10 cm ∞ 1 |
| Tweeters: | 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 |

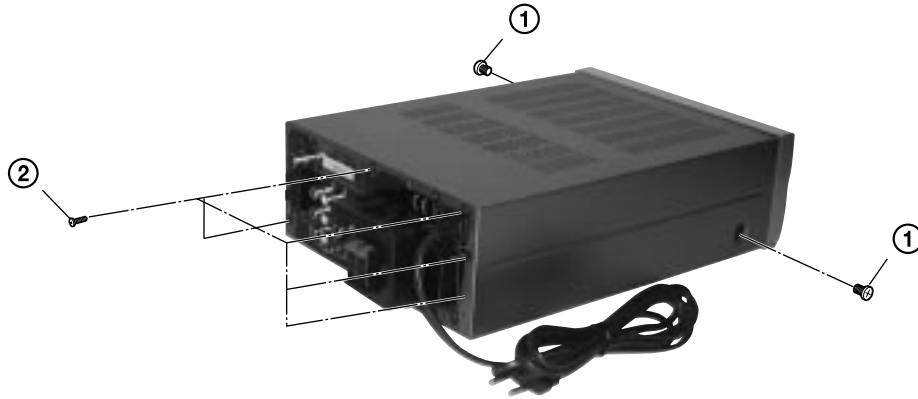
Specifications are subject to change or performance improvement without notice.

SERVICE POINTS

• AM-FM TUNER AMPLIFIER (HTA-R100)

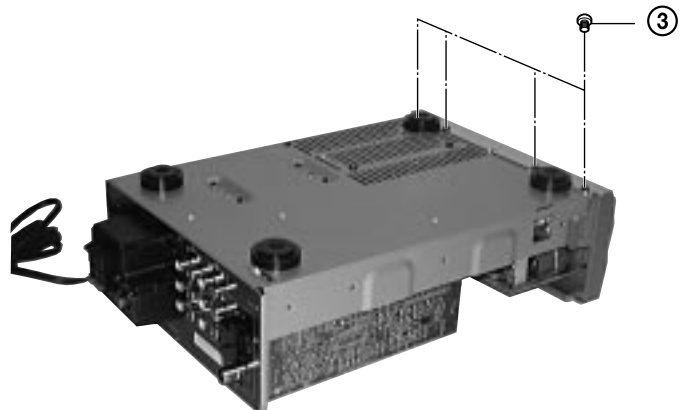
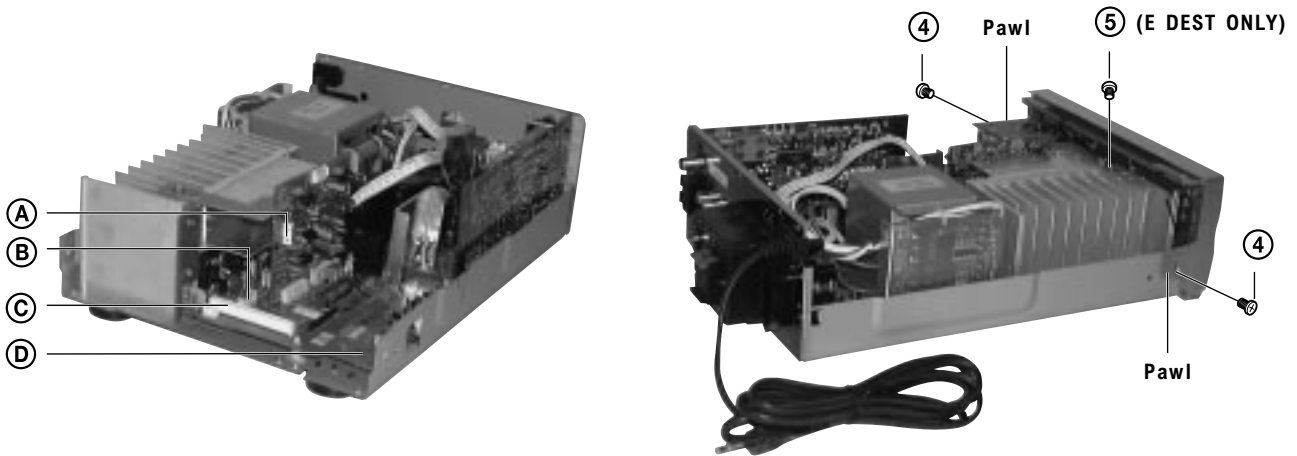
1. Removal of Cover

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



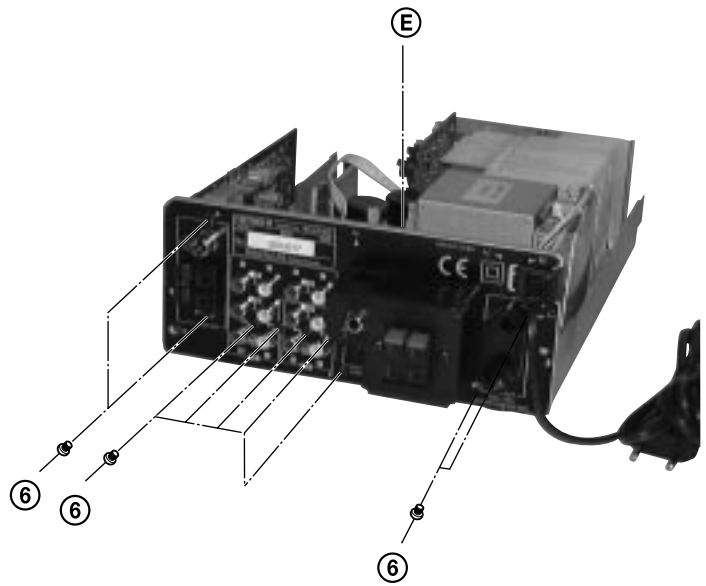
2. Removal of Front Panel

- (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.



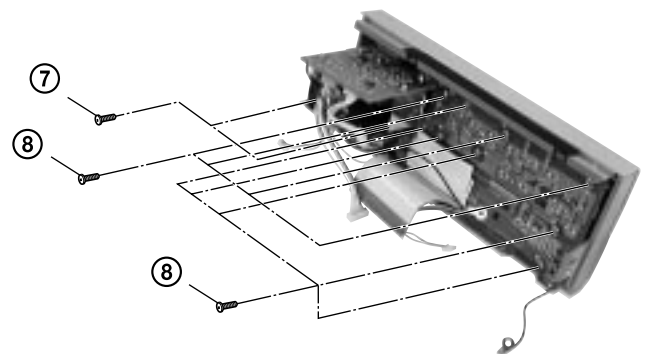
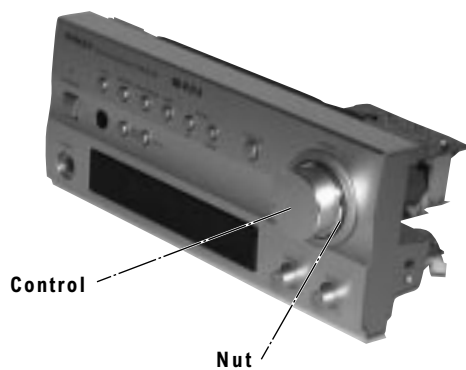
3. Removal of Rear Panel

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



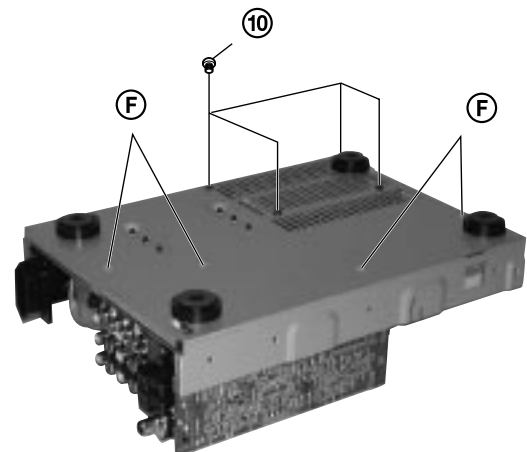
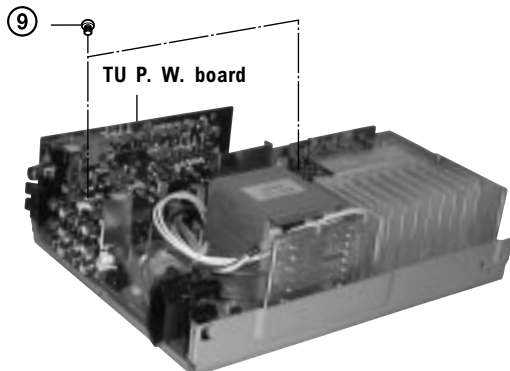
4. Removal of Front P. W. Board

- (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

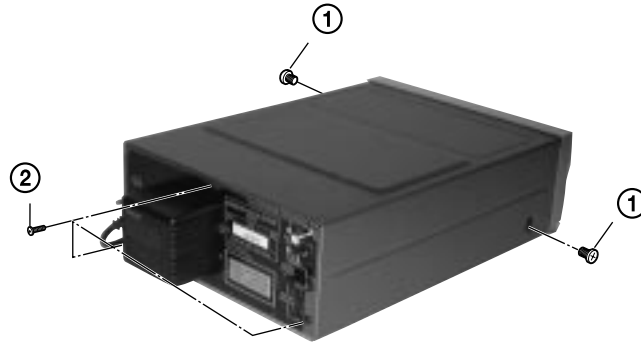
- (1) Lift up the TU P. W. board and remove it from the main P. W. board.
- (2) Remove 2 screws ⑨ from the top side of the main P. W. board.
- (3) Remove 4 screws ⑩ from the bottom side of the chassis.
- (4) Remove the 4 P. W. board holders ⑥ from the chassis via the bottom side of the chassis.



• **CD CHANGER (DA-R100)**

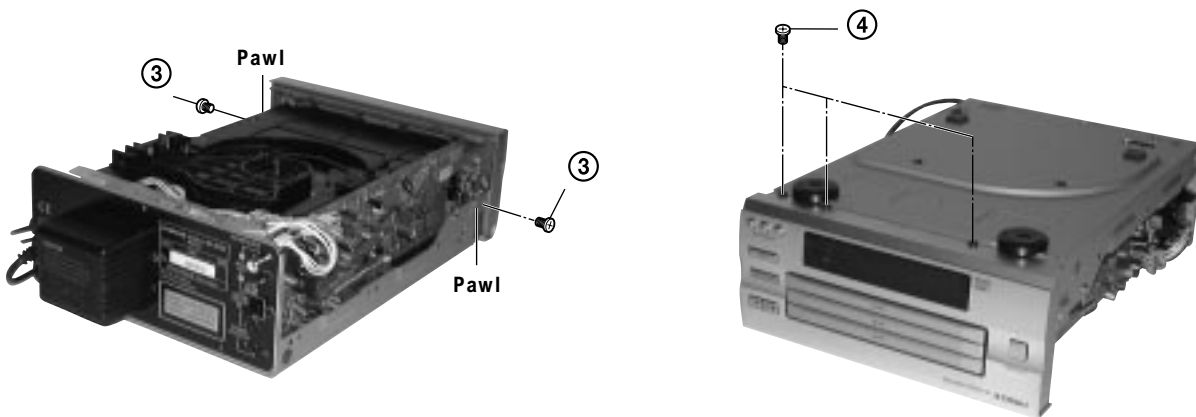
1. Removal of Cover

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



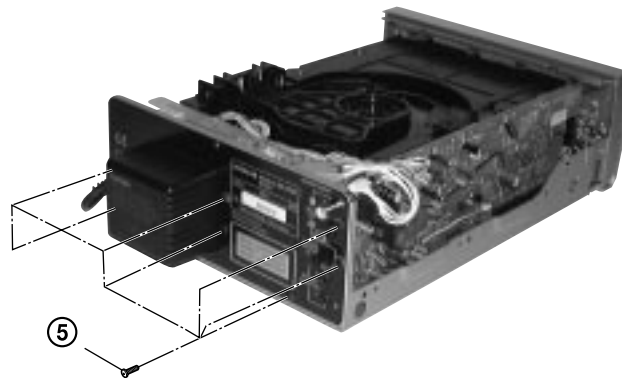
2. Removal of Front Panel

- (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.



