

HIGH TECH SERVICES  
228 West Broad Street  
FALLS CHURCH, VA 22046  
(703) 534-1733

# TA-1080



## Specifications (1)

**System:** All Silicon Transistor integrated stereo amplifier

**Circuit:** Quasi-complementary symmetry SEPP OTL circuit  
30 transistors, 21 diodes

**Transistor:** 2SC401 (15) 2SC293 (3) 2SC297 (1) 2SC299 (5) 2SD45 (4) 2SA527 (2)

**Diode:** FR-1U (4) DS2M (2) 1T206 (10) SV6 (4) 2SF-103 (SCR) (1)

**Power requirement:** AC 100, 117, 220, 240V. 50/60 Hz

**Power consumption:** Approx. 25W at zero signal  
Approx. 200W at maximum output

**Dimensions:** 400(W)×145(H)×310 mm(D) (15 $\frac{3}{4}$ ×5 $\frac{3}{4}$ ×12 $\frac{1}{4}$ " )

**Weight:** Approx. 11 kgs. (24 lbs.)

# SONY®

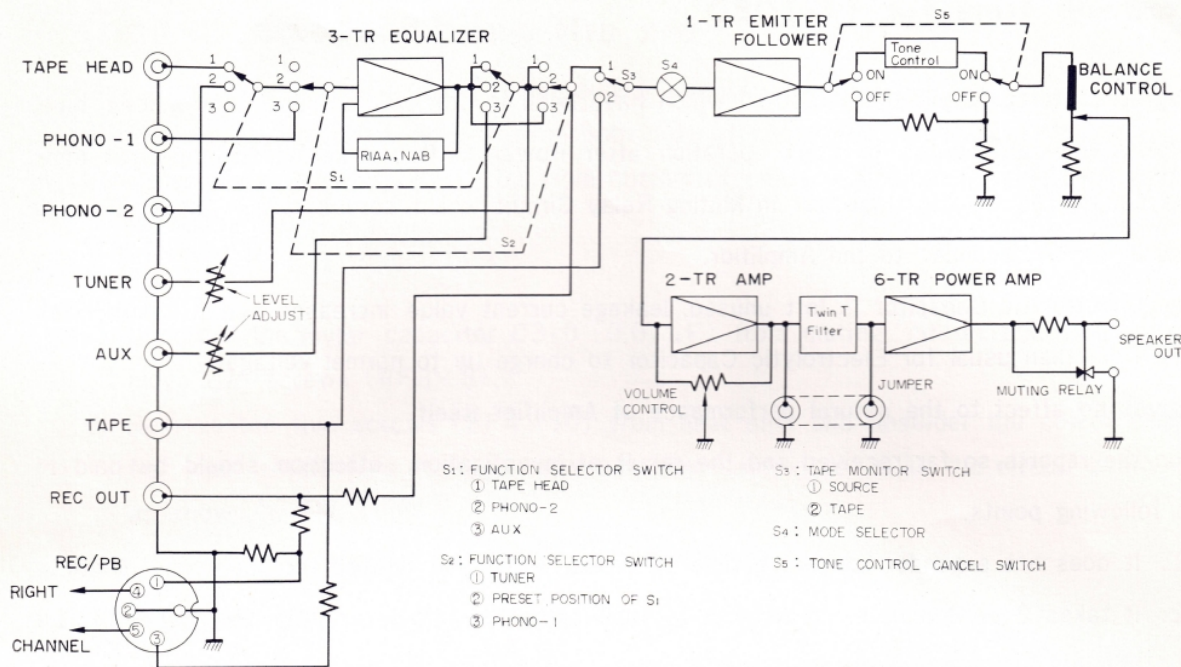
## SERVICING GUIDE



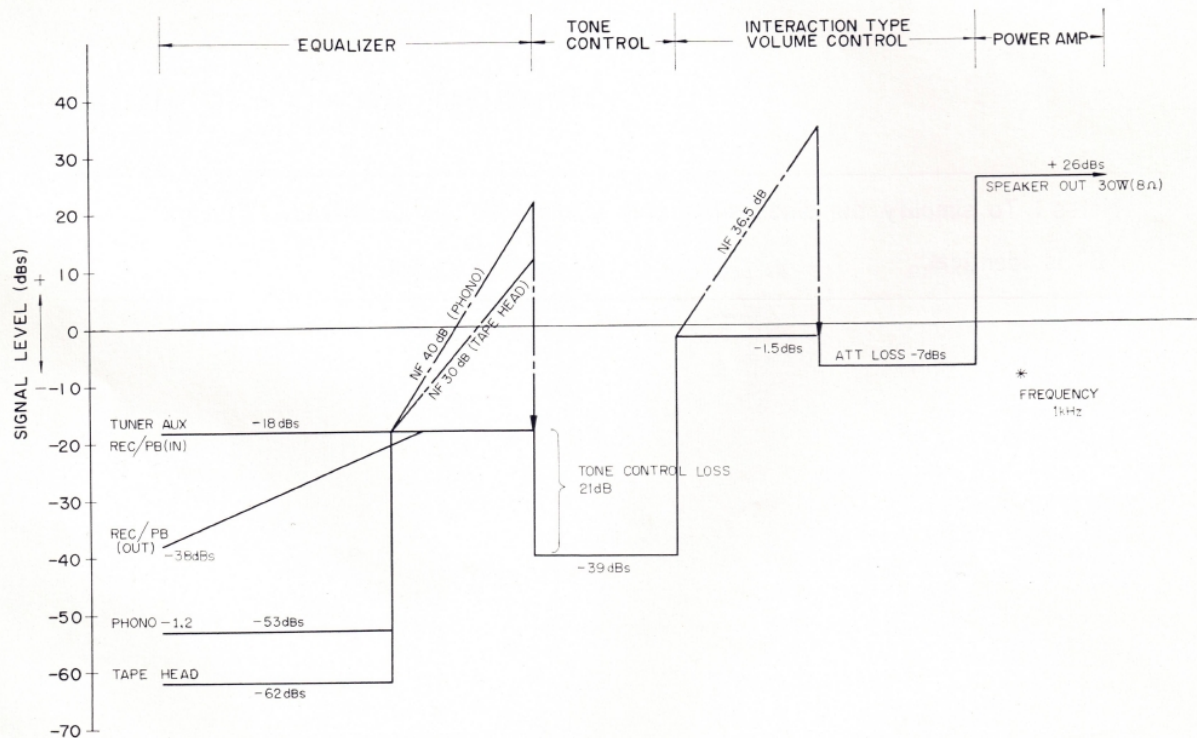
## Specifications (2)

