

1348

THE SOUND WELL
1718 UNIVERSITY AVE.
BERKELEY, CA 94703

TAN-8250

USA Model



STEREO POWER AMPLIFIER

SPECIFICATIONS

POWER AMP SECTION

Power outputs:

| | 2 CH | Monaural |
|--|--|---|
| Continuous RMS power output: (rated output) (less than 0.2% THD) | 180 W + 180 W/8 Ω 250 W + 250 W/4 Ω at 1 kHz, both channels driven simultaneously | LOW 350 W/4 Ω, 470 W/2 Ω HIGH 380 W/16 Ω, 550 W/8 Ω at 1 kHz |
| | 150 W + 150 W/8 Ω 200 W + 200 W/4 Ω at 20 Hz~20 kHz, both channels driven simultaneously | LOW 300 W/4 Ω, 400 W/2 Ω HIGH 350 W/16 Ω, 500 W/8 Ω at 20 Hz~20 kHz |
| Dynamic power output: (IHF constant power supply method) | 379 W/8 Ω 500 W/4 Ω | LOW 370 W/4 Ω, 500 W/2 Ω HIGH 380 W/16 Ω, 550 W/8 Ω |

Power bandwidth: 5 Hz~50 kHz with 8 Ω load (IHF)

Harmonic distortion: 0.1 % at rated output
0.05 % at 1 W output

IM distortion: 0.1 % at rated output
0.05 % at 1 W output

Frequency response: 20 Hz~100 kHz ± 0 dB with NORMAL/
 -3 dB with NORMAL/
TEST switch set to NORMAL
DC~100 kHz ± 0 dB with NORMAL/
 -1 dB with NORMAL/
TEST switch to TEST

Inputs: Sensitivity: 1.0 V RMS (for rated output)
Impedance: 50 kΩ
(Two pairs of inputs equipped with LEVEL controls)

Outputs: Total impedance should be higher than 4 Ω.
In 2CH mode
minimum speaker impedance is 4 Ω.

In MONO-LOW mode
minimum speaker impedance is 2 Ω.
In MONO-HIGH mode
minimum speaker impedance is 8 Ω.

Residual noise: 1 μW

S/N ratio: 100 dB, weighting network A, short-circuited

Damping factor: 250 (8 Ω, at 1 kHz, at SPEAKER DIRECT terminal)

OPTICAL PEAK PROGRAM METER

Frequency response: 30 Hz~30 kHz ± 0 dB -3 dB

Measuring range: 0~200 W (with METER SENSITIVITY switch set to "x 1/10" 0W~20 W)

GENERAL

System: Phase-linear dc stereo pure-complementary power amplifier

Power requirements: 120 V ac, 60 Hz

Power consumption: 380 W

AC outlet: 1 unswitched 200 W

Dimensions: 440 (w) × 170 (h) × 410 (d) mm
17 $\frac{3}{8}$ (w) × 6 $\frac{3}{4}$ (h) × 16 $\frac{1}{8}$ (d) inches

Weight: 23.3 kg (51 lb 6 oz), net
28.4 kg (62 lb 10 oz), in shipping carton

SONY®

SERVICE MANUAL

SECTION 1 DISASSEMBLY AND REPLACEMENT

Note: All screws are Phillips type (cross recess type), unless otherwise noted.

1-1. FRONT PANEL REMOVAL

1. Remove the upper panel by taking out the four screws.
2. Remove the screws shown in Fig. 1-1, Fig. 1-2 and Fig. 1-3.

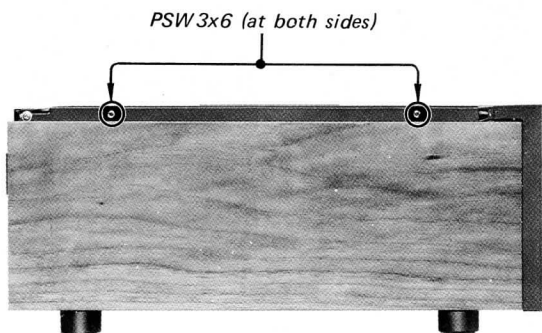


Fig. 1-1. Side panel removal

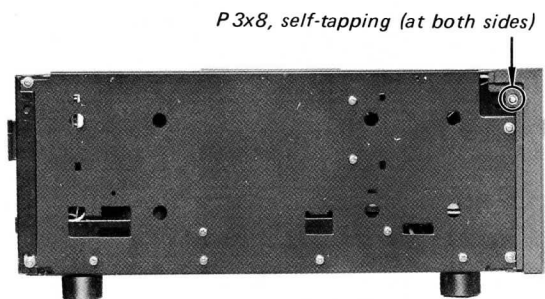


Fig. 1-2. Front panel removal (1)

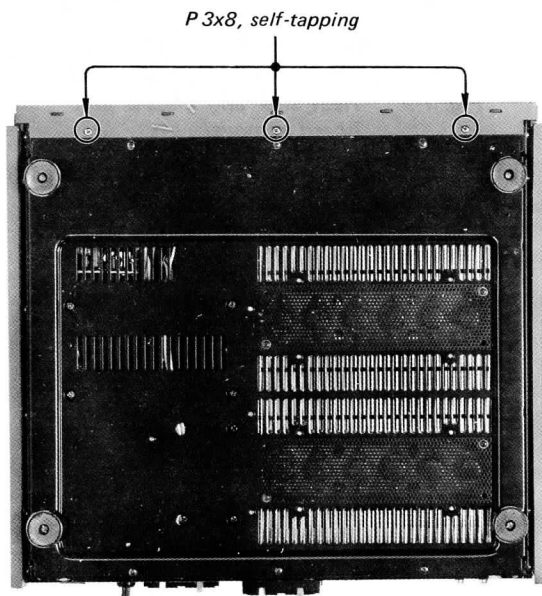


Fig. 1-3. Front panel removal (2)

1-2. FRONT SUBCHASSIS AND REAR PANEL REMOVAL

Remove the screws shown in Fig. 1-4. and Fig. 1-5.

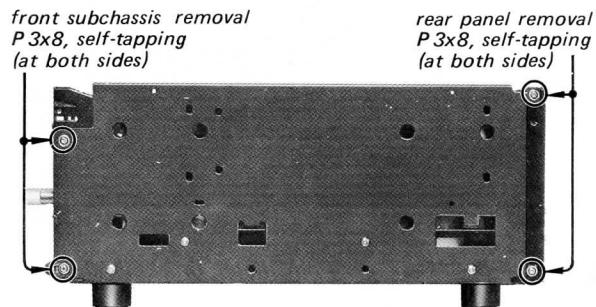


Fig. 1-4. Front subchassis and rear panel removal (1)

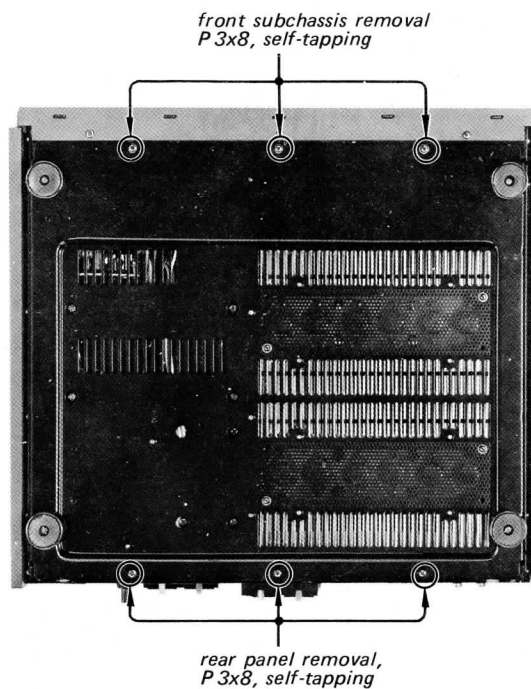


Fig. 1-5. Front subchassis and rear panel removal (2)

1-3. PEAK PROGRAM METER REPLACEMENT

Remove the screws shown in Fig. 1-6 and Fig. 1-7.

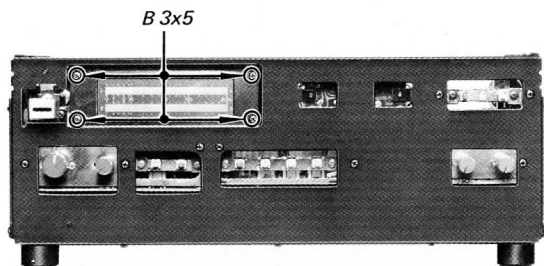


Fig. 1-6. Peak program meter bracket removal

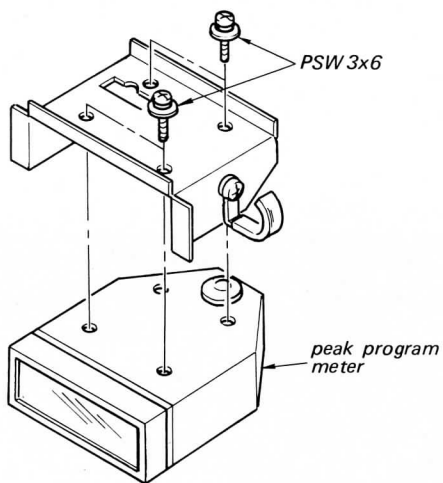


Fig. 1-7. Peak program meter replacement

1-4. CIRCUIT BOARD REMOVAL

Class-B Amp Board Removal

Remove the screws shown in Fig. 1-8 and Fig. 1-9.

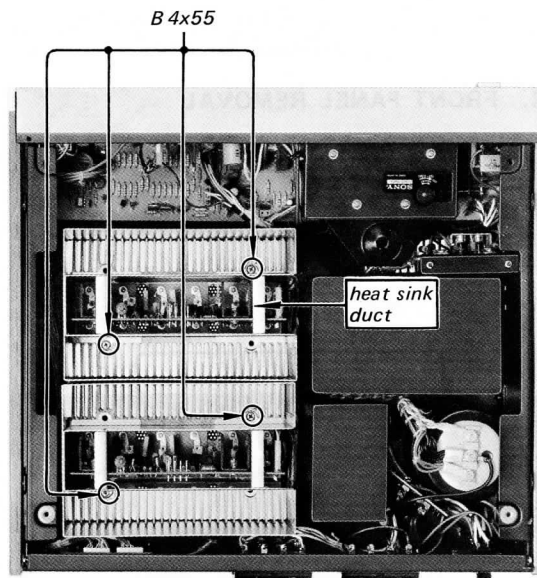


Fig. 1-8. Heat sink duct removal

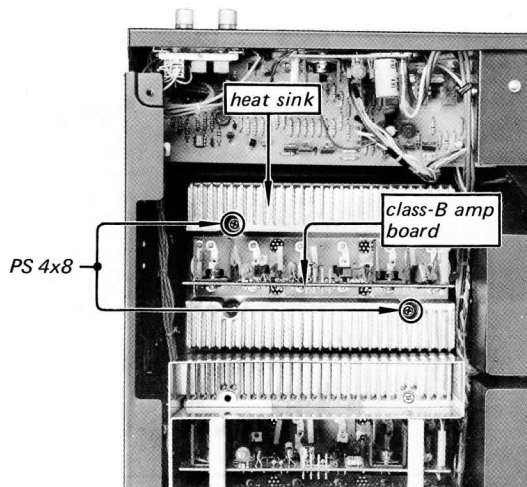
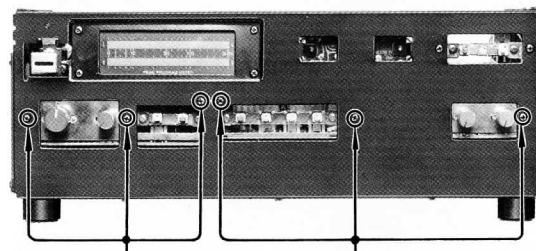


Fig. 1-9. Heat sink and class-B amp board removal

Class-A Amp Board and Meter Board Removal

See Fig. 1-10.



meter board removal, B 3x5 class-A amp board removal, B 3x5

Fig. 1-10. Class-A amp board and meter board removal

Regulator Board Removal

Remove the two nylon rivets shown in Fig. 1-11.