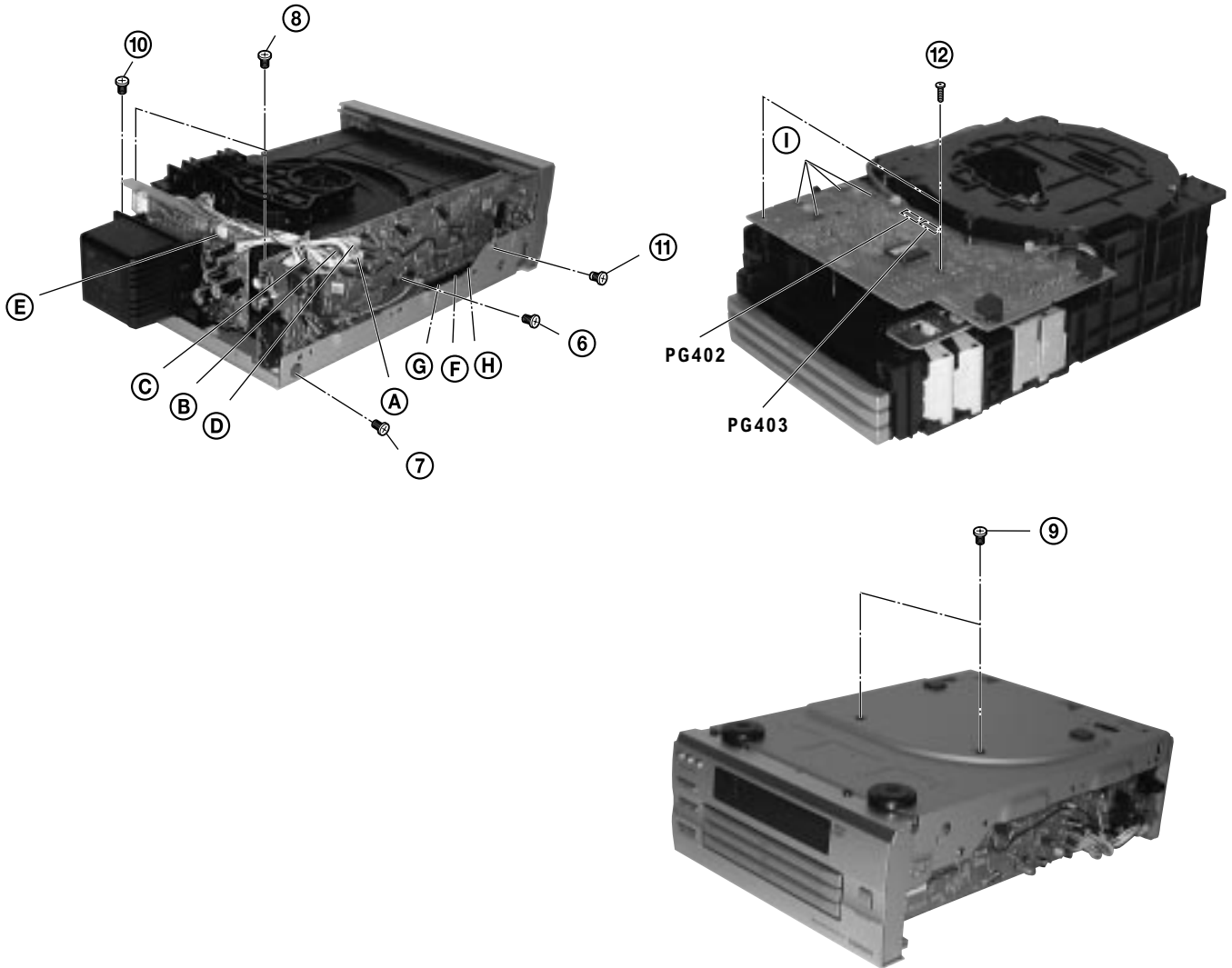
3. Removal of Rear Panel

- (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

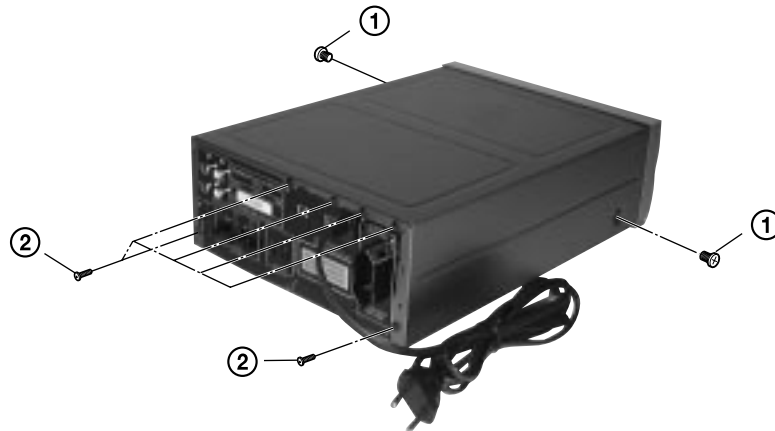
- (1) Remove one each of screws ⑥ and ⑦ from the main P.W. board on the side.
- (2) Remove 2 screws ⑧ from the top side of the mechanical unit.
- (3) Remove 2 screws ⑨ from the bottom side of the chassis.
- (4) Remove the connectors ①, ②, ③ and ④ of the main P.W. board.
- (5) Remove the connector ⑤ of 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)**

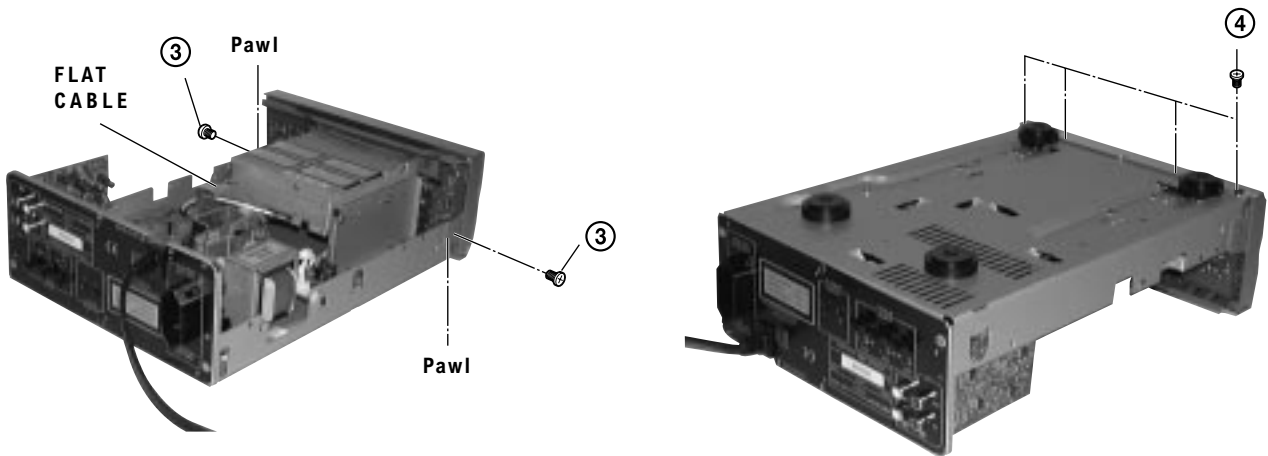
1. Removal of Cover

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



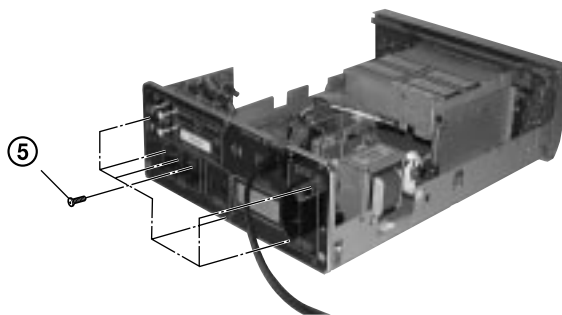
2. Removal of Front Panel

- (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.



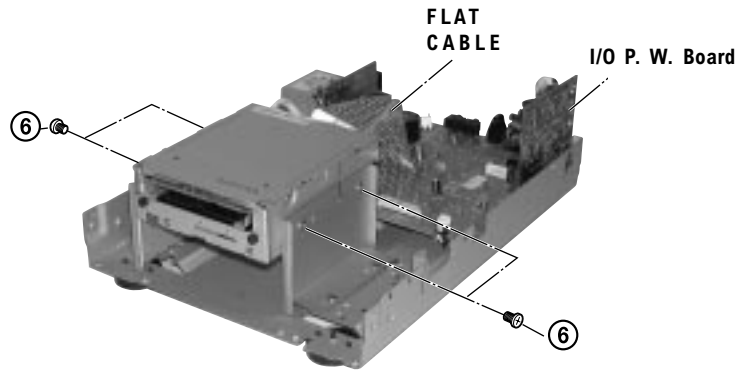
3. Removal of Rear Panel

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



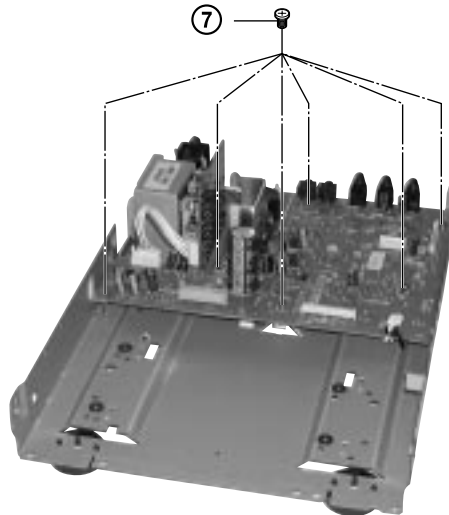
4. Removal of MD Mechanical-Unit Assembly

- (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

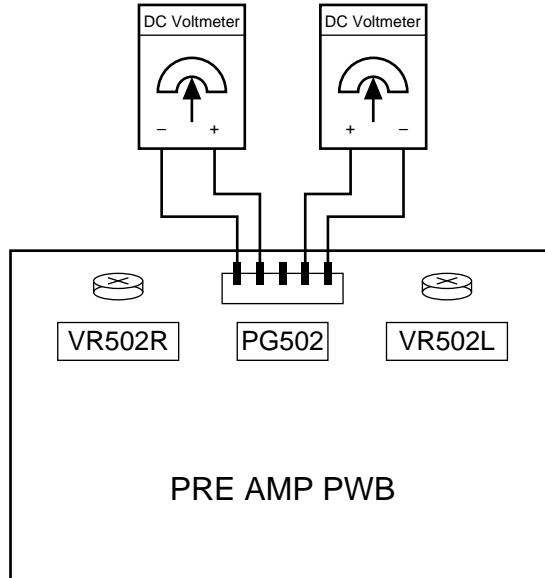
Before adjustments, perform the following setting in the receiver section (HTA-R100).