|                                    |                                                                                    |                                                                                 |
|------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Power output:</b>               | Non-clip music power                                                               | 100W both channels (8 ohms)                                                     |
|                                    | Music power (IHFM)                                                                 | 90W both channels (8 ohms)                                                      |
|                                    | Rated output                                                                       | 30W per channel (8 ohms)                                                        |
|                                    |                                                                                    | 27W per channel (16 ohms)                                                       |
| <b>Harmonic distortion:</b>        | Less than 0.15% at rated output (less than 0.1% in power amplifier section)        |                                                                                 |
|                                    | (IHFM) Less than 0.1% at 500mW output (less than 0.05% in power amplifier section) |                                                                                 |
| <b>Intermodulation distortion:</b> | Less than 0.4% at rated output, 70 Hz : 7 KHz = 4 : 1                              |                                                                                 |
| <b>Frequency response:</b>         | Power amplifier                                                                    |                                                                                 |
|                                    | 15 Hz ~ 100 KHz                                                                    | $\begin{matrix} +0 \\ -1 \end{matrix}$ db at rated output                       |
|                                    | Tuner, Aux, Tape                                                                   |                                                                                 |
|                                    | 30 Hz ~ 100 KHz                                                                    | $\begin{matrix} +0 \\ -2 \end{matrix}$ db (twin-T low-cut filter below 30Hz)    |
|                                    | Phono-1, Phono-2                                                                   |                                                                                 |
|                                    | 30 Hz ~ 15,000 Hz                                                                  | $\pm 0.5$ db (RIAA)                                                             |
|                                    | Tape head                                                                          |                                                                                 |
|                                    | 30 Hz ~ 15,000 Hz                                                                  | $\pm 0.5$ db (NAB)                                                              |
| <b>Damping factor:</b>             | More than 40 at 8 ohm load                                                         |                                                                                 |
| <b>Residual noise:</b>             | Less than 0.05 $\mu$ W at 8 ohm load                                               |                                                                                 |
| <b>S/N ratio:</b>                  | Aux, Tuner (closed circuit)                                                        | more than 80 db                                                                 |
|                                    | (IHFM) Phono-1 ( " )                                                               | more than 70 db                                                                 |
|                                    | Phono-2 ( " )                                                                      | more than 70 db                                                                 |
|                                    | Tape head ( " )                                                                    | more than 60 db                                                                 |
| <b>Inputs:</b>                     | Tape head (NAB, 19cms), Phono-1 (RIAA)                                             |                                                                                 |
|                                    | Phono-2 (RIAA), Tuner, Aux, Tape                                                   |                                                                                 |
| <b>Outputs:</b>                    | Rec out (output level 120mV), Speaker out                                          |                                                                                 |
| <b>Integrated record/playback</b>  | Input level                                                                        | 500mV                                                                           |
|                                    | Connector: Output level                                                            | 12mV                                                                            |
| <b>Input sensitivity:</b>          | Tape head                                                                          | 0.7mV, Impedance: more than 100k ohms at 1 KHz<br>more than 200k ohms at 10 KHz |
|                                    | Phono-1, Phono-2                                                                   | 2.3mV, Impedance: approx. 47k ohms                                              |
|                                    | Tuner, Aux                                                                         | 120mV (adjustable). Impedance: more than 100k ohms                              |
|                                    | Tape                                                                               | 120mV, Impedance: more than 100k ohms                                           |
|                                    | <b>AC outlet:</b>                                                                  | Switched 2, unswitched 1<br>300W in total                                       |
|                                    | <b>Tone control:</b>                                                               | Bass $\pm 10$ db at 100 Hz<br>Treble $\pm 10$ db at 10 KHz                      |

## TA-1080 BLOCK DIAGRAM



## TA-1080 LEVEL DIAGRAM





## Warm-up Time for TA-1080

Integrated Stereo Amplifier TA-1080 which have been in stock or not used for a long time, it takes several minutes to start operation after Power Switch is set on for the first time. It is due to Electrolytic Capacitor in Muting Relay Circuit which serves to give proper time-lag (usually 6~7 seconds) to the Amplifier.

When Electrolytic Capacitor is left unused, leakage current value increases and it takes much more time than usual for Electrolytic Capacitor to charge up to normal voltage.

It gives no affect to the natural performance of Amplifier itself.

Upon the reports so far received and the result of investigation, attention should be paid to the following points.

1. It does not engender excessive time-lag to leave the unit unused for about one month.
2. It takes 2 or 3 minutes at longest to start operation, however only one set took 10 minutes in very rare case.

We hope you will take this phenomena in throughly especially when you set Power Switch on in customer's presence for the first time.