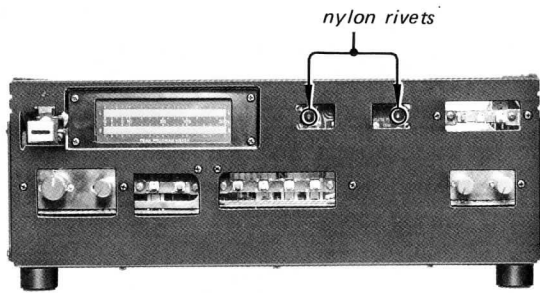


Fig. 1-11. Regulator board removal

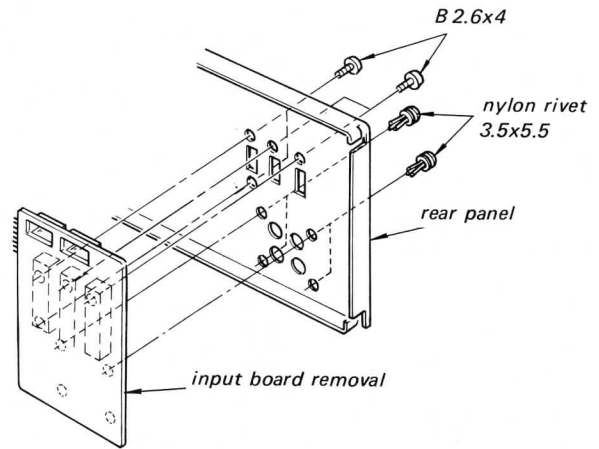


Fig. 1-13. Input board removal

Power Supply Board Removal

Remove the two screws shown in Fig. 1-12.

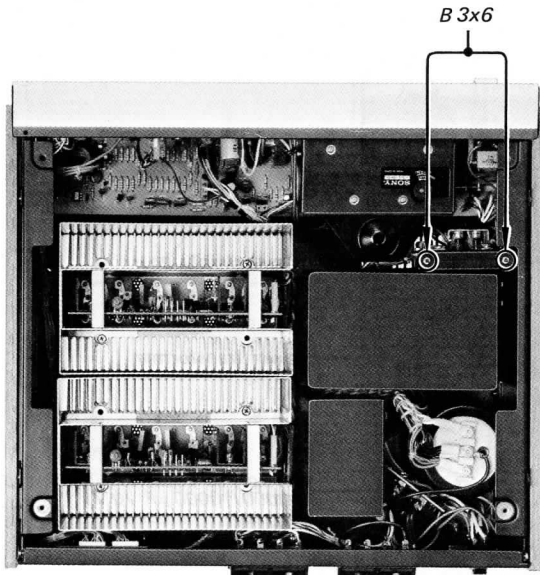


Fig. 1-12. Power supply board removal

1-5. POWER TRANSISTOR REPLACEMENT

Remove the screws shown in Fig. 1-14 and Fig. 1-15.

Note: When replacing the power transistor, apply a coating of a heat-transferring grease to both sides of the mica insulator as shown in Fig. 1-15. Any excess grease squeezed out when the screws (B 3x12) are tightened should be wiped off with a clean cloth. This prevents it from accumulating conductive dust particles that might eventually cause a short.

Input Board Removal

1. Remove the rear panel as described in Procedure 1-2.
2. Remove the screws and nylon rivets shown in Fig. 1-13.

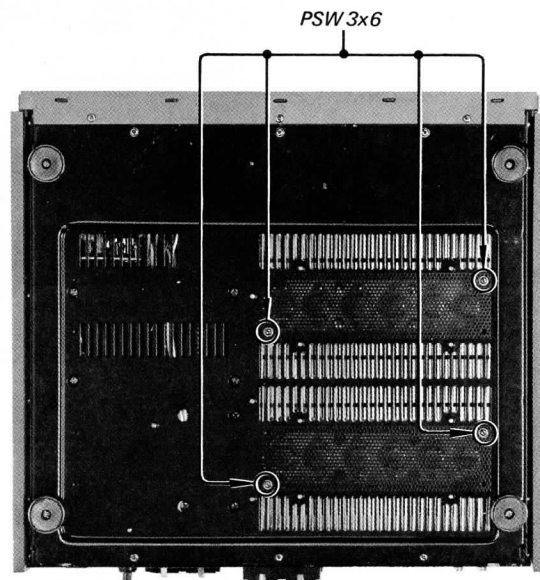


Fig. 1-14. Bottom plate cover removal

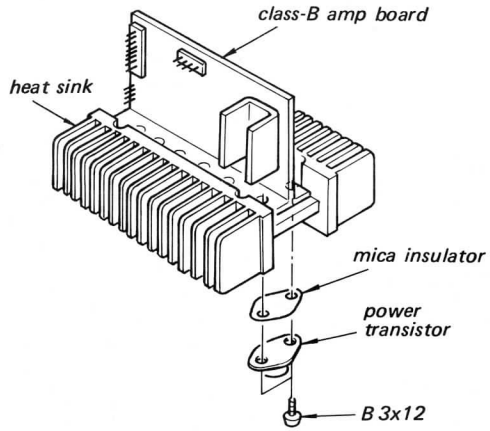


Fig. 1-15. Power transistor replacement

1-6. CHASSIS LAYOUT

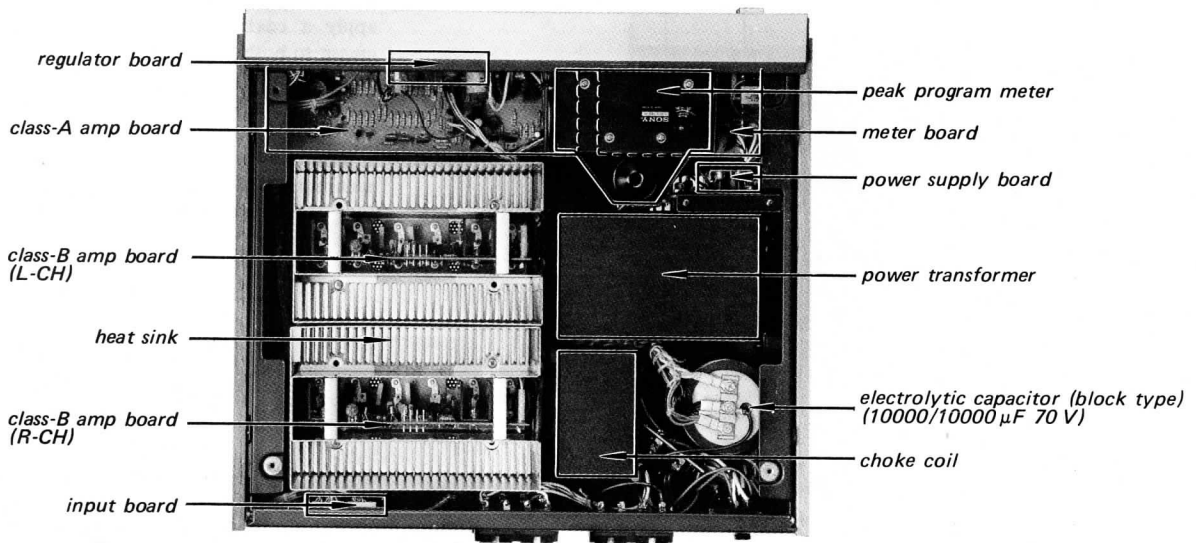


Fig. 1-16. Chassis layout – top view –

SECTION 2 ADJUSTMENTS

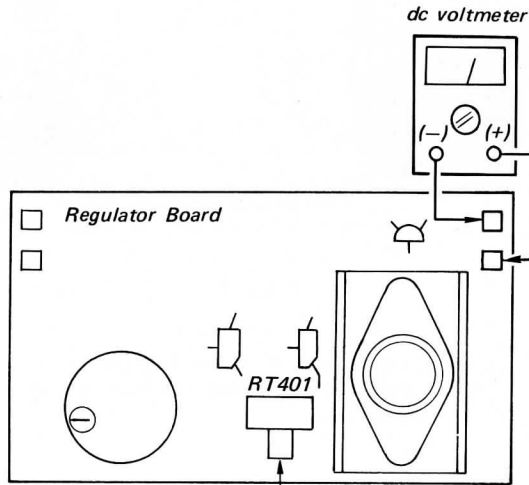
Note: Allow about five minutes for warm-up.

2-1. POWER VOLTAGE ADJUSTMENT

Regulator Board

CAUTION

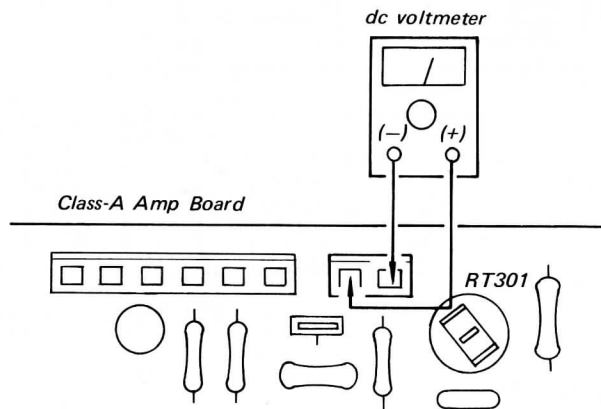
Never short the test terminal pin to ground, because the voltage difference between the each pin and ground is 70~76 V in absolute value.



Adjust RT401 for 8 V reading on the meter.

Fig. 2-1.

Class-A Amp Board



Adjust RT301 for 65 V reading on the meter.

Fig. 2-2.

Note: If this adjustment has not been made correctly, enough output will not be obtained.

Power Supply Board

Note: Always connect the 8 Ω load across the SPEAKER OUT "A" and feed a 1 kHz signal to TAN-8250 during the adjustment.