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

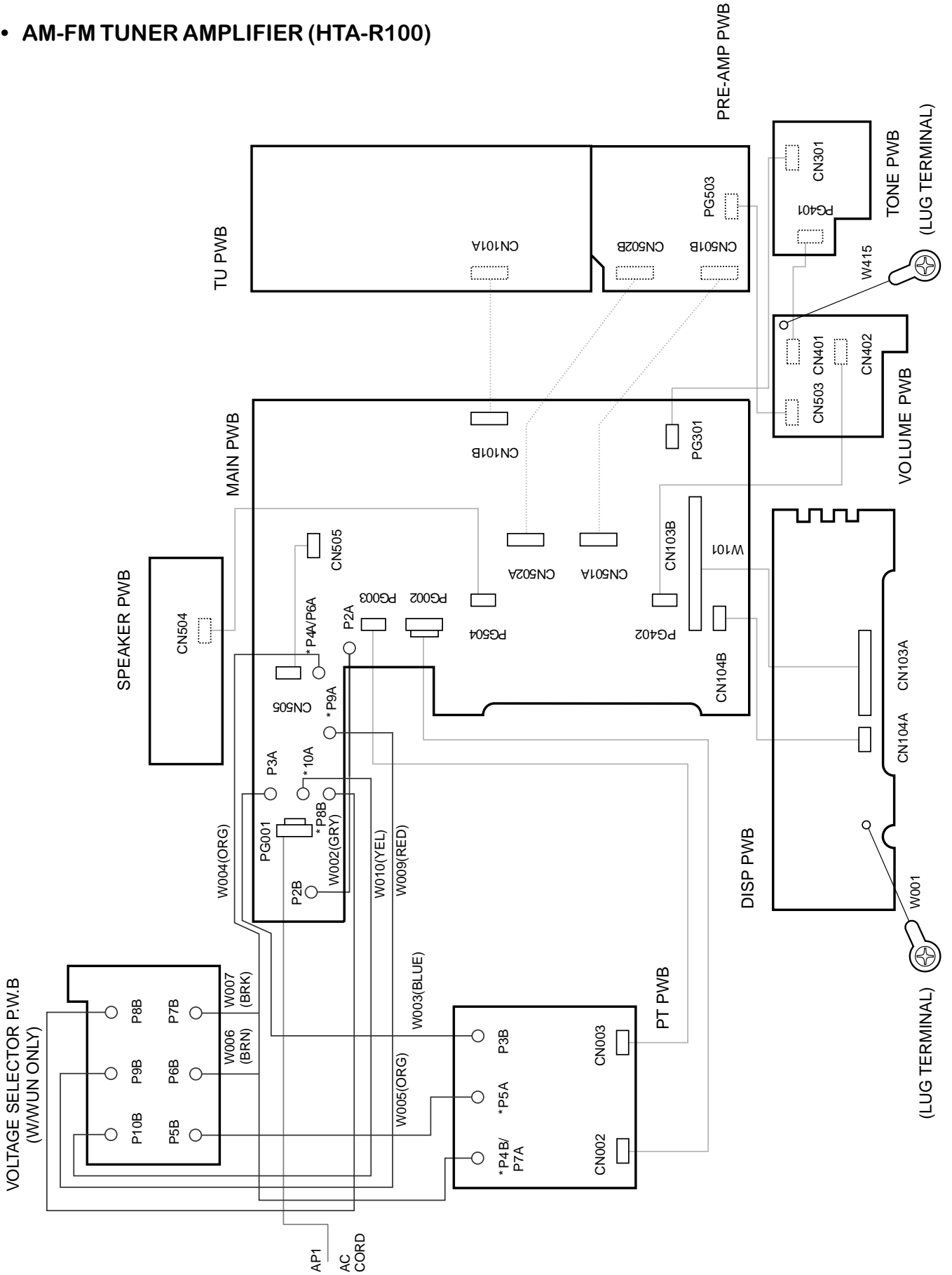
1. Idle Current Adjustment

- (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.

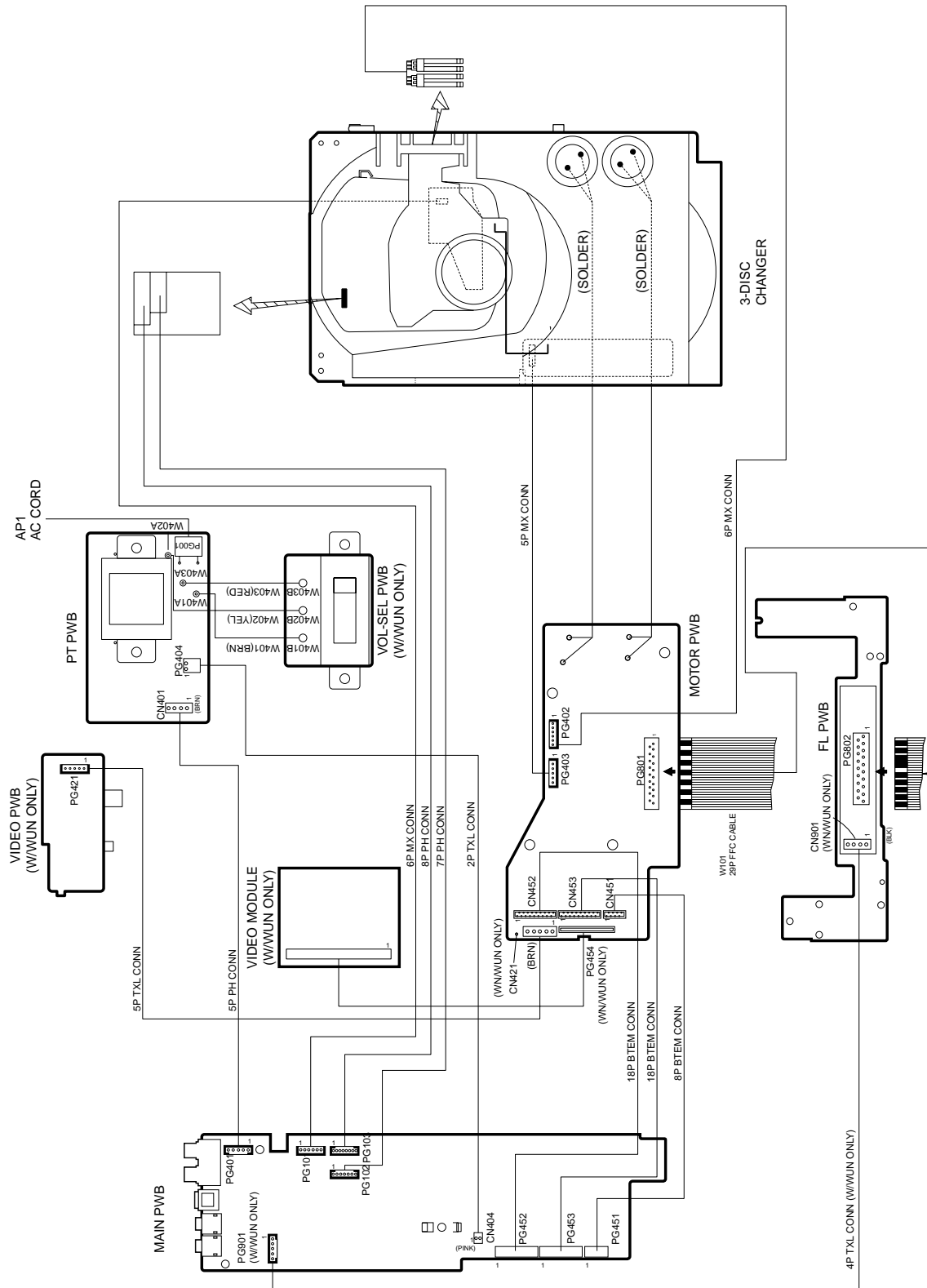


WIRING DIAGRAMS

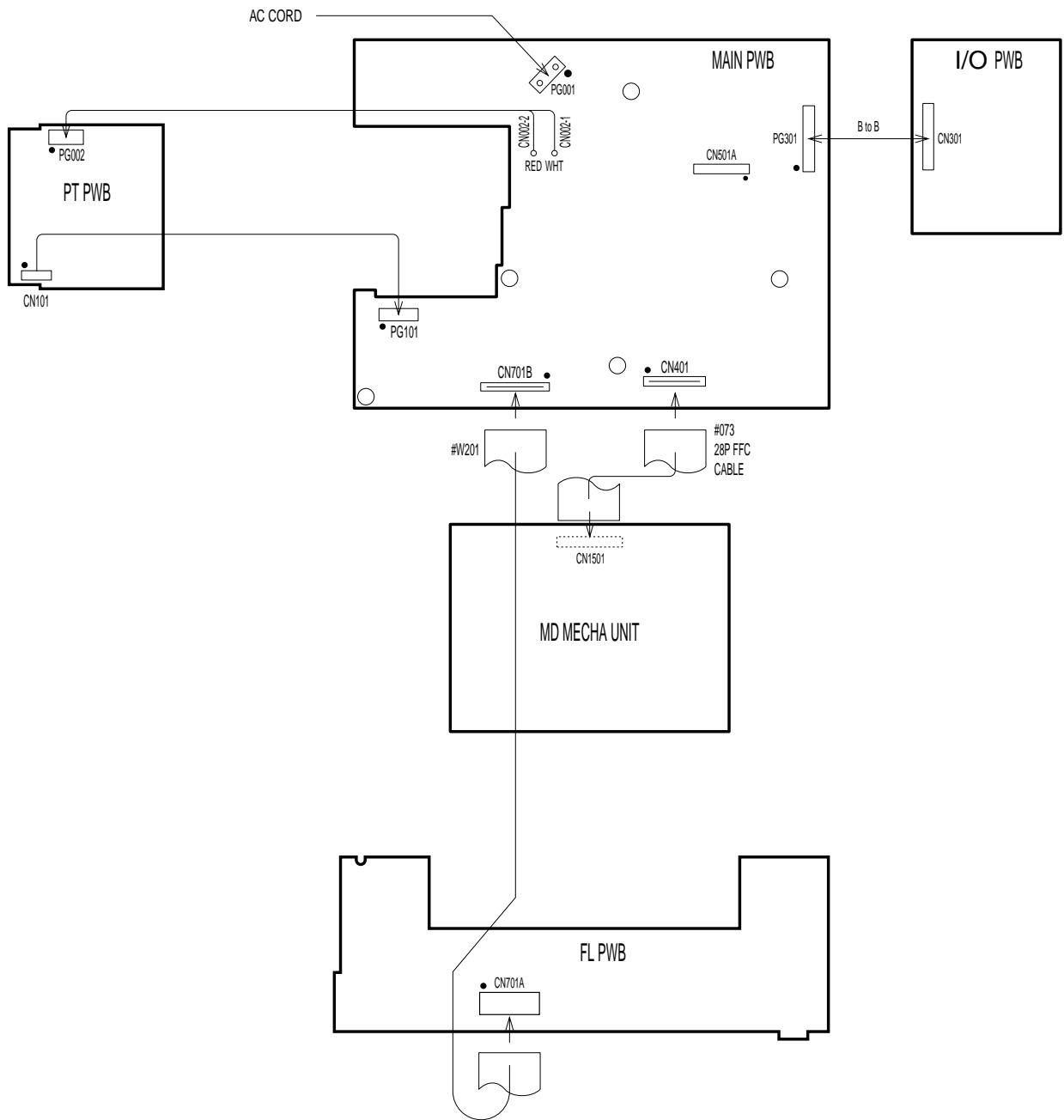
• AM-FM TUNER AMPLIFIER (HTA-R100)



• CD CHANGER (DA-R100)

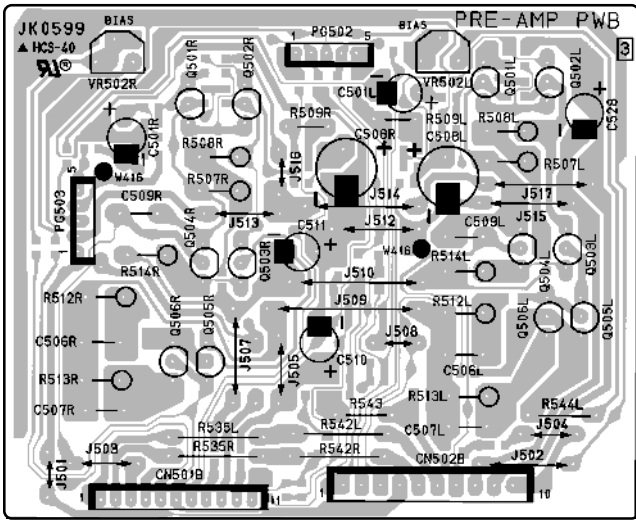


• MINI DISC RECORDER (HMD-R50)