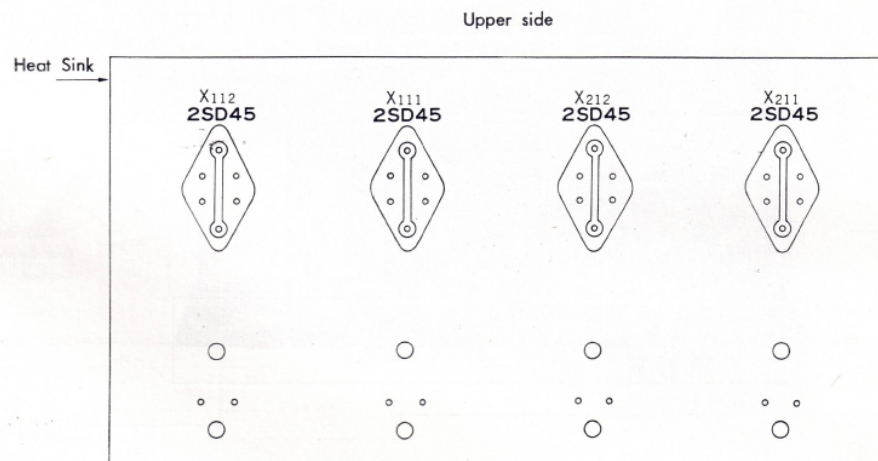
Notes : To simplify the discussions only channel "1" is described. Channel "2" is identical.



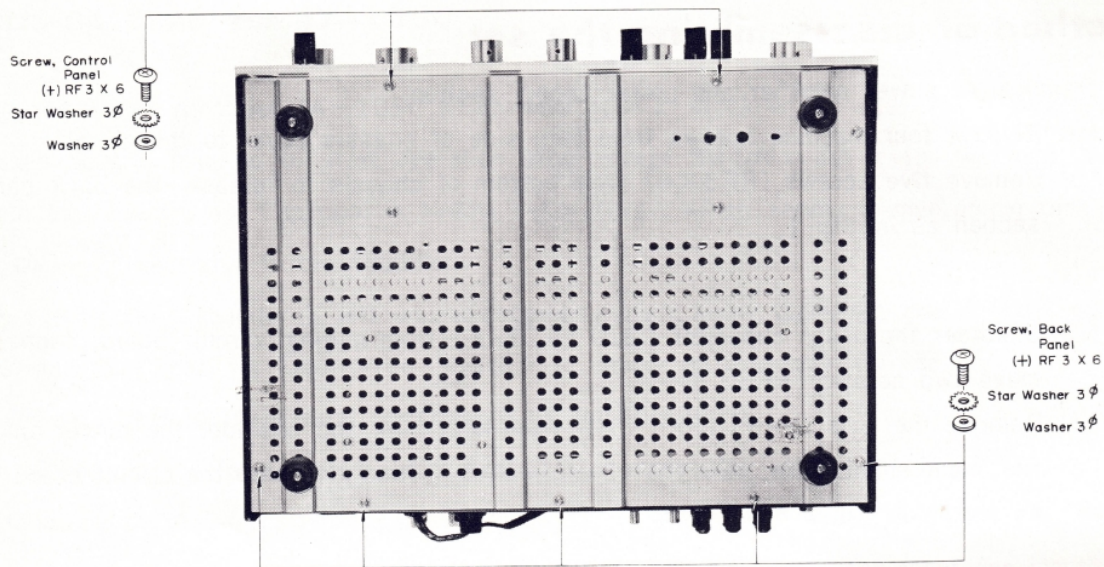
## Method of disassembling the set

- (1) Removal of power amplifier and power supply section.
  - (a) Remove four machine screws from both side of chassis cover to take it off.
  - (b) Remove five screws (RF3×6) from bottom of chassis to release the back panel section as in Fig. 1.
  - (c) Unsolder the mylar capacitor C310 ( $0.01\mu\text{F}$ ) from muting circuit board, then remove two screws (RF3×8).
  - (d) Remove the five screws (RF4×10) from heat sink and unsolder the power amplifier input shield wire, now you can turn that section to make the circuit board up as shown in Fig. 2 and Fig