Test setup:

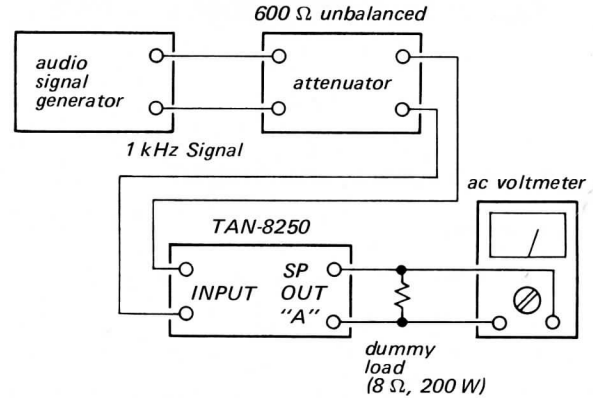


Fig. 2-3.

Preparation

1. Set the TAN-8250 switches and control as follows:

SPEAKER switch A
 POWER LIMITER switch ... FULL POWER
 INPUT switch NORMAL
 MODE switch 2CH
 LEVEL control fully clockwise

2. Feed a 1 kHz signal to TAN-8250, and adjust the attenuator for 50 W (20.0 V) on the meter.
3. Connect the dc voltmeter across terminal pins of capacitor as shown in Fig. 2-4.
4. With the 1 kHz signal fed, adjust RT331 (See Fig. 2-5.) for 65 V reading (See Fig. 2-4.) on the meter, respectively.

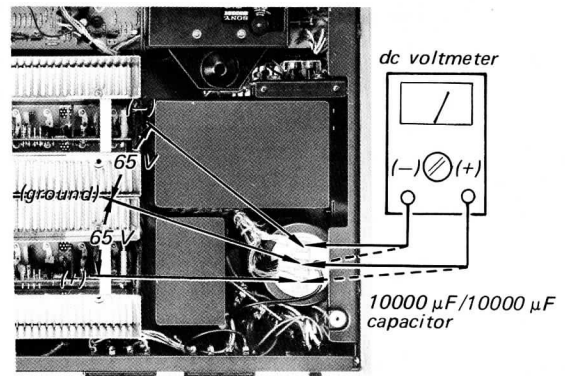


Fig. 2-4.



RT331

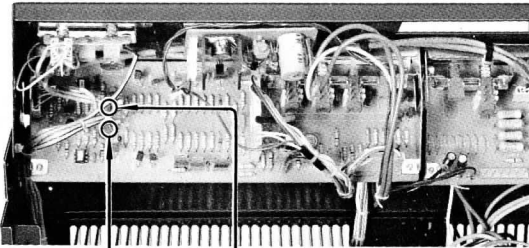
Fig. 2-5.

2-2. DC BALANCE ADJUSTMENT

Preparation:

1. Set the TAN-8250 switches as follows:
 SPEAKER switch A
 MODE switch 2CH
2. Connect the dc voltmeter across the SPEAKER OUT "A".

Procedure:



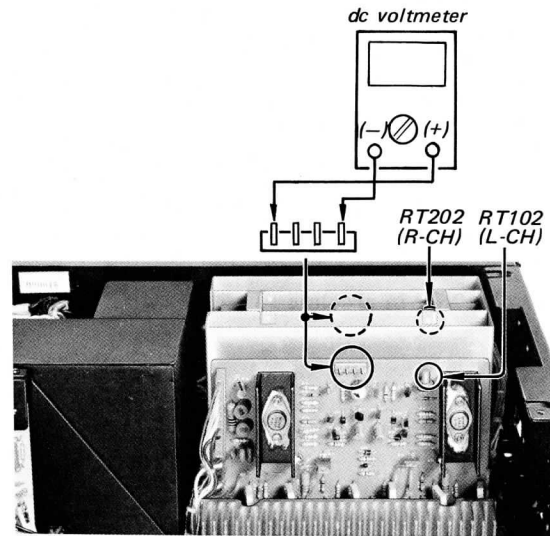
RT201 (R-CH) RT101 (L-CH)

Adjust RT101 and RT201 for 0 V reading on the meter.

Fig. 2-6.

Note: The dc balance and dc bias adjustments should be alternately repeated two or three times.

2-3. DC BIAS ADJUSTMENT



Adjust RT102 and RT202 for 50 mV reading on the meter with no input signal.

Fig. 2-7.

Note: The dc balance and dc bias adjustments should be alternately repeated two or three times.

2-4. PEAK PROGRAM METER ADJUSTMENT AND CHECK

Test setup:

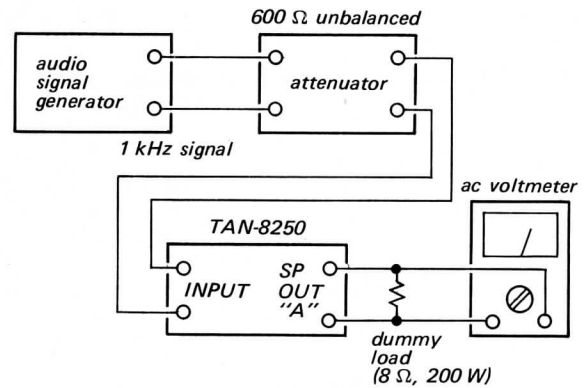


Fig. 2-8.

Preparation:

Set the TAN-8250 switches as follows:

SPEAKER switch A
 POWER LIMITER switch ... FULL POWER
 METER SENSITIVITY
 switch x1
 MODE switch 2CH
 INPUT switch NORMAL

Procedure:

1. Feed a 1 kHz signal to INPUT jack and adjust the attenuator for 100 W (28.3 V) reading on the ac voltmeter.
2. Adjust RT181 and RT281 (See Fig. 2-9.) so that the peak program meter reads 100 W.

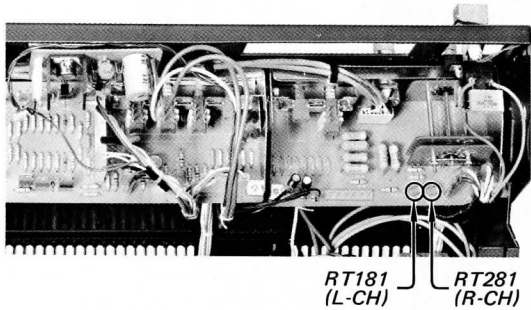
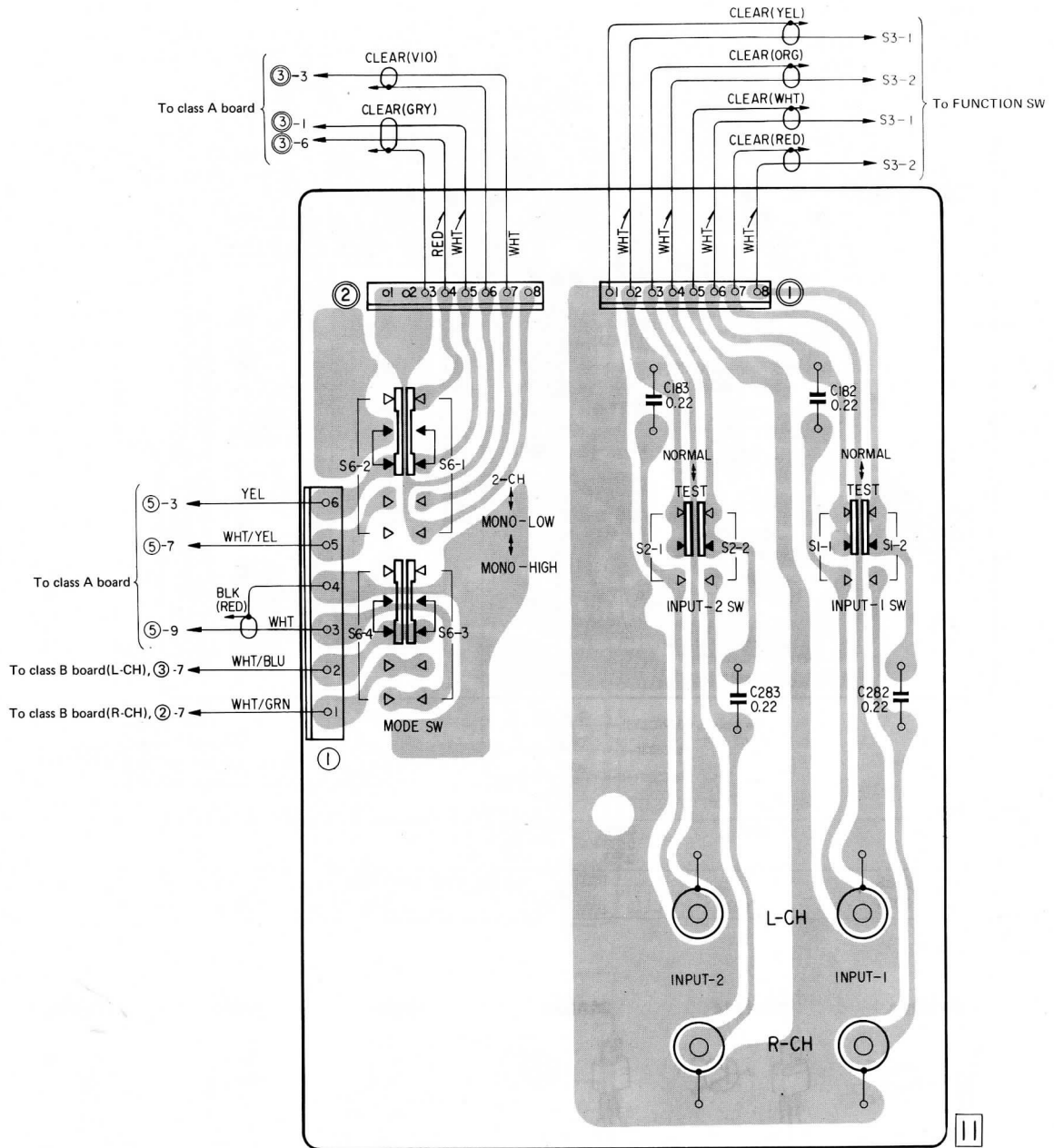


Fig. 2-9.

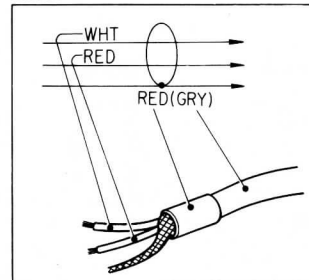
3. Decrease the output of attenuator 10 dB, and confirm that the peak program meter reads 10 W.
4. Change the METER SENSITIVITY switch to "x1/10", and confirm that the peak program meter reads 100 W.
5. Decrease the output of attenuator 10 dB, and confirm that the peak program meter reads 10 W.
6. Change the METER SENSITIVITY switch to "x1", and confirm that the peak program meter reads 1 W.