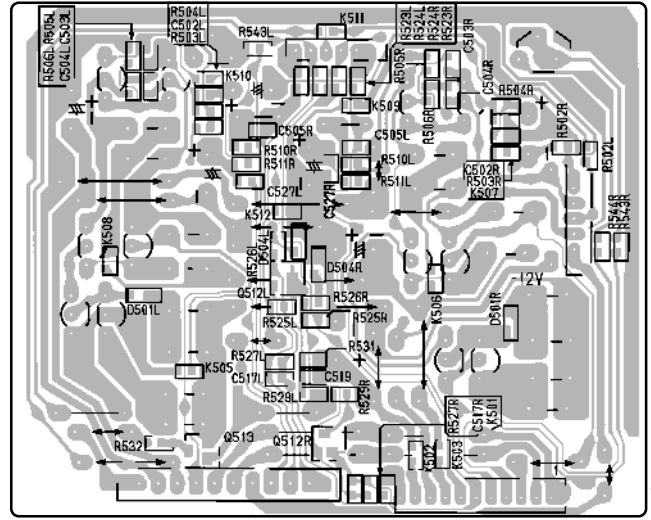


PRE-AMP PWB

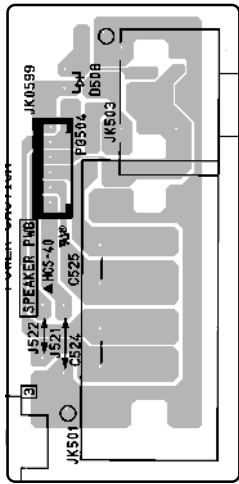
Component Side



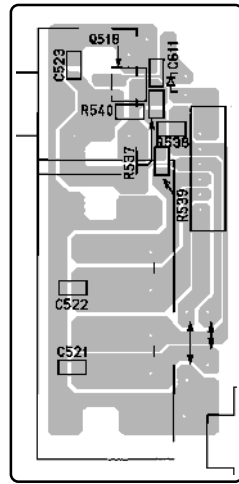
Soldering Side



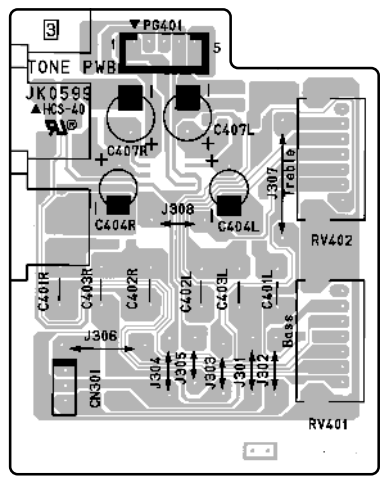
SP PWB
Component Side



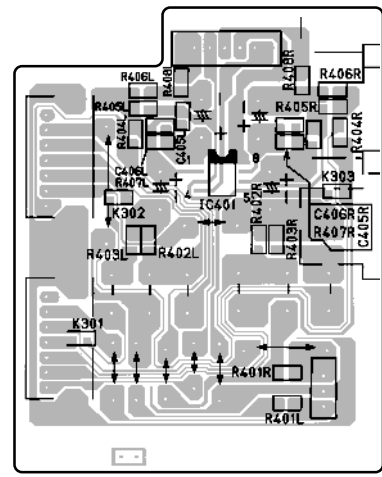
Soldering Side



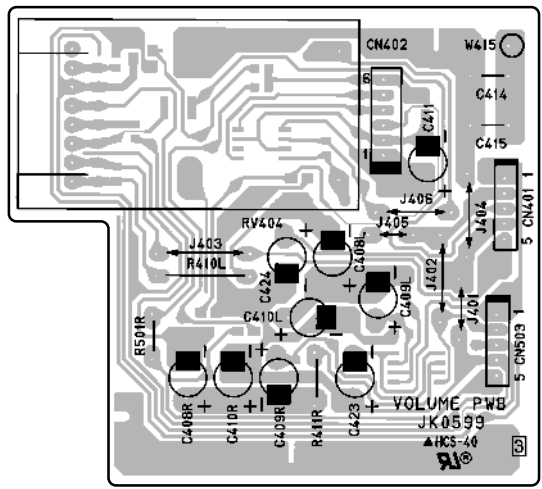
TONE PWB
Component Side



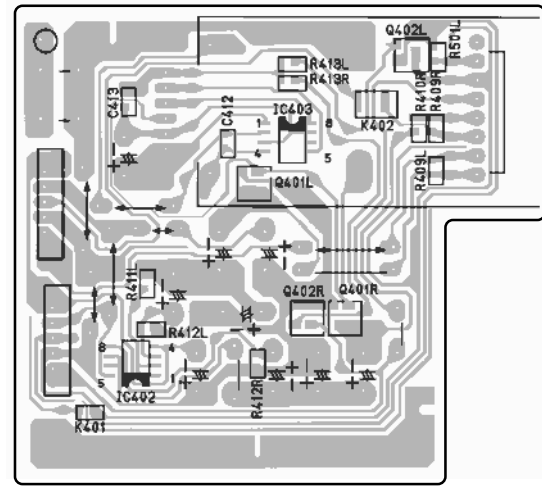
Soldering Side



VOL PWB
Component Side

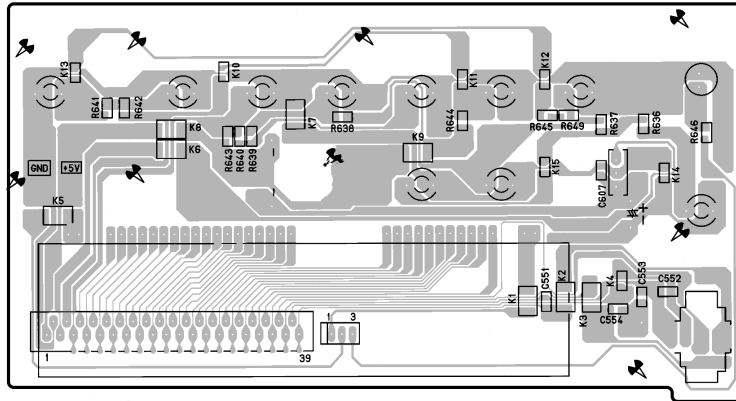


Soldering Side

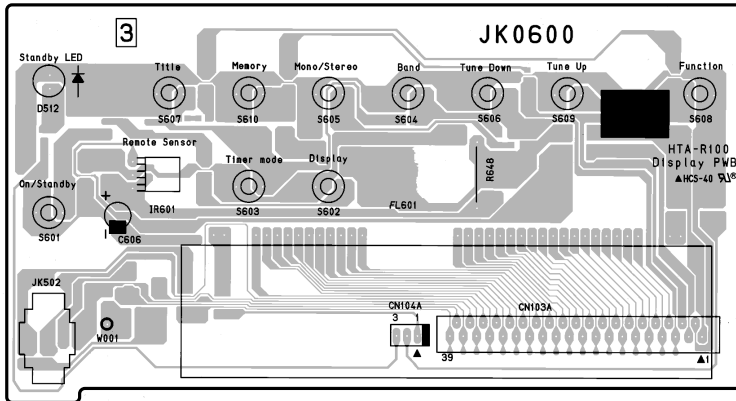


DISPLAY PWB

Soldering Side

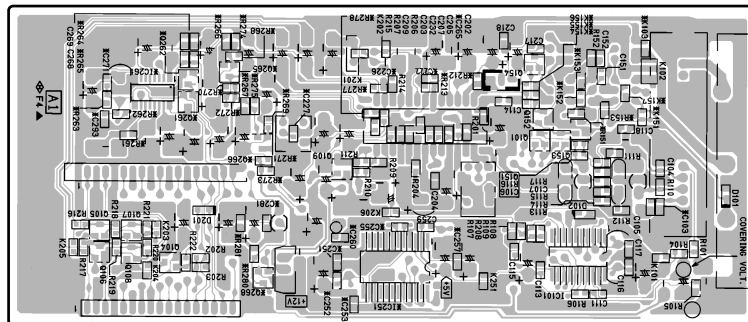


Component Side



TU PWB

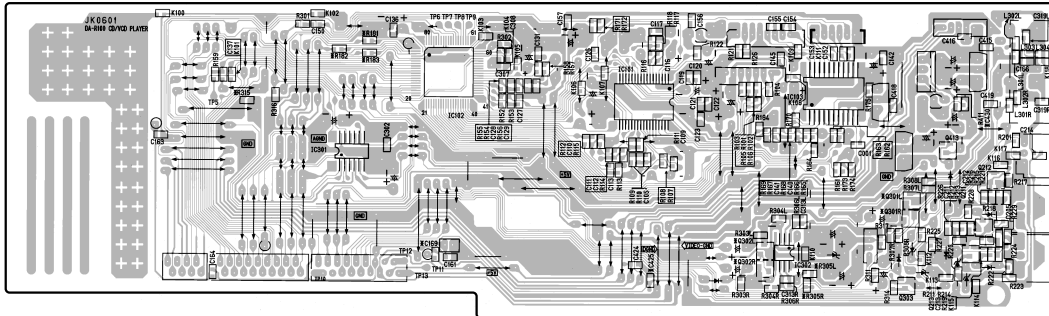
Soldering Side



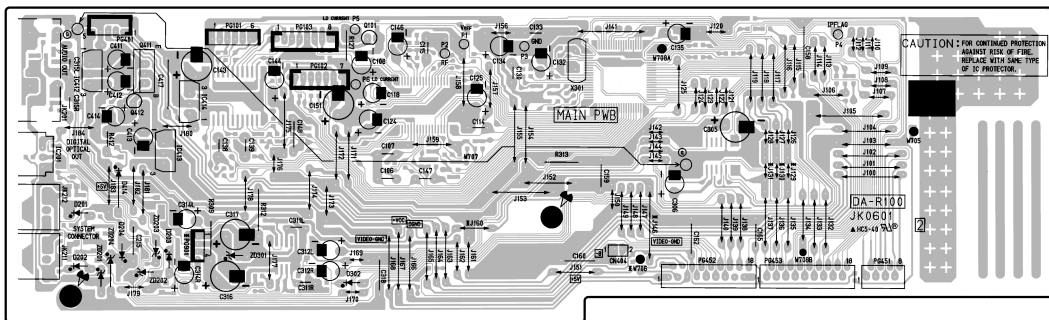
• CD CHANGER (DA-R100)

MAIN PWB

Soldering Side

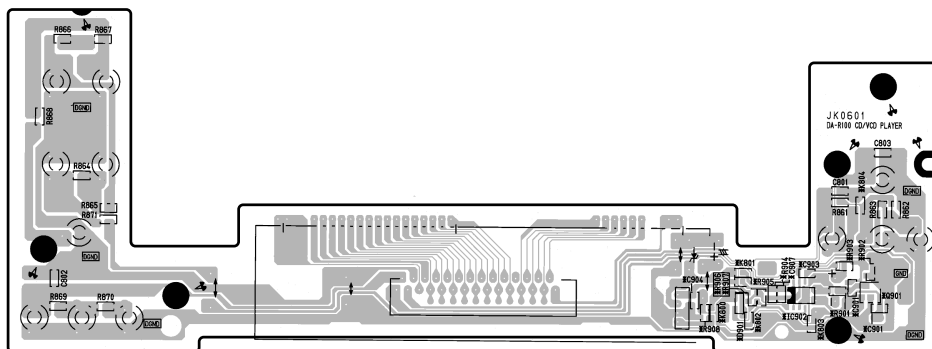


Component Side

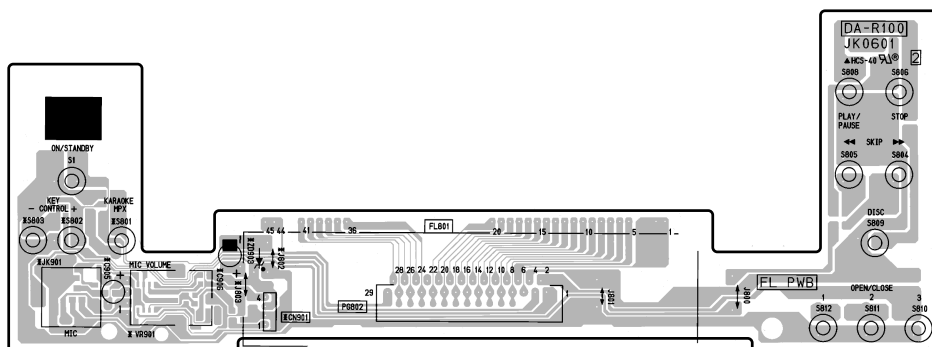


FL PWB

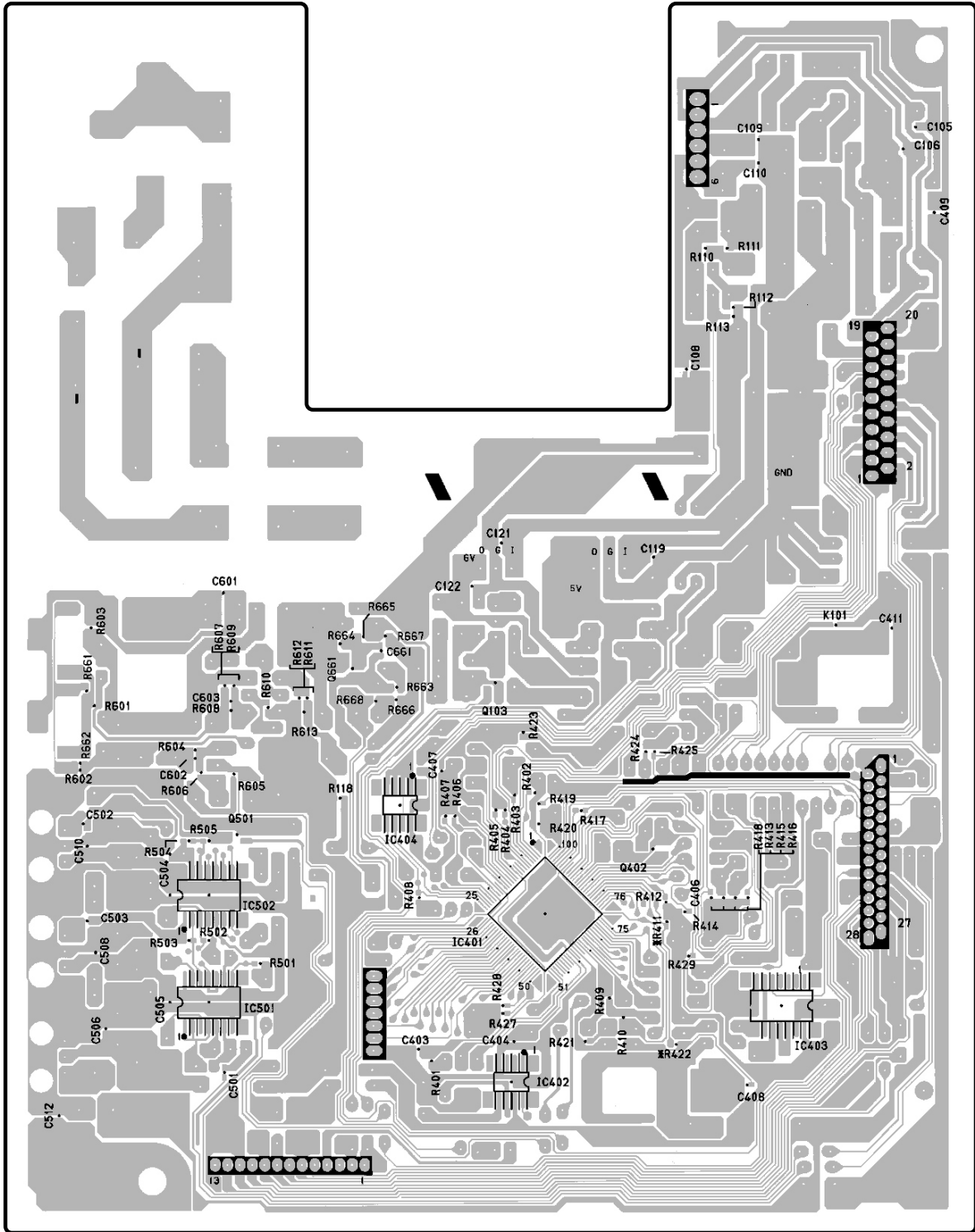
Soldering Side



Component Side

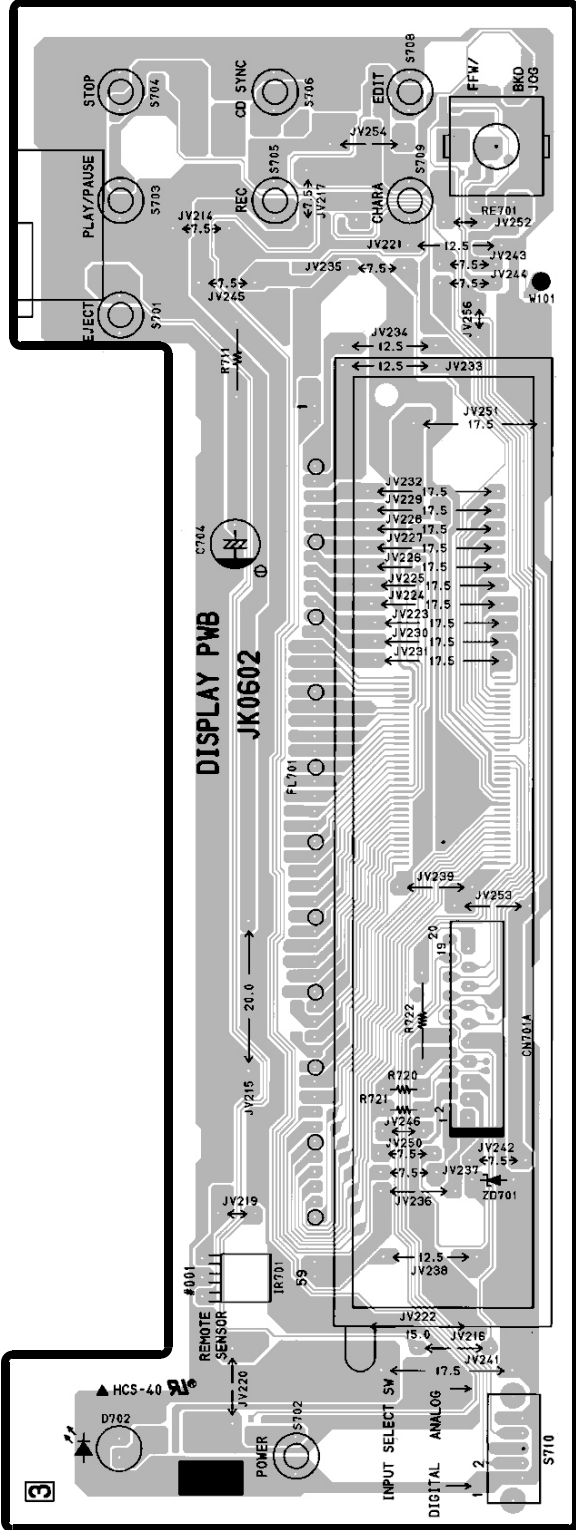


Soldering Side

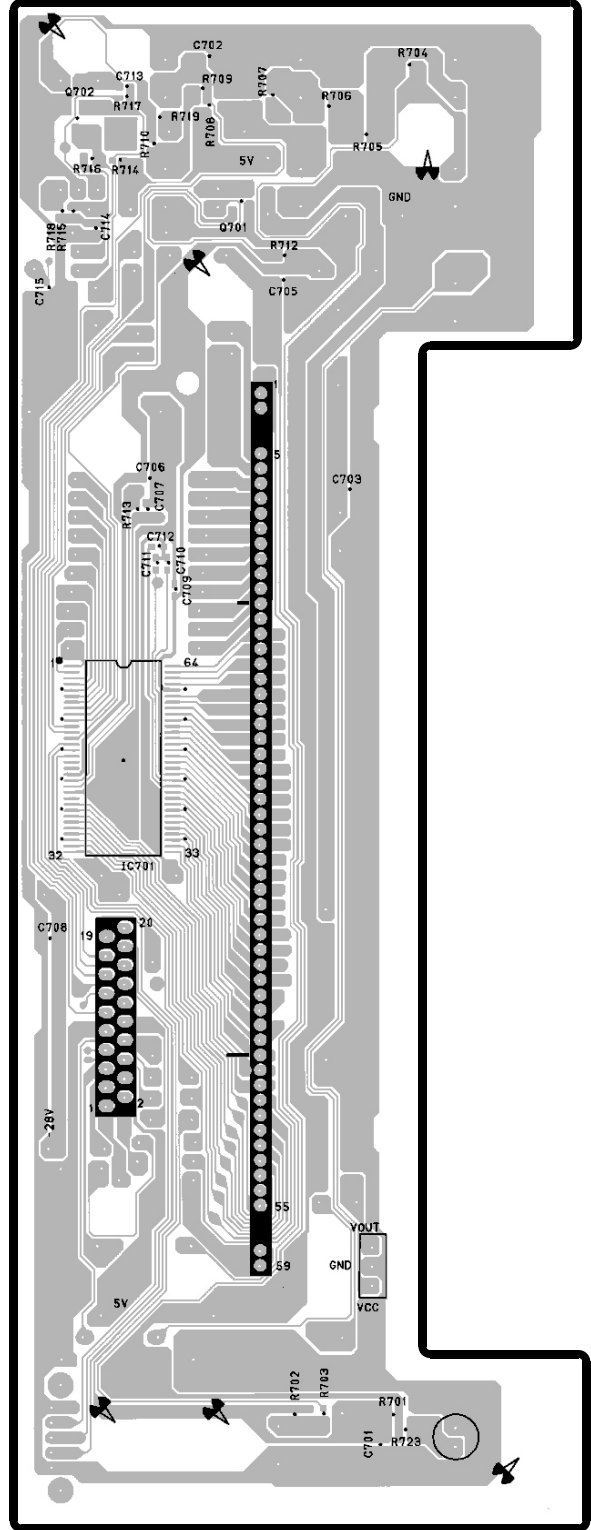


DISPLA Y PWB

Component Side

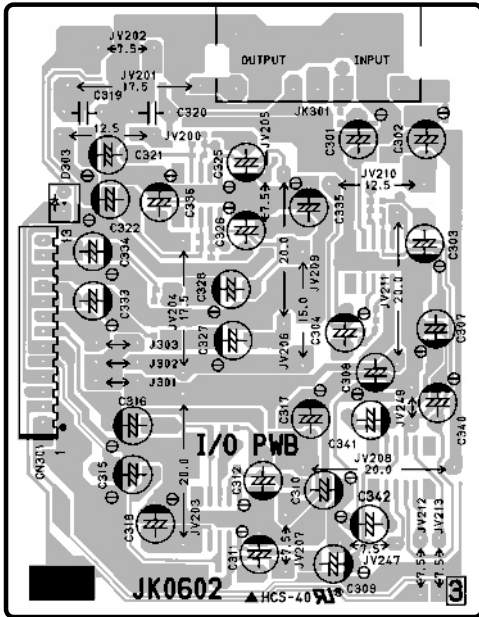


Soldering Side

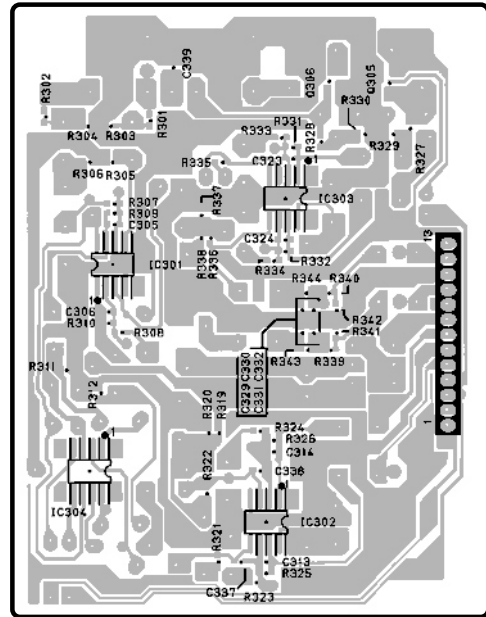