3-2. MOUNTING DIAGRAM – Input Board –

– Conductor Side –

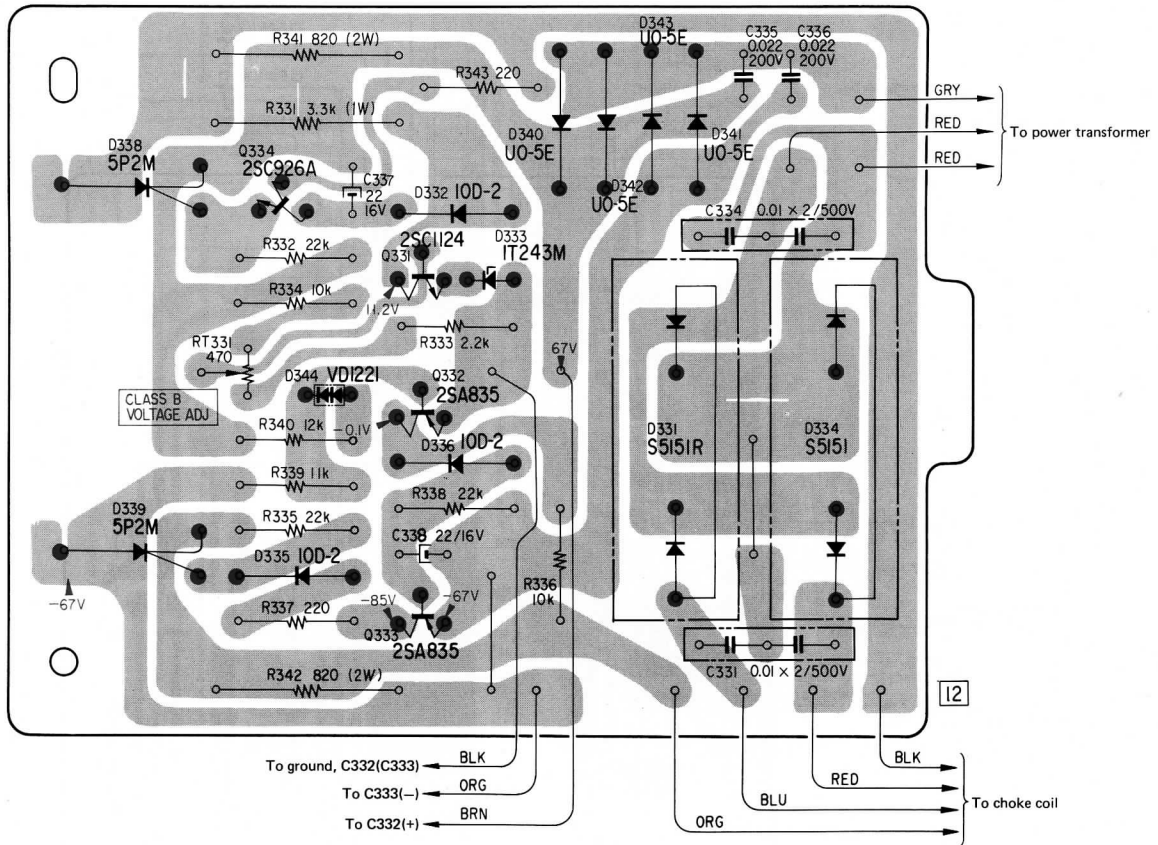


Note:



3-3. MOUNTING DIAGRAM — Power Supply Board —

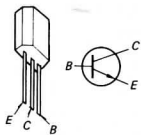
— Conductor Side —



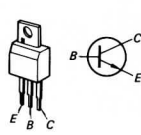
Parts Location

| Q | Q334 | | Q331 | Q332 | Q333 | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|
| D | D338 | D344 | D332 | D330 | D333 | D340 | D342 | D343 | D341 | D334 |
| | D339 | D335 | D336 | | | | | D331 | | |

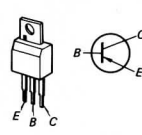
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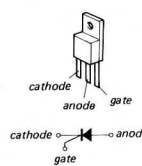
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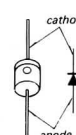
2SA835



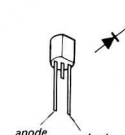
5P2M



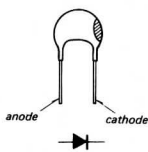
10D-2



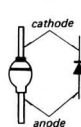
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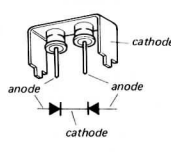
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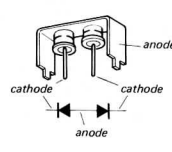
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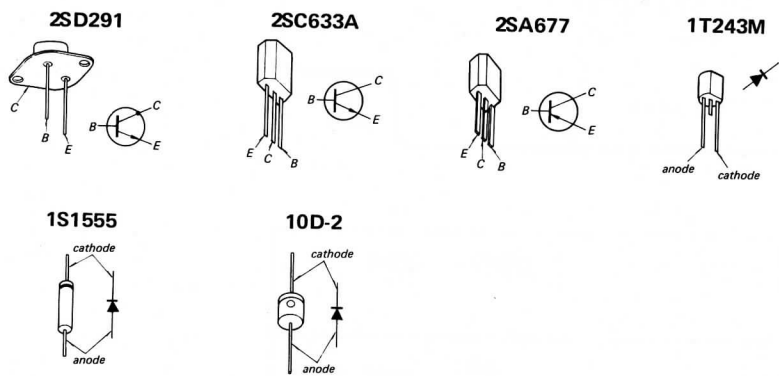
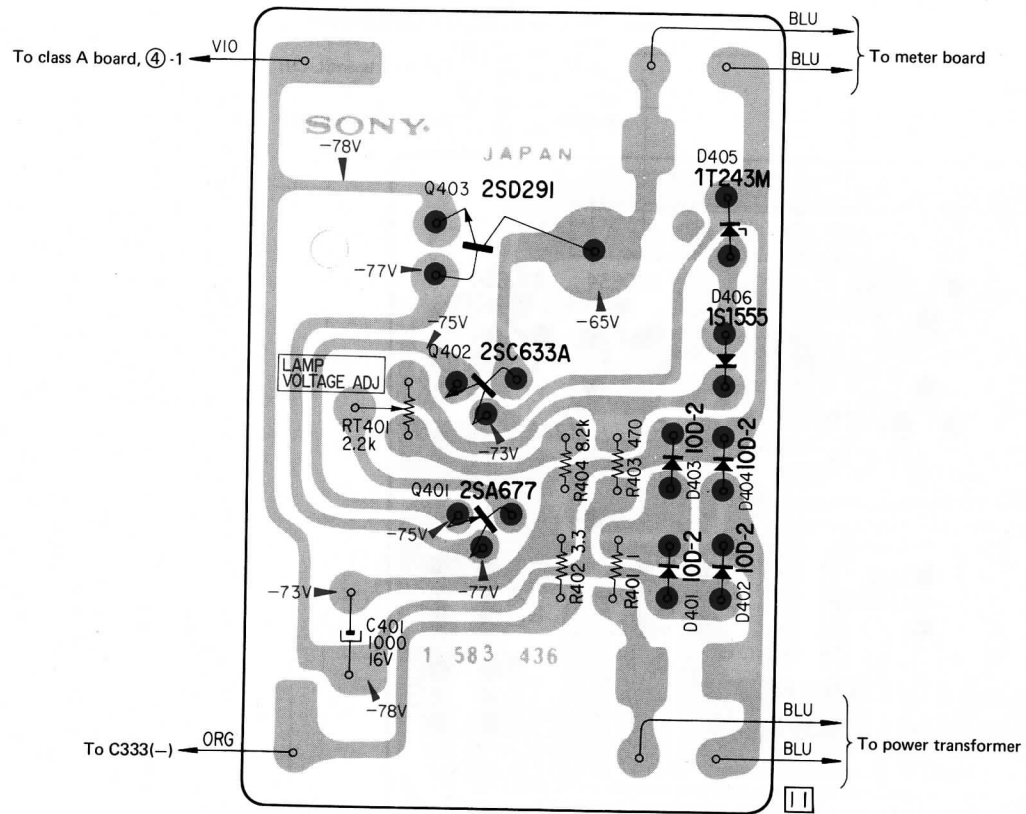
S5151