I/O PWB

Component Side

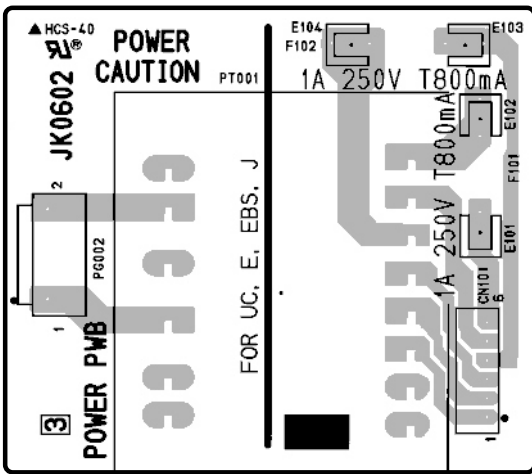


Soldering Side

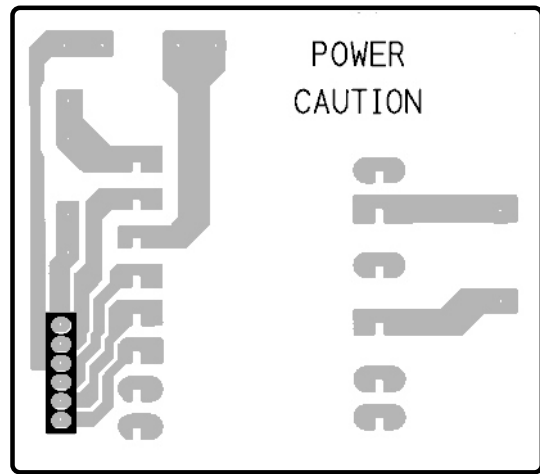


POWER PWB

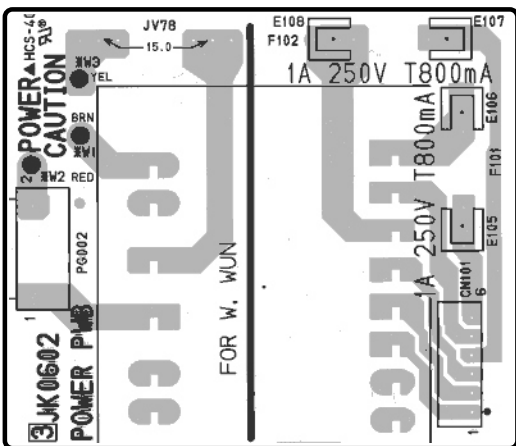
Component Side



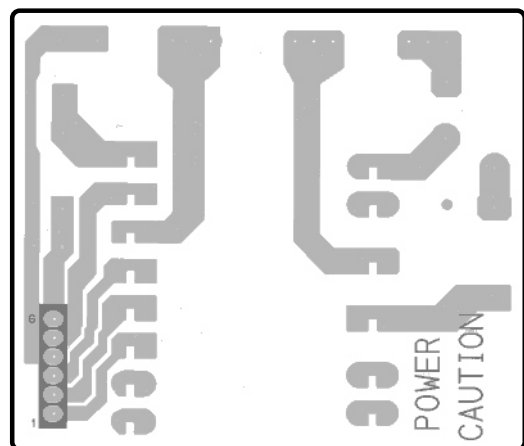
Soldering Side



Component Side

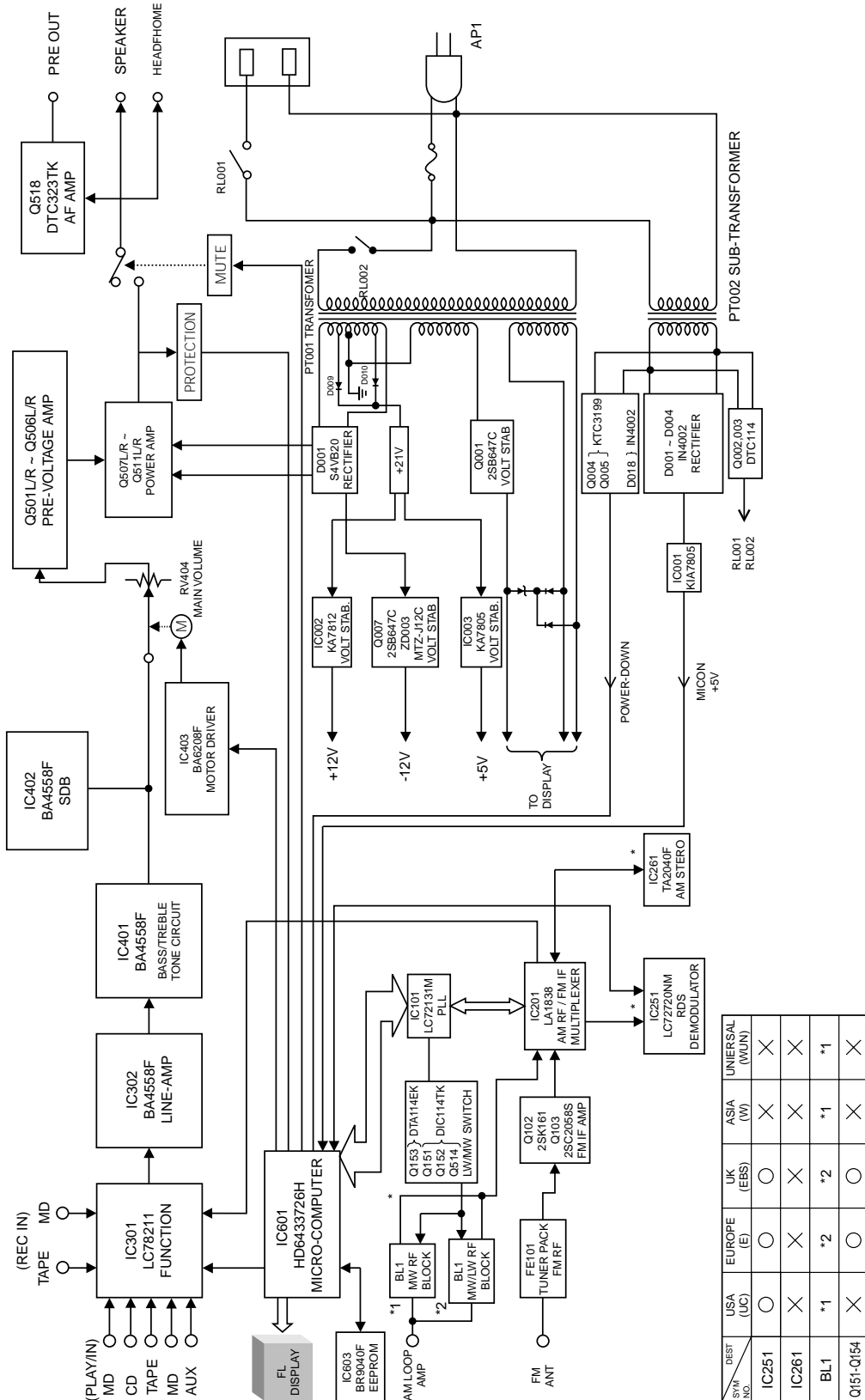


Soldering Side



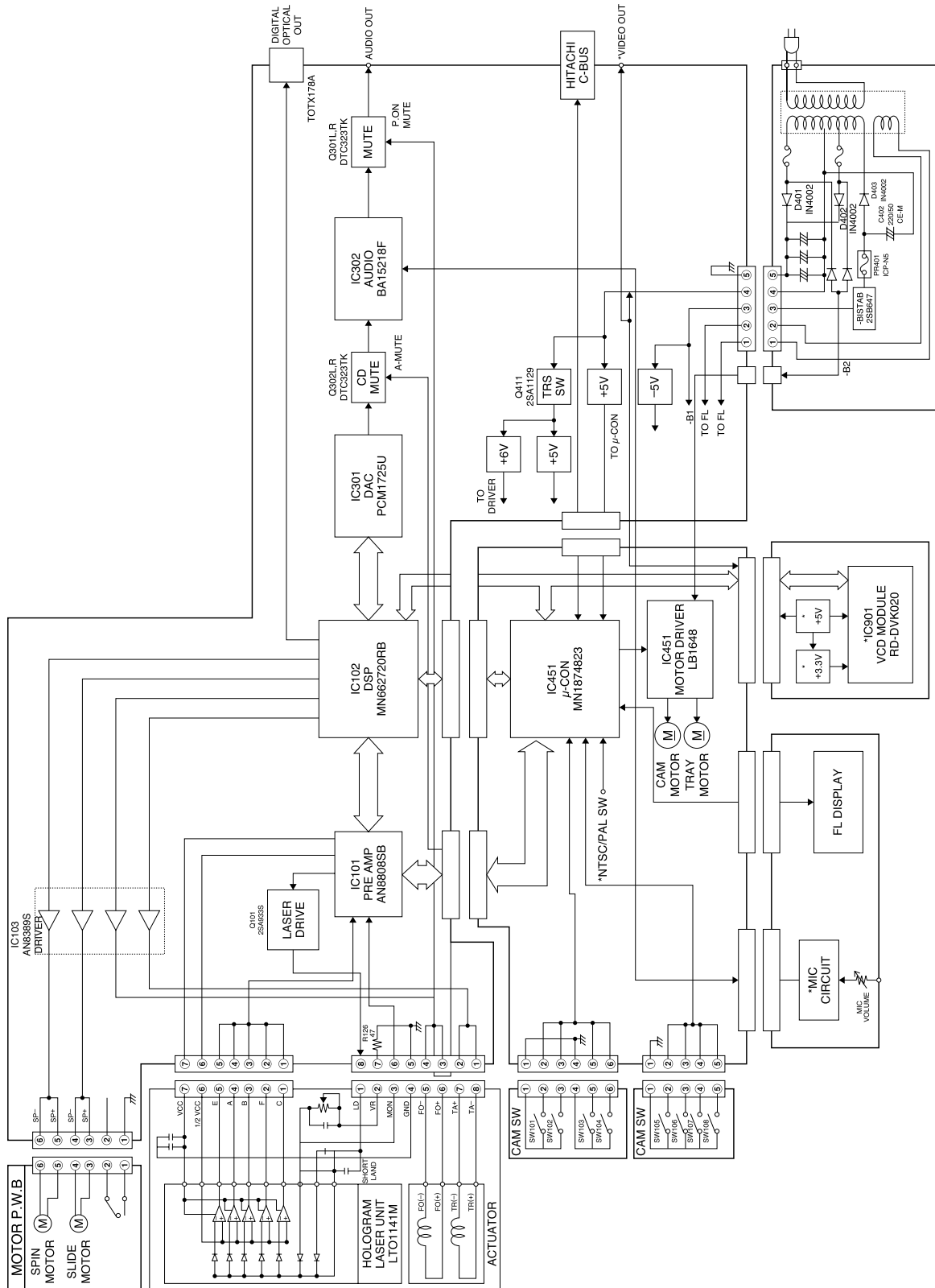
BLOCK DIAGRAM

• AM-FM TUNER AMPLIFIER (HTA-R100)