S5151R



3-4. MOUNTING DIAGRAM — Regulator Board —
 — Conductor Side —

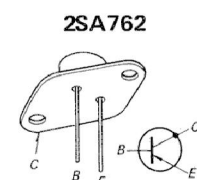
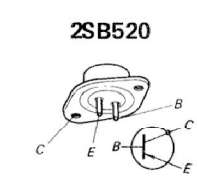
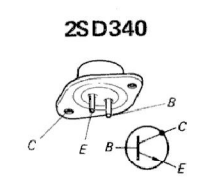
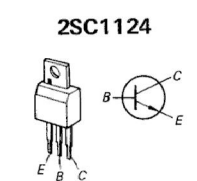
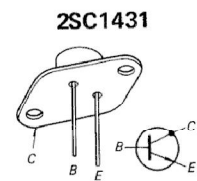
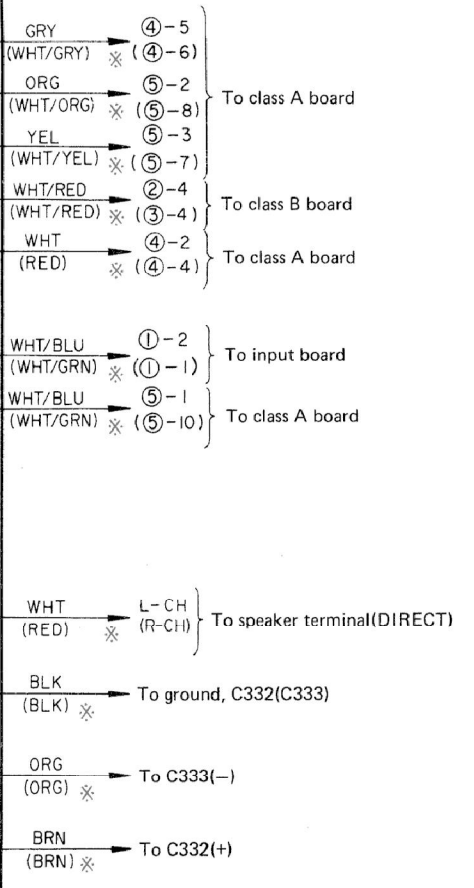
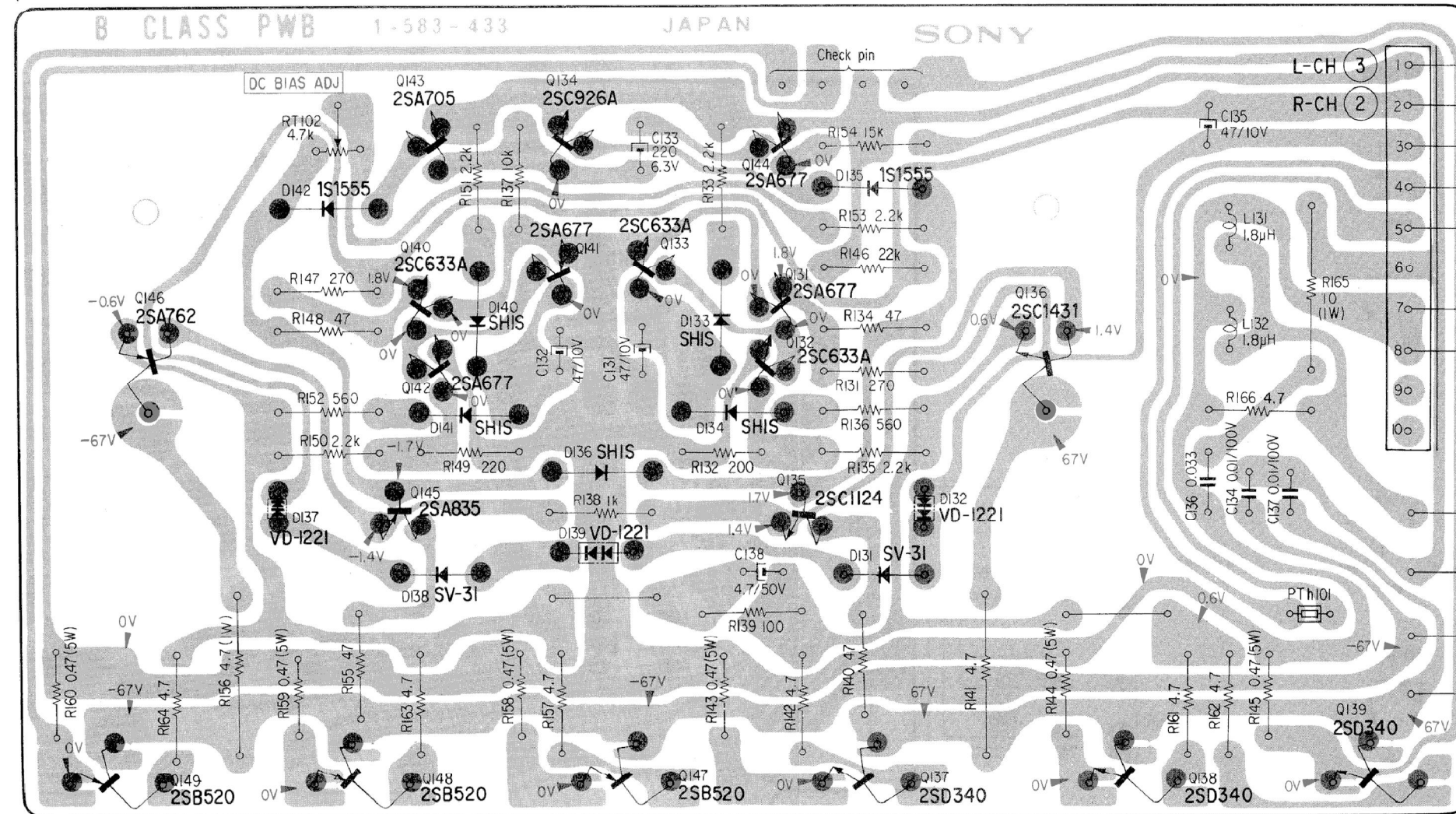


3-5. MOUNTING DIAGRAM - Class-B Amp Board -

- Conductor Side -

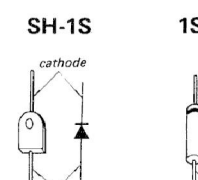
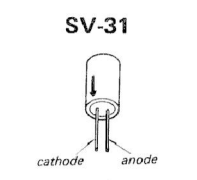
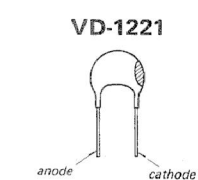
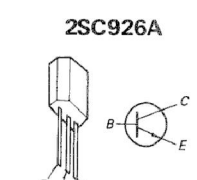
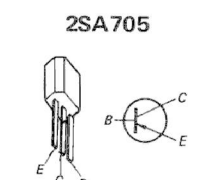
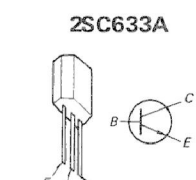
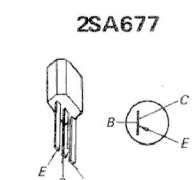
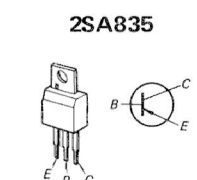
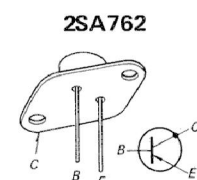
(L-channel)

Note: R-CH is the same as L-CH.



Parts Location

| | | | | | | | | |
|---|------|----------------------|--------------|--------------|----------------------|--------------|------|------|
| Q | Q146 | Q143 Q140 Q142 | Q134 Q141 | Q133 | Q144 Q131 Q132 | Q136 | Q138 | Q139 |
| D | D137 | D142 D141 | D140 | D136 D139 | D133 D134 | D135 D132 | D131 | |

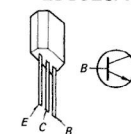


Note: The reference numbers in R-channel start from 200's.
* mark shows the lead wire of R channel.

3-6. MOUNTING DIAGRAM — Class-A Amp Board —

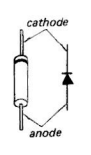
— Conductor Side —

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2SC634
2SC926A

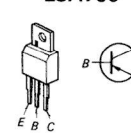


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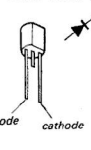
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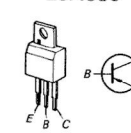
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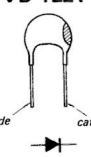
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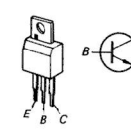
2SA835



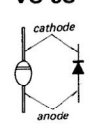
VD-1221



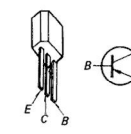
2SC1124



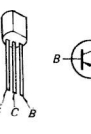
VO-9C



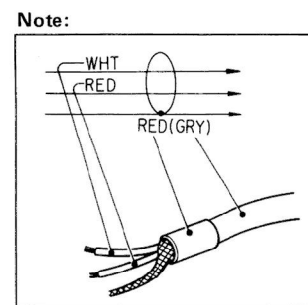
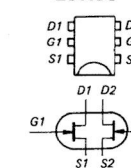
2SA705



2SA639S

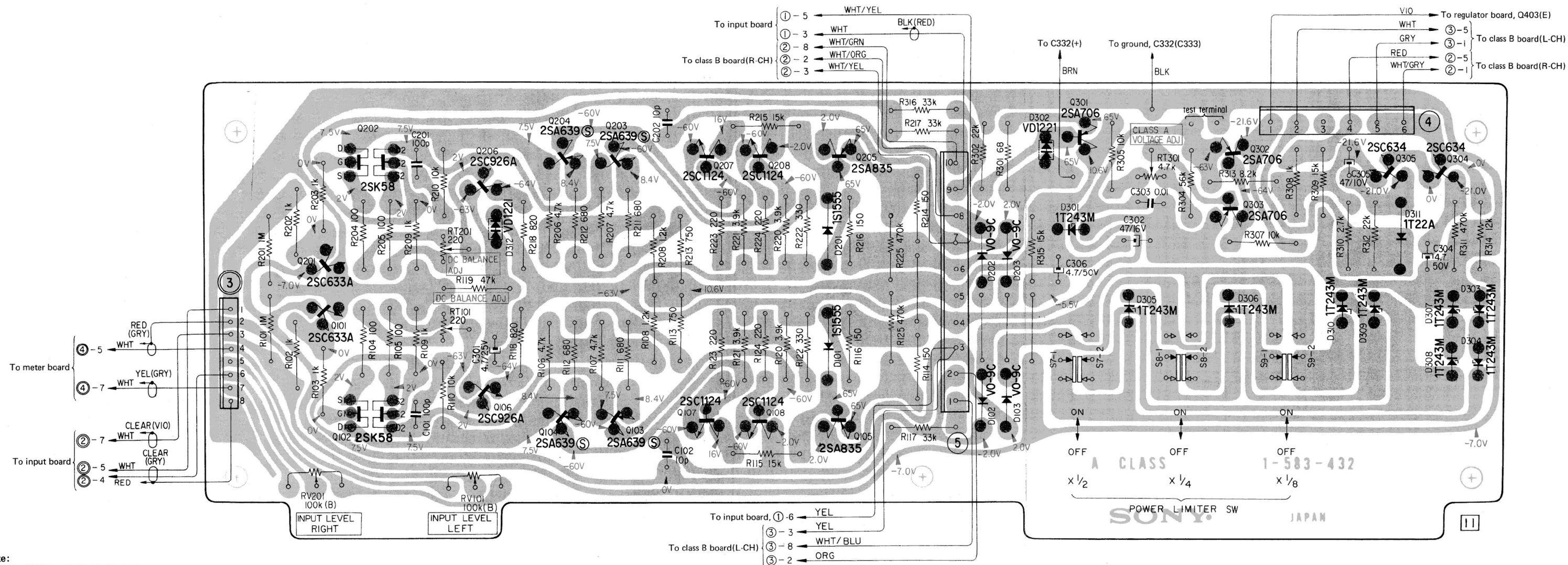


2SK58

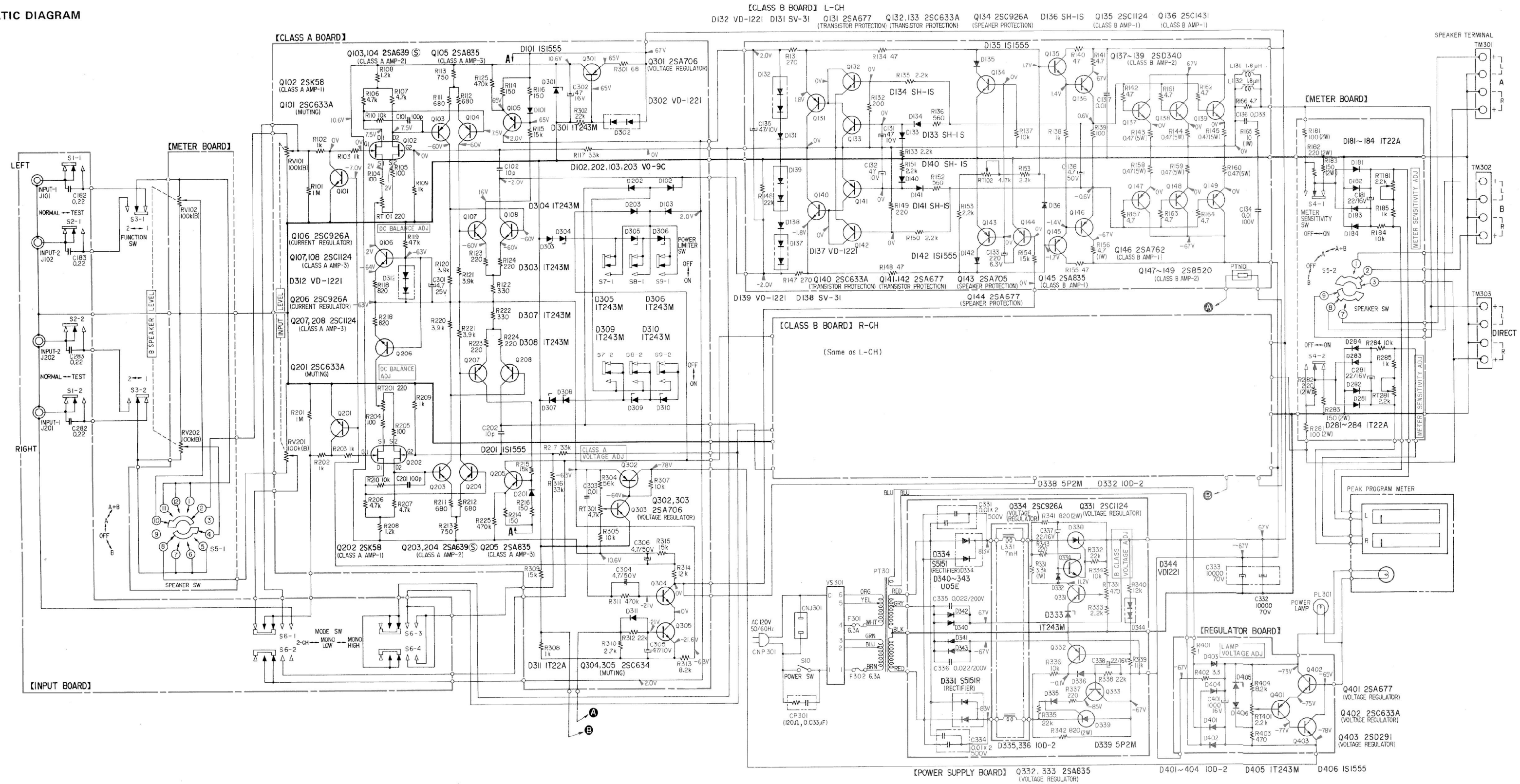


Parts Location

| | | | | | | | | | | | | | | |
|-----|--------------|--------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------|--------------|----------------------|--------------|
| Q | Q201 Q101 | Q202 Q102 | Q206 Q106 | Q204 Q104 | Q203 Q103 | Q207 Q107 | Q208 Q108 | Q205 Q105 | Q301 | Q302 Q303 | Q305 | Q304 | | |
| D | | | D312 | | | D201 D101 | D202 D102 | D203 D103 | D302 D301 | D305 | D306 | D310 D309 | D311 D307 D308 | D303 D304 |
| ADJ | | | RT201 RT101 | | | | | | | RT301 | | | | |



3.7. SCHEMATIC DIAGRAM

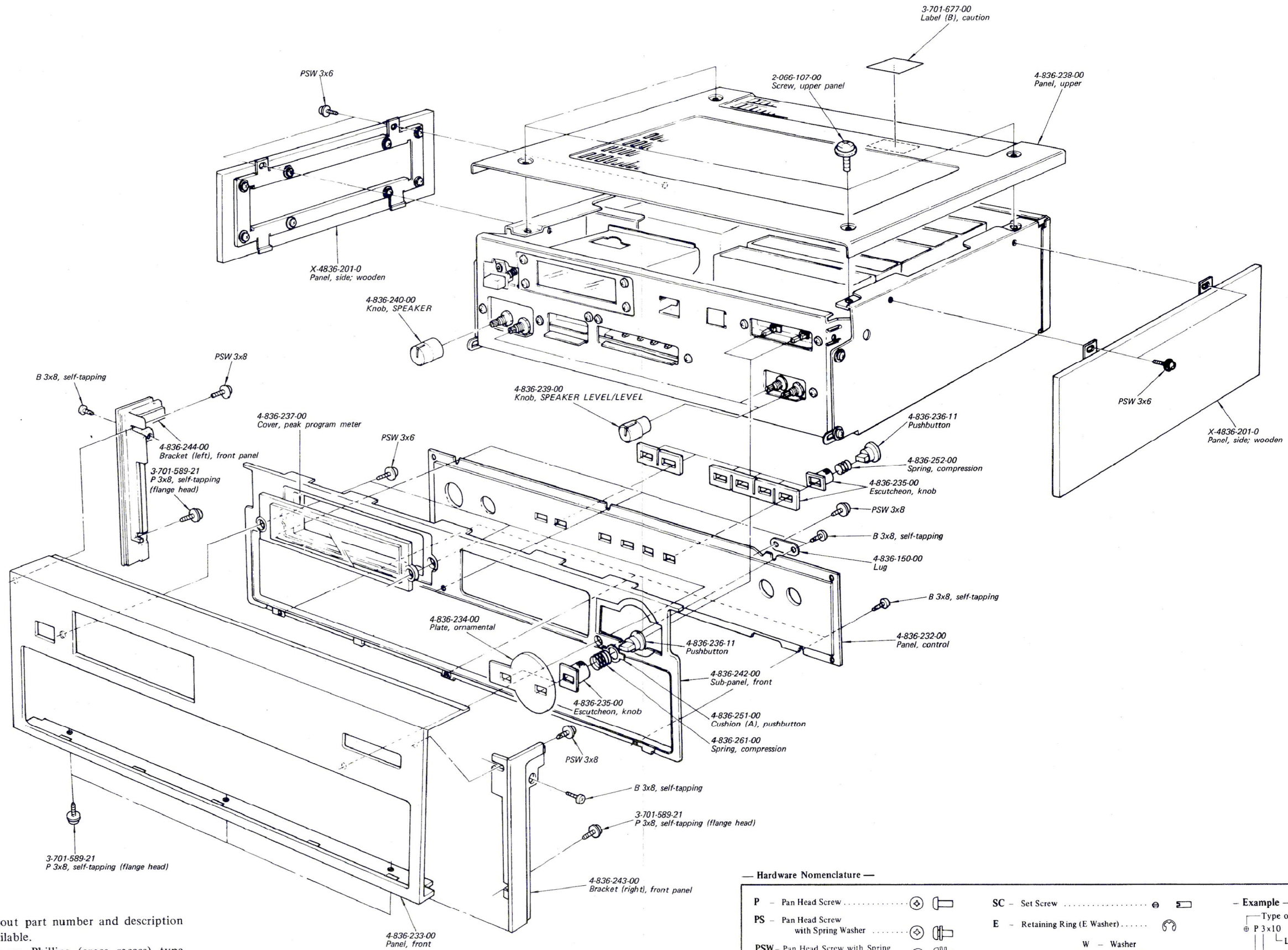


| Ref. No. | Description | Position |
|----------|-----------------------------------|----------|
| S1 | INPUT-1 SW (NORMAL-TEST) | NORMAL |
| S2 | INPUT-2 SW (NORMAL-TEST) | NORMAL |
| S3 | FUNCTION SW (INPUT-1 - INPUT-2) | INPUT-1 |
| S4 | METER SENSITIVITY SW | ON |
| S5 | SPEAKER SW (A+B-A-OFF-B) | B |
| S6 | MODE SW (2-CH-MONO LOW-MONO HIGH) | 2-CH |
| S7 | POWER LIMITER (1/4) SW | OFF |
| S8 | POWER LIMITER (1/4) SW | OFF |
| S9 | POWER LIMITER (1/2) SW | OFF |
| S10 | POWER SW | OFF |

Note:
 All resistance values are in ohms. k = 1,000 M = 1,000k
 All capacitance values are in μF except as indicated with p, which means μF .
 All voltages are dc measured with a VOM which has an input impedance of 20k ohms/volt. No signal in.
 Voltage variations may be noted because of normal production tolerances.

SECTION 4
EXPLODED VIEWS

(1)

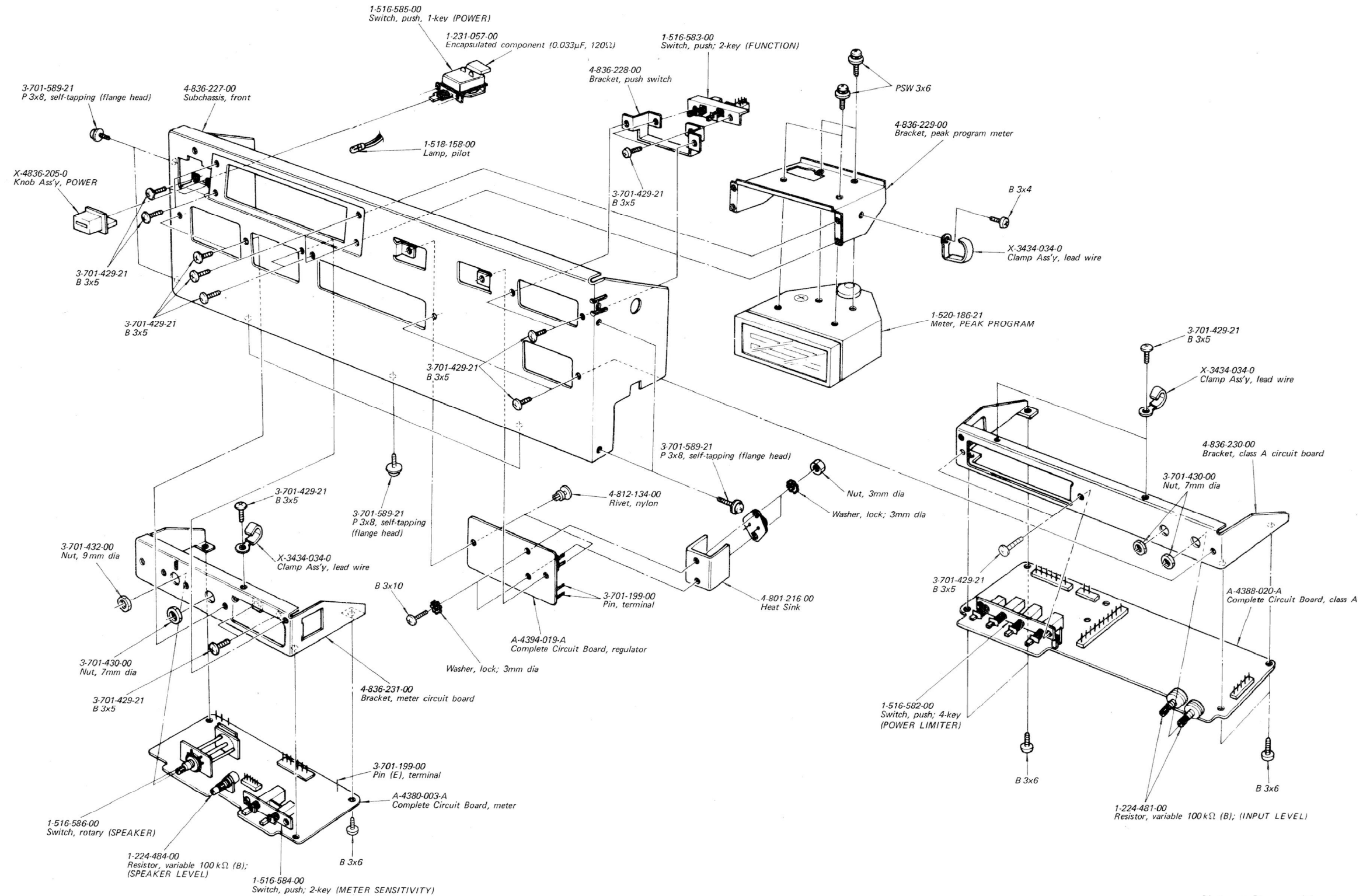


Note: ○ Items without part number and description are not available.
○ All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head