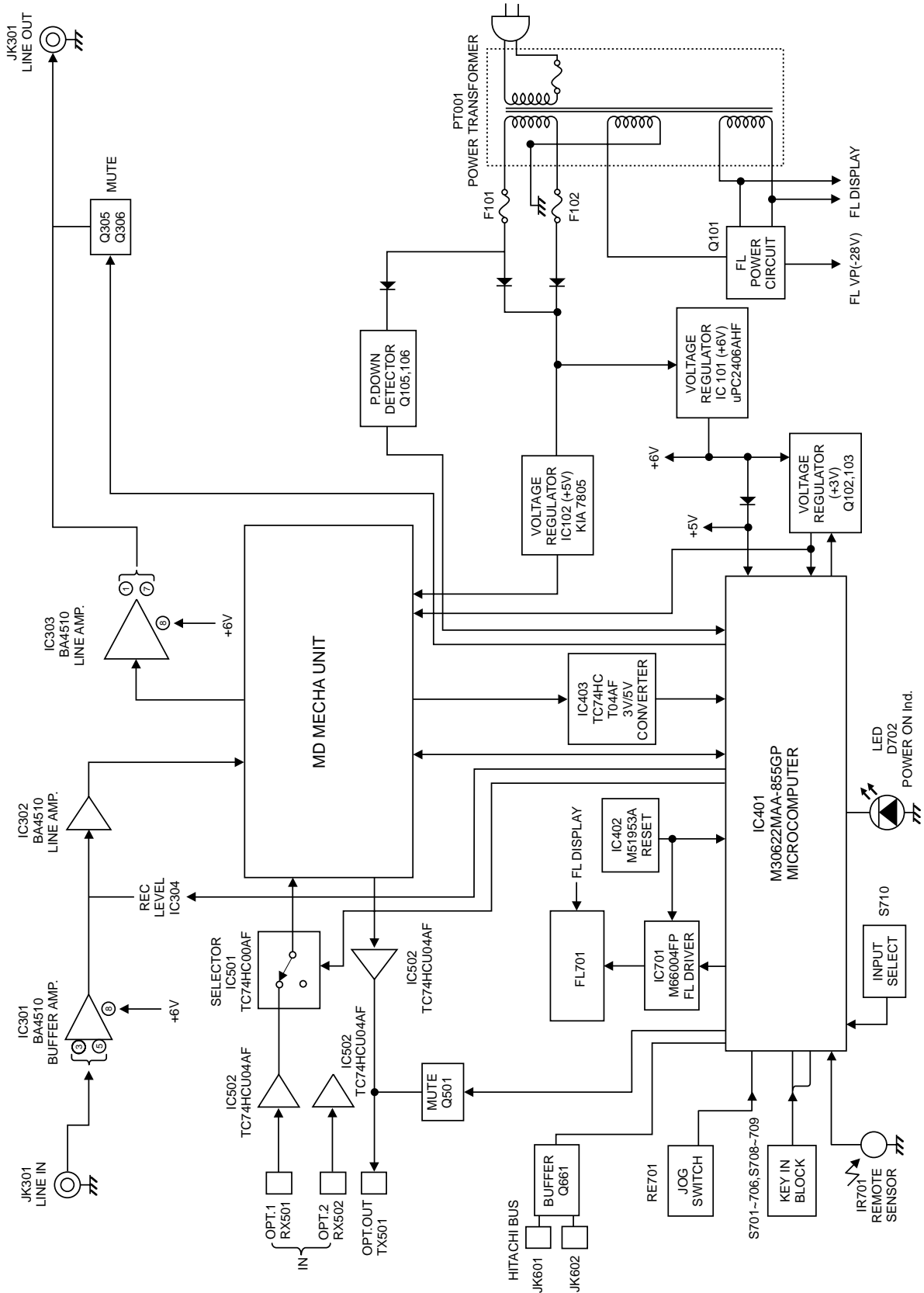


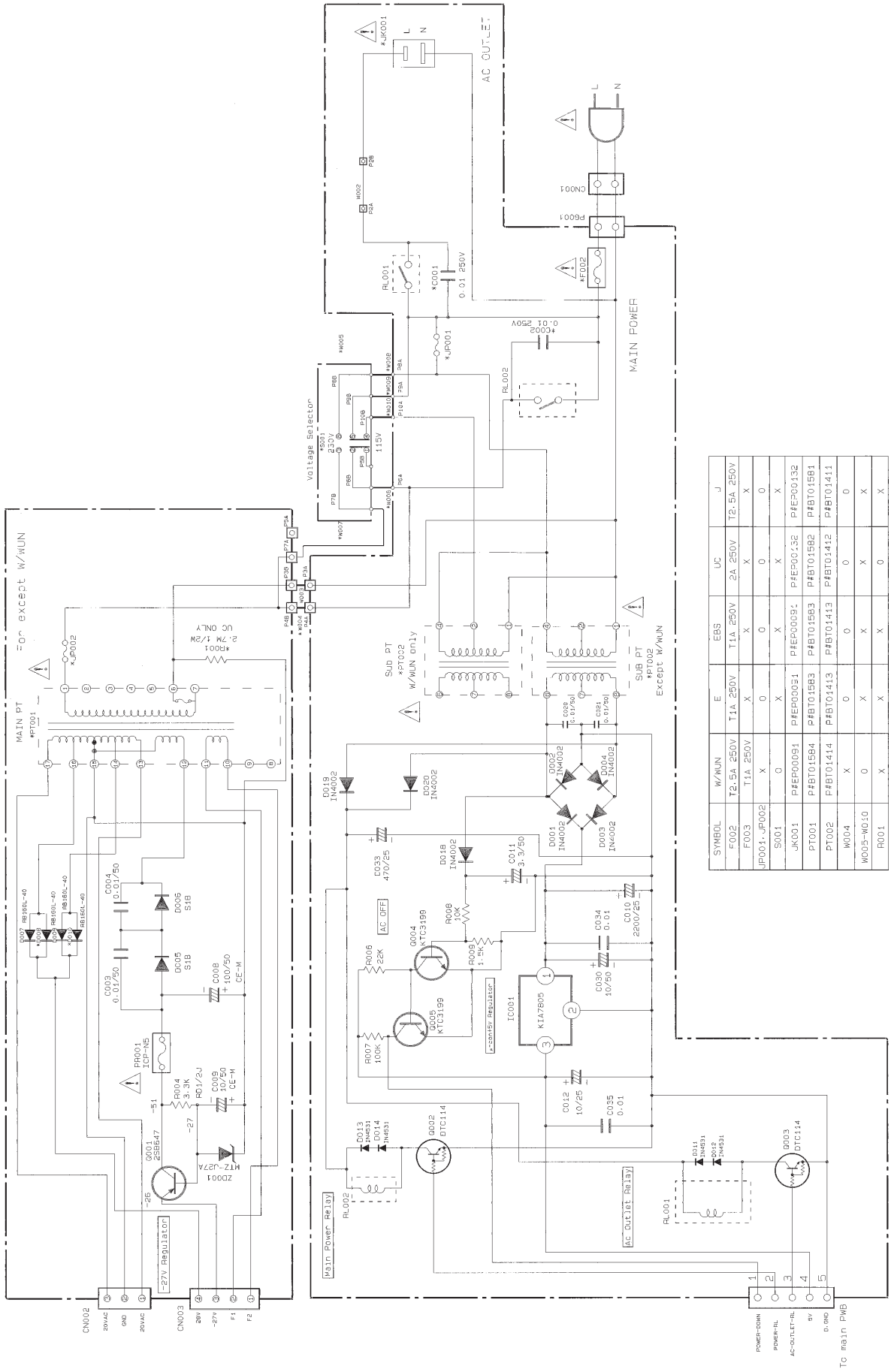
| DEST | USA (LUC) | EUROPE (E) | UK (EBS) | ASIA (W) | UNIVERSAL (WUN) |
|-----------|-----------|------------|----------|----------|-----------------|
| IC251 | ○ | ○ | ○ | × | × |
| IC261 | × | × | × | × | × |
| BL1 | *1 | *2 | *2 | *1 | *1 |
| Q151-Q154 | × | ○ | ○ | × | × |

• CD CHANGER (DA-R100)



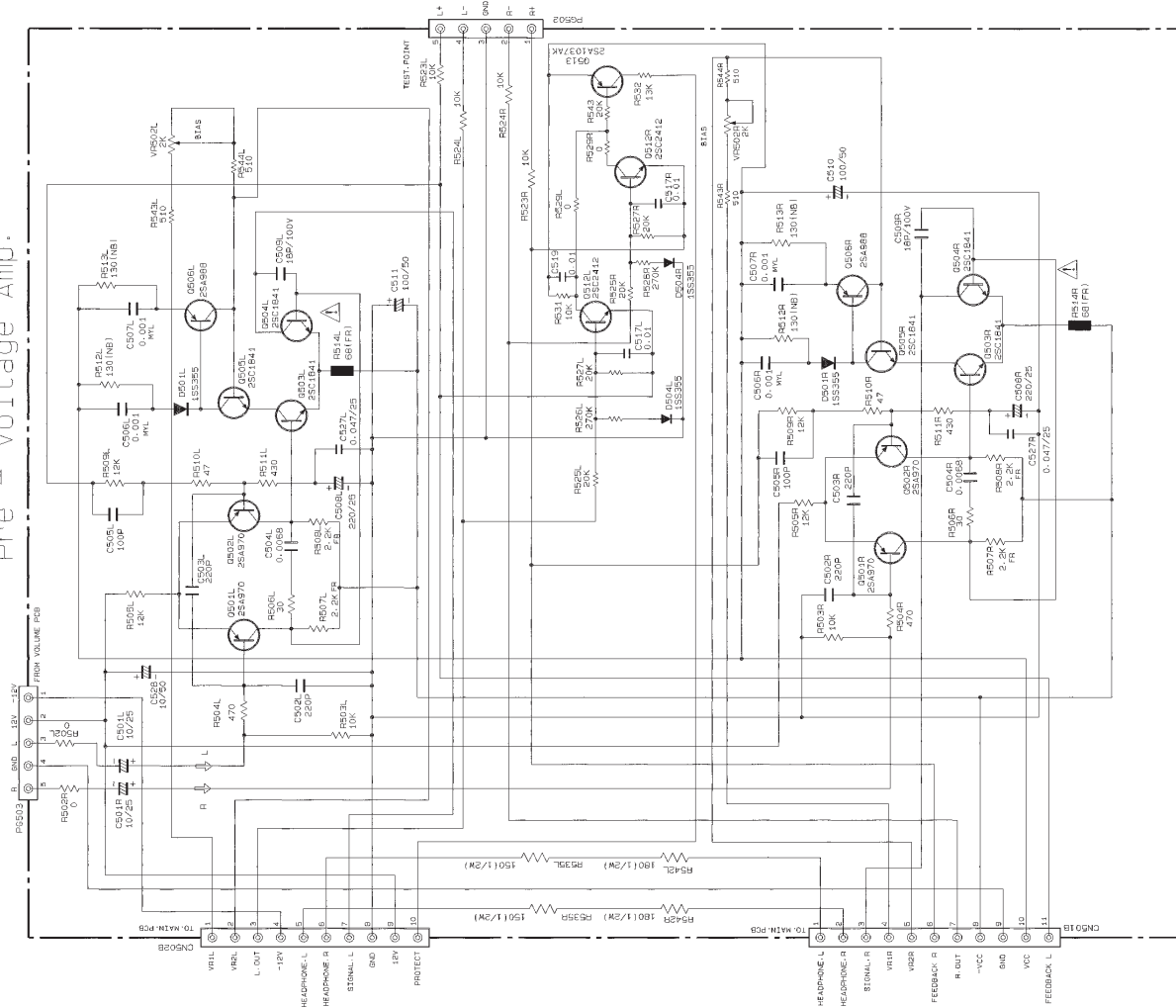
• MINI DISC RECORDER (HMD-R50)



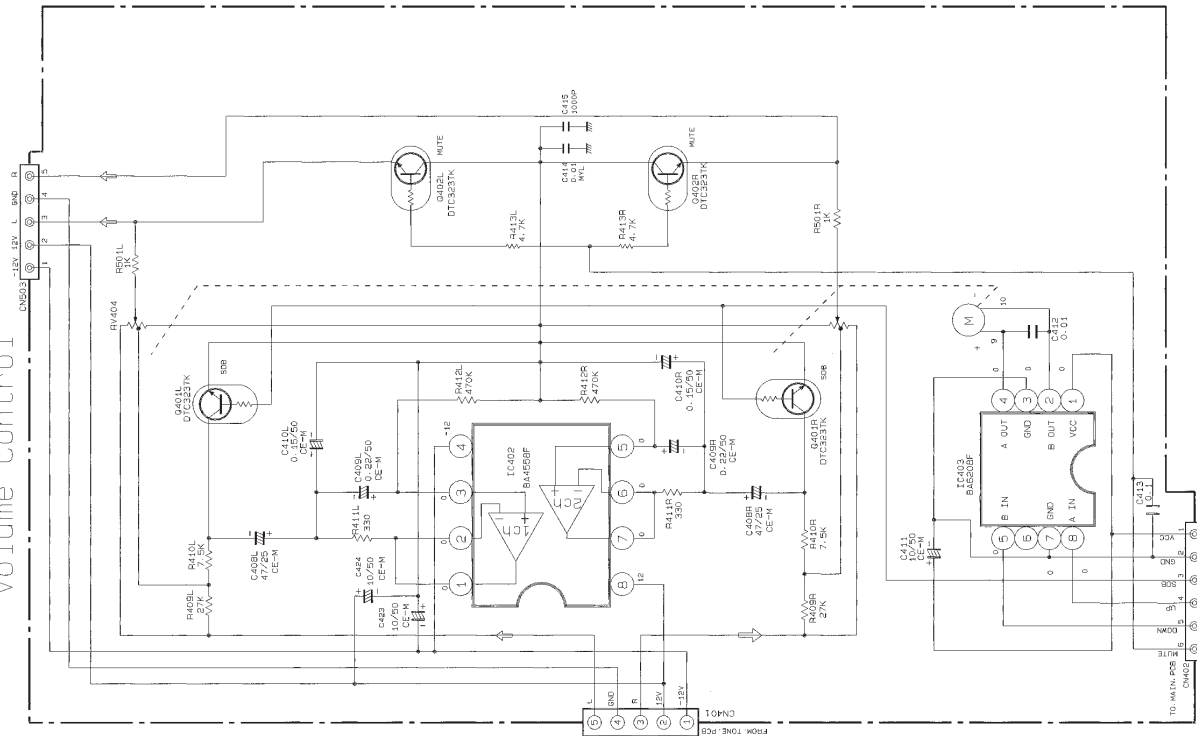


| SYMBOL | W/WUN | E | EBS | UC | J |
|-------------|------------|-----------|-----------|-----------|------------|
| F002 | T2.5A 250V | T1A 250V | T1A 250V | 2A 250V | T2.5A 250V |
| F003 | T1A 250V | X | X | X | X |
| JR001-JR002 | X | 0 | 0 | 0 | 0 |
| S001 | 0 | X | X | X | X |
| JK001 | P#EP00091 | 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 |