— Hardware Nomenclature —

| | | | | | | |
|-----|--|--|----|-----------------------------|--|-----------------|
| P | - Pan Head Screw | | SC | - Set Screw | | - Example - |
| PS | - Pan Head Screw with Spring Washer | | E | - Retaining Ring (E Washer) | | |
| PSW | - Pan Head Screw with Spring Washer and Washer | | W | - Washer | | |
| B | - Binding Head Screw | | SW | - Spring Washer | | |
| | | | LW | - Lock Washer | | |
| | | | N | - Nut | | |

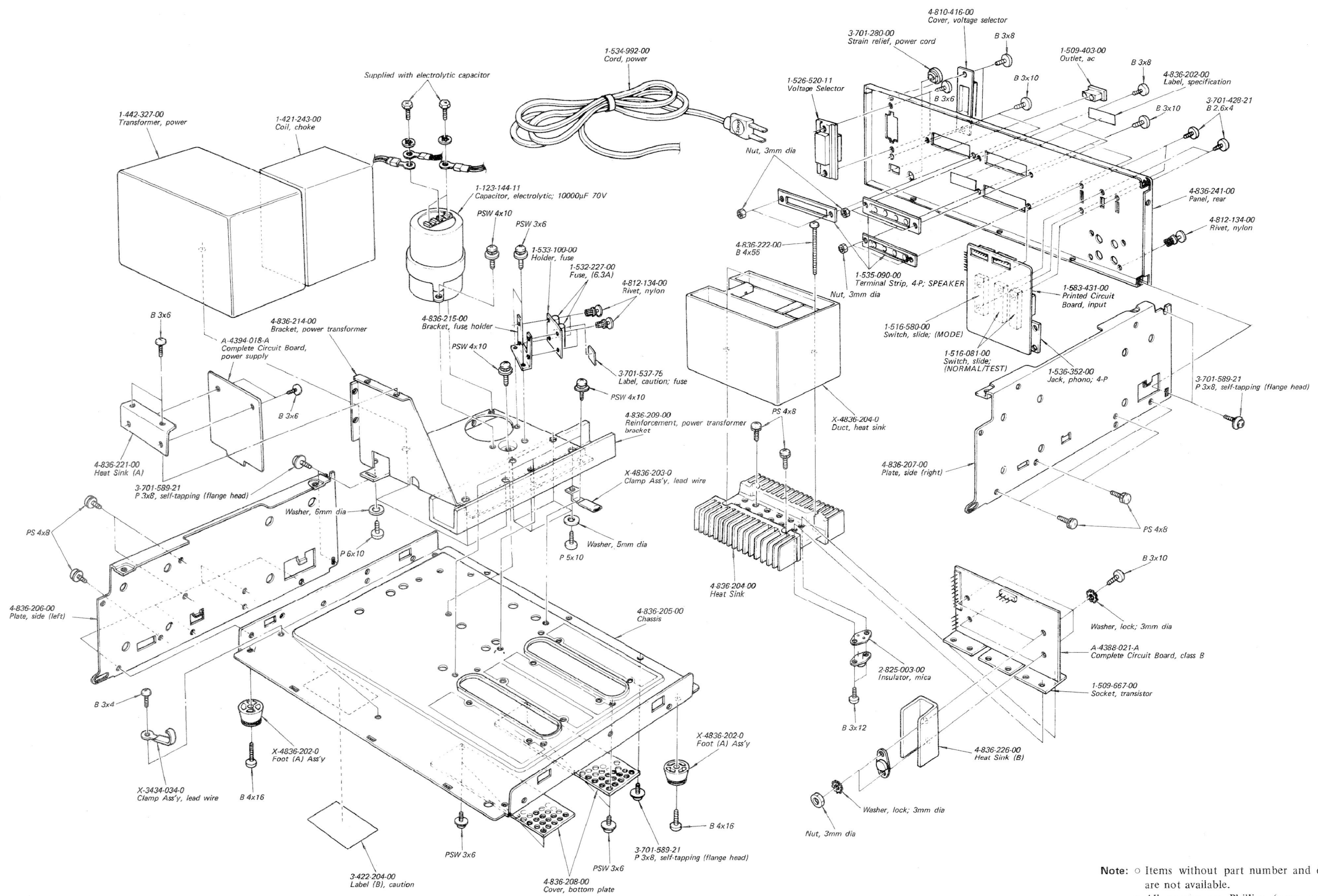
(2)



Note: ○ Items without part number and description are not available.
 ○ All screws are Phillips (cross recess) type unless otherwise noted.
 (-) = slotted head

TAN-8250 TAN-8250

(3)



Note: ○ Items without part number and description are not available.
 ○ All screws are Phillips (cross recess) type unless otherwise noted.
 (-) = slotted head

SECTION 5 ELECTRICAL PARTS LIST

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> | <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> |
|--------------------------|------------------------|--------------------|--------------------------|-----------------|--------------------|
| CIRCUIT BOARDS | | | | | |
| A-4380-003-A | Meter, complete | | Q331 | Transistor | 2SC1124 |
| A-4388-020-A | A Class, complete | | Q332,Q333 | Transistor | 2SA835 |
| A-4388-021-A | B Class, complete | | Q334 | Transistor | 2SC926A |
| A-4394-018-A | Power Supply, complete | | Q401 | Transistor | 2SA677 |
| A-4394-019-A | Regulator, complete | | Q402 | Transistor | 2SC633A |
| | | | Q403 | Transistor | 2SD291 |
| 1-583-431-00 | Input | | D101~D103 (D201~D203) | Diode | 1S1555 |
| SEMICONDUCTORS | | | | | |
| Q101(Q201) | Transistor | 2SC633A | D131(D231) | Diode | SV-31 |
| Q102(Q202) | FET | 2SK58 | D132(D232) | Diode | VD-1221 |
| Q103(Q203) | Transistor | 2SA639S | D133(D233) | Diode | SH-1S |
| Q104(Q204) | Transistor | 2SA639S | D134(D234) | Diode | SH-1S |
| Q105(Q205) | Transistor | 2SA835 | D135(D235) | Diode | 1S1555 |
| Q106(Q206) | Transistor | 2SC926A | D136(D236) | Diode | SH-1S |
| Q107(Q207) | Transistor | 2SC1124 | D137(D237) | Diode | VD-1221 |
| Q108(Q208) | Transistor | 2SC1124 | D138(D238) | Diode | SV-31 |
| Q131(Q231) | Transistor | 2SA677 | D139(D239) | Diode | VD-1221 |
| Q132(Q232) | Transistor | 2SC633A | D140(D240) | Diode | SH-1S |
| Q133(Q233) | Transistor | 2SC633A | D141(D241) | Diode | SH-1S |
| Q134(Q234) | Transistor | 2SC926A | D142(D242) | Diode | 1S1555 |
| Q135(Q235) | Transistor | 2SC1124 | D181~D184 (D281~D284) | Diode | 1T22A |
| Q136(Q236) | Transistor | 2SC1431 | D301 | Diode | 1T243M |
| Q137~Q139 (Q237~Q239) | Transistor | 2SD340 | D302 | Diode | VD-1221 |
| Q140(Q240) | Transistor | 2SC633A | D303~D310 | Diode | 1T243M |
| Q141(Q241) | Transistor | 2SA677 | D311 | Diode | 1T22A |
| Q142(Q242) | Transistor | 2SA677 | D312 | Diode | VD-1221 |
| Q143(Q243) | Transistor | 2SA705 | D331 | Diode | S5151 |
| Q144(Q244) | Transistor | 2SA677 | D332 | Diode | 10D-2 |
| Q145(Q245) | Transistor | 2SA835 | D333 | Diode | 1T243M |
| Q146(Q246) | Transistor | 2SA762 | D334 | Diode | S5151R |
| Q147~Q149 (Q247~Q249) | Transistor | 2SB520 | D335 | Diode | 10D-2 |
| Q301~Q303 | Transistor | 2SA706 | D336 | Diode | 10D-2 |
| Q304~Q305 | Transistor | 2SC634A | D337 | ----- | |
| | | | D338 | Diode | 5P2M |
| | | | D339 | Diode | 5P2M |
| | | | D340~D343 | Diode | UO-5E |
| | | | D344 | Diode | VD-1221 |

| Ref. No. | Part No. | Description |
|-----------|----------|--------------|
| D401~D404 | | Diode 10D-2 |
| D405 | | Diode 1T243M |
| D406 | | Diode 1S1555 |

| | | |
|-------------------|--------------|----------|
| Pth301, Pth302 | 1-800-340-00 | Posistor |
|-------------------|--------------|----------|

CAPACITORS

Capacitors listed here are electrolytic type unless otherwise specified and in μF except as indicated with p (p means $\mu\mu$).

| | | | | |
|------------|--------------|-----------------|------|---------------------------|
| C101(C201) | 1-102-973-11 | 100p | 50V | ceramic |
| C102(C202) | 1-102-947-11 | 10p | 50V | ceramic |
| C131(C231) | 1-121-352-11 | 47 | 10V | |
| C132(C232) | 1-121-352-11 | 47 | 10V | |
| C133(C233) | 1-121-419-11 | 220 | 6.3V | |
| C134(C234) | 1-108-657-12 | 0.01 | 100V | mylar |
| C135(C235) | 1-121-352-11 | 47 | 10V | |
| C136(C236) | 1-108-843-12 | 0.033 | 50V | mylar |
| C137(C237) | 1-108-657-12 | 0.01 | 100V | mylar |
| C138(C238) | 1-121-396-11 | 4.7 | 50V | |
| C181(C281) | 1-121-990-11 | 22 | 16V | |
| C182(C282) | 1-105-677-12 | 0.22 | 50V | mylar |
| C183(C283) | 1-105-677-12 | 0.22 | 50V | mylar |
| C301 | 1-121-395-11 | 4.7 | 25V | |
| C302 | 1-121-409-11 | 47 | 25V | |
| C303 | 1-108-657-12 | 0.01 | 100V | mylar |
| C304 | 1-121-396-11 | 4.7 | 50V | |
| C305 | 1-121-352-11 | 47 | 10V | |
| C306 | 1-121-396-11 | 4.7 | 50V | |
| C331 | 1-102-355-11 | 0.01 (2 pieces) | 500V | ceramic |
| C332/C333 | 1-123-144-11 | 10000 | 70V | electrolytic (block type) |
| C334 | 1-102-355-11 | 0.01 (2 pieces) | 500V | ceramic |
| C335 | 1-105-757-12 | 0.022 | 200V | mylar |
| C336 | 1-105-757-12 | 0.022 | 200V | mylar |
| C337 | 1-121-990-11 | 22 | 16V | |
| C338 | 1-121-990-11 | 22 | 16V | |
| C401 | 1-121-245-11 | 1000 | 16V | |

| Ref. No. | Part No. | Description |
|----------|----------|-------------|
|----------|----------|-------------|

RESISTORS

All resistors are in Ω . $\frac{1}{4}\text{W}$, $\pm 5\%$ carbon resistors (except particular type) are omitted. Check schematic diagram for the resistance values. k = 1000, M = 1000 k.

| | | | | |
|--------------------------|----------------|----------|-----------------------------|-------------|
| R109(R209) | 1-211-913-11 | 1k | $\pm 1\%$ | carbon |
| R117(R217) | 1-210-509-11 | 33k | $\pm 1\%$ | carbon |
| R141(R241) | 1-209-144-21 | 4.7 | 1W | carbon |
| R143~R145 (R243~R245) |) 1-217-158-11 | 0.47 | 5W | metal |
| R156(R256) | 1-209-144-21 | 4.7 | 1W | carbon |
| R158~R160 (R258~R260) |) 1-217-158-11 | 0.47 | 5W | metal |
| R165(R265) | 1-209-148-21 | 10 | 1W | carbon |
| R181(R281) | 1-206-640-11 | 100 | 2W | metal-oxide |
| R182(R282) | 1-206-648-11 | 220 | 2W | metal-oxide |
| R183(R283) | 1-206-644-11 | 150 | 2W | metal-oxide |
| R316 | 1-210-509-11 | 33k | $\pm 1\%$ | carbon |
| R331 | 1-206-099-11 | 3.3k | 1W | metal-oxide |
| R341(R342) | 1-206-128-11 | 820 | 2W | metal-oxide |
| RT101(RT201) | 1-224-550-00 | 220 | adjustable | |
| RT102(RT202) | 1-224-490-00 | 4.7k | adjustable | |
| RT181(RT281) | 1-224-250-00 | 2.2k | adjustable | |
| RT301 | 1-224-251-00 | 4.7k | adjustable | |
| RT331 | 1-224-488-00 | 470 | adjustable | |
| RT401 | 1-224-489-00 | 2.2k | adjustable | |
| RV101(RV201) | 1-224-481-00 | 100k (B) | variable (INPUT LEVEL) | |
| RV102(RV202) | 1-224-484-00 | 100k (B) | variable (SPEAKER LEVEL) | |

SWITCHES

| | | |
|-------|--------------|---------------------------------------|
| S1,S2 | 1-516-081-00 | Slide (NORMAL/TEST) |
| S3 | 1-516-583-00 | Pushbutton, 2-key (FUNCTION) |
| S4 | 1-516-584-00 | Pushbutton, 2-key (METER SENSITIVITY) |
| S5 | 1-516-586-00 | Rotary (SPEAKER) |

| Ref. No. | Part No. | Description |
|-----------|----------|--------------|
| D401~D404 | | Diode 10D-2 |
| D405 | | Diode 1T243M |
| D406 | | Diode 1S1555 |

| | | |
|-------------------|--------------|----------|
| Pth301, Pth302 | 1-800-340-00 | Posistor |
|-------------------|--------------|----------|

CAPACITORS

Capacitors listed here are electrolytic type unless otherwise specified and in μF except as indicated with p (p means $\mu\mu$).

| | | | | |
|------------|--------------|-----------------|------|---------------------------|
| C101(C201) | 1-102-973-11 | 100p | 50V | ceramic |
| C102(C202) | 1-102-947-11 | 10p | 50V | ceramic |
| C131(C231) | 1-121-352-11 | 47 | 10V | |
| C132(C232) | 1-121-352-11 | 47 | 10V | |
| C133(C233) | 1-121-419-11 | 220 | 6.3V | |
| C134(C234) | 1-108-657-12 | 0.01 | 100V | mylar |
| C135(C235) | 1-121-352-11 | 47 | 10V | |
| C136(C236) | 1-108-843-12 | 0.033 | 50V | mylar |
| C137(C237) | 1-108-657-12 | 0.01 | 100V | mylar |
| C138(C238) | 1-121-396-11 | 4.7 | 50V | |
| C181(C281) | 1-121-990-11 | 22 | 16V | |
| C182(C282) | 1-105-677-12 | 0.22 | 50V | mylar |
| C183(C283) | 1-105-677-12 | 0.22 | 50V | mylar |
| C301 | 1-121-395-11 | 4.7 | 25V | |
| C302 | 1-121-409-11 | 47 | 25V | |
| C303 | 1-108-657-12 | 0.01 | 100V | mylar |
| C304 | 1-121-396-11 | 4.7 | 50V | |
| C305 | 1-121-352-11 | 47 | 10V | |
| C306 | 1-121-396-11 | 4.7 | 50V | |
| C331 | 1-102-355-11 | 0.01 (2 pieces) | 500V | ceramic |
| C332/C333 | 1-123-144-11 | 10000 | 70V | electrolytic (block type) |
| C334 | 1-102-355-11 | 0.01 (2 pieces) | 500V | ceramic |
| C335 | 1-105-757-12 | 0.022 | 200V | mylar |
| C336 | 1-105-757-12 | 0.022 | 200V | mylar |
| C337 | 1-121-990-11 | 22 | 16V | |
| C338 | 1-121-990-11 | 22 | 16V | |
| C401 | 1-121-245-11 | 1000 | 16V | |

| Ref. No. | Part No. | Description |
|----------|----------|-------------|
|----------|----------|-------------|

RESISTORS

All resistors are in Ω . $\frac{1}{4}\text{W}$, $\pm 5\%$ carbon resistors (except particular type) are omitted. Check schematic diagram for the resistance values. k = 1000, M = 1000 k.

| | | | | |
|--------------------------|----------------|----------|-----------------------------|-------------|
| R109(R209) | 1-211-913-11 | 1k | $\pm 1\%$ | carbon |
| R117(R217) | 1-210-509-11 | 33k | $\pm 1\%$ | carbon |
| R141(R241) | 1-209-144-21 | 4.7 | 1W | carbon |
| R143~R145 (R243~R245) |) 1-217-158-11 | 0.47 | 5W | metal |
| R156(R256) | 1-209-144-21 | 4.7 | 1W | carbon |
| R158~R160 (R258~R260) |) 1-217-158-11 | 0.47 | 5W | metal |
| R165(R265) | 1-209-148-21 | 10 | 1W | carbon |
| R181(R281) | 1-206-640-11 | 100 | 2W | metal-oxide |
| R182(R282) | 1-206-648-11 | 220 | 2W | metal-oxide |
| R183(R283) | 1-206-644-11 | 150 | 2W | metal-oxide |
| R316 | 1-210-509-11 | 33k | $\pm 1\%$ | carbon |
| R331 | 1-206-099-11 | 3.3k | 1W | metal-oxide |
| R341(R342) | 1-206-128-11 | 820 | 2W | metal-oxide |
| RT101(RT201) | 1-224-550-00 | 220 | adjustable | |
| RT102(RT202) | 1-224-490-00 | 4.7k | adjustable | |
| RT181(RT281) | 1-224-250-00 | 2.2k | adjustable | |
| RT301 | 1-224-251-00 | 4.7k | adjustable | |
| RT331 | 1-224-488-00 | 470 | adjustable | |
| RT401 | 1-224-489-00 | 2.2k | adjustable | |
| RV101(RV201) | 1-224-481-00 | 100k (B) | variable (INPUT LEVEL) | |
| RV102(RV202) | 1-224-484-00 | 100k (B) | variable (SPEAKER LEVEL) | |

SWITCHES

| | | |
|-------|--------------|---------------------------------------|
| S1,S2 | 1-516-081-00 | Slide (NORMAL/TEST) |
| S3 | 1-516-583-00 | Pushbutton, 2-key (FUNCTION) |
| S4 | 1-516-584-00 | Pushbutton, 2-key (METER SENSITIVITY) |
| S5 | 1-516-586-00 | Rotary (SPEAKER) |

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> |
|-----------------|-----------------|--------------------------------------|
| S6 | 1-516-580-00 | Slide (MODE) |
| S7~S9 | 1-516-582-00 | Pushbutton, 4-key (POWER LIMITER) |
| S10 | 1-516-585-00 | Pushbutton (POWER) |

MISCELLANEOUS

| | | |
|--------------------------|--------------|---|
| CNJ301 | 1-509-403-00 | Outlet, ac |
| CNP301 | 1-534-992-00 | Cord, power |
| CP301 | 1-231-057-00 | Encapsulated Component, 0.033 μ F + 120 Ω |
| F301,F302 | 1-532-227-00 | Fuse, 6.3A |
| J101(J201) J102(J202) | 1-536-352-00 | Jack, phono; 4-P |
| L131(L231) L132(L232) | 1-407-592-00 | Microinductor, 1.8 μ H |
| L331 | 1-421-243-00 | Coil, choke |
| PL301 | 1-518-158-00 | Lamp, POWER |
| PT301 | 1-442-327-00 | Transformer, power |
| TM301~ TM303 | 1-535-090-00 | Terminal Strip (SPEAKER) |
| VS301 | 1-526-520-11 | Selector, voltage |
| | 1-508-649-00 | Connector, 10-P (male) |
| | 1-508-650-00 | Connector, 6-P (male) |
| | 1-508-652-00 | Connector, 8-P (male) |
| | 1-508-692-00 | Connector, 6-P (male) |

| <u>Ref. No.</u> | <u>Part No.</u> | <u>Description</u> |
|-----------------|-----------------|-----------------------|
| | 1-508-694-00 | Connector, 8-P (male) |
| | 1-509-667-00 | Socket, transistor |
| | 1-520-186-21 | Meter, PEAK PROGRAM |
| | 1-533-100-00 | Holder, fuse |
| | 1-536-354-00 | Pin, terminal |

CARTON AND ACCESSORIES

| | |
|--------------|---------------------------------------|
| X-3701-029-0 | Card Ass'y, warranty |
| X-4490-002-0 | Cloth Ass'y, polishing |
| 1-506-138-11 | Plug, phono (red) |
| 1-506-138-12 | Plug, phono (white) |
| 3-701-020-00 | Bag, polyethylene; instruction manual |
| 3-701-300-00 | Bag, polyethylene; unit |
| 3-701-730-00 | Bag, polyethylene; IBM card |
| 3-701-742-00 | Card, IBM |
| 3-780-427-21 | Manual, instruction |
| 3-793-765-21 | Sheet, check |
| 4-836-256-00 | Carton |
| 4-836-257-00 | Cushion, side |
| 4-836-258-00 | Cushion, lower |
| 4-836-259-00 | Cushion |

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