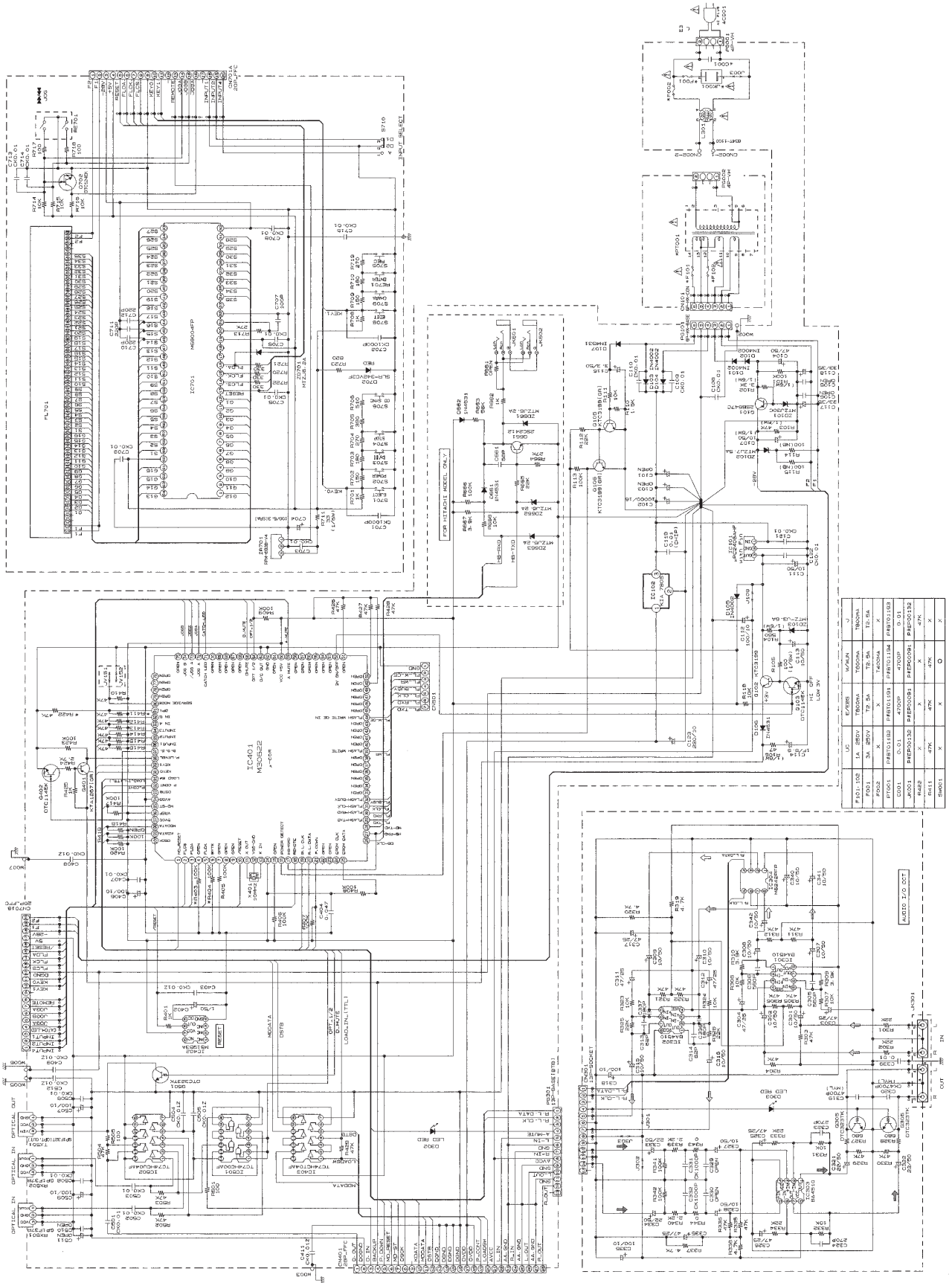
Pre - Voltage Amp.



Volume Control

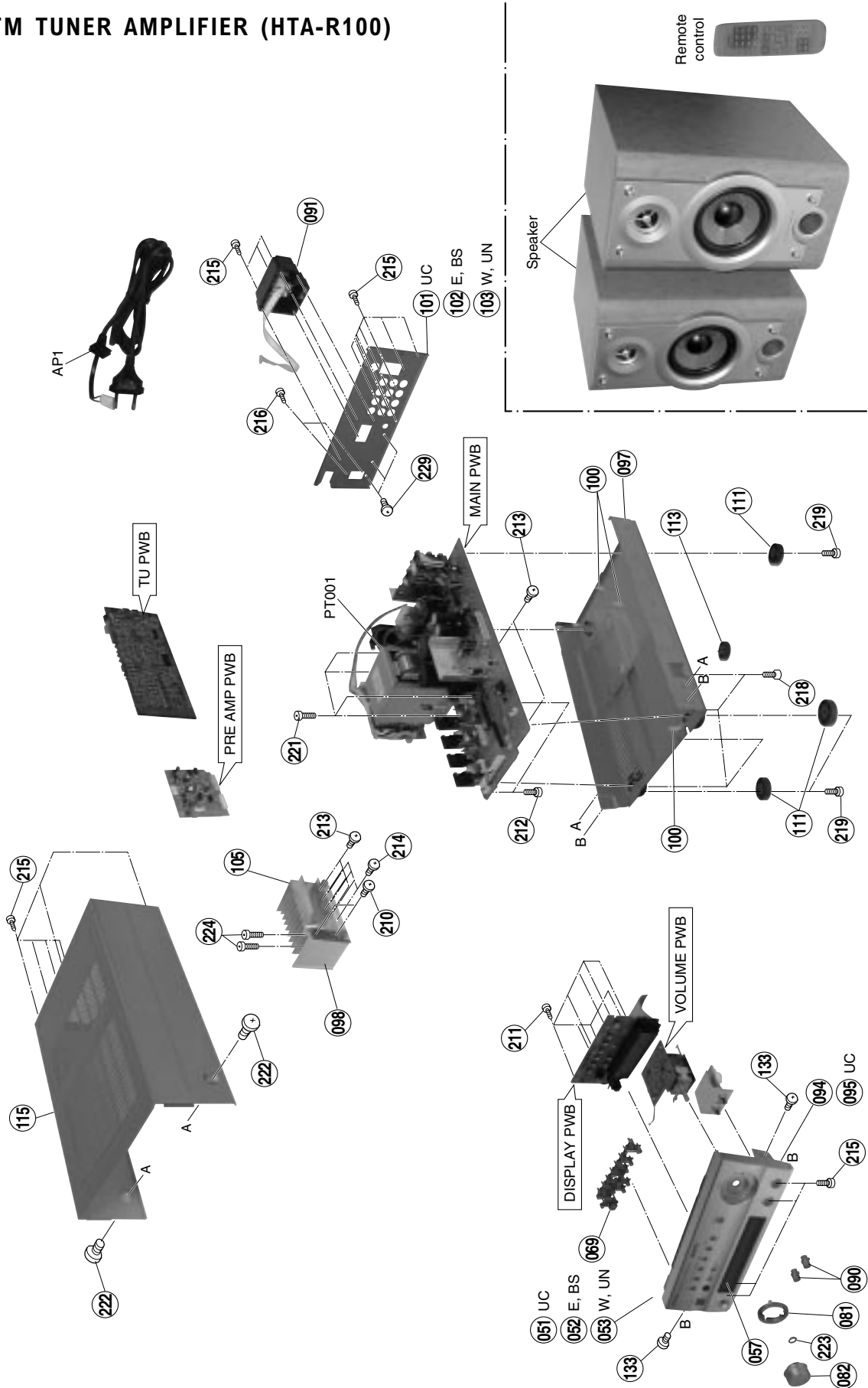


• MINI DISC RECORDER (HMD-R50)

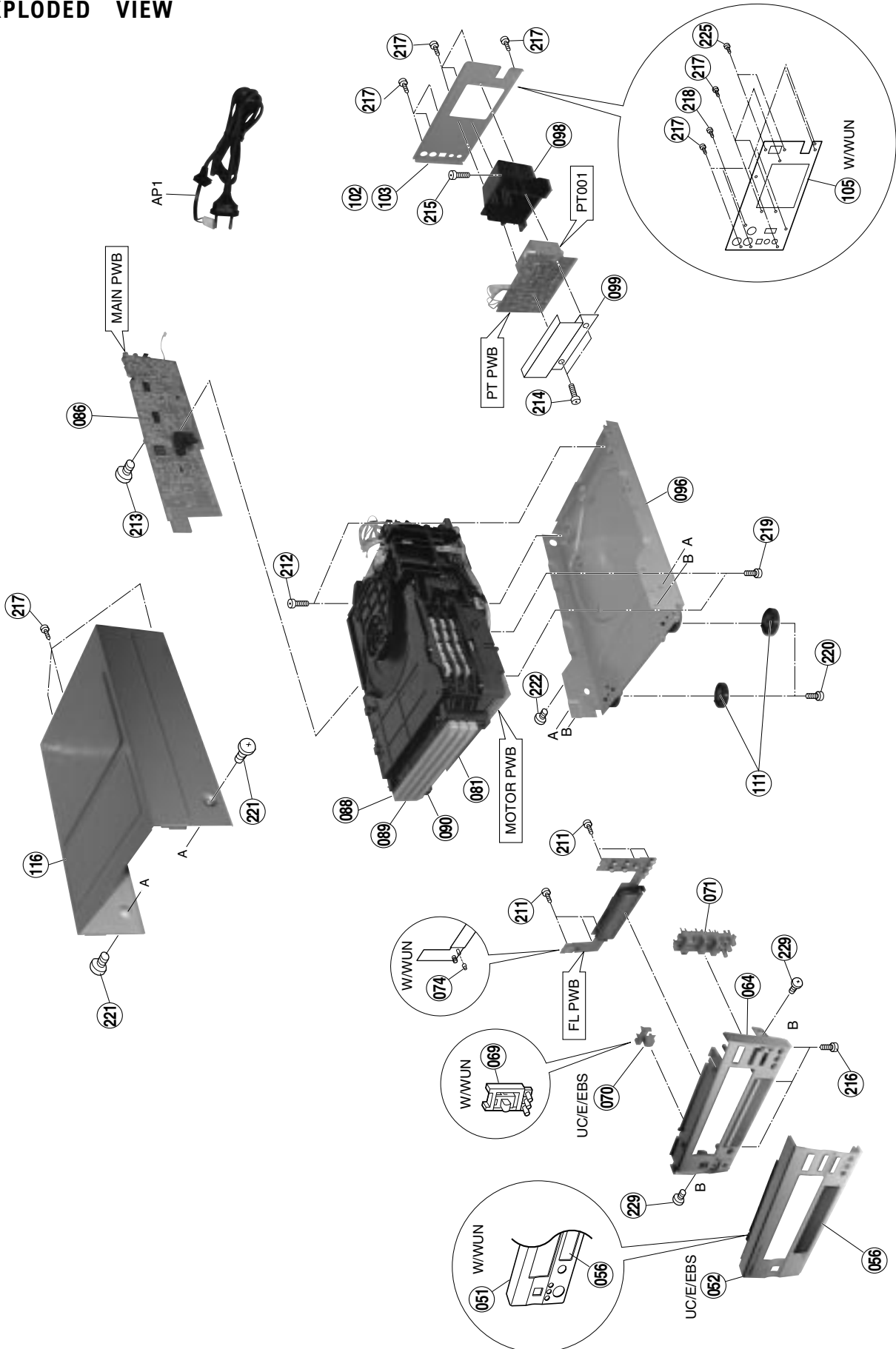


EXPLODED VIEW

• AM-FM TUNER AMPLIFIER (HTA-R100)



• CD CHANGER (DA-R100)
EXPLODED VIEW



**THE UPDATED PARTS LIST
FOR THIS MODEL IS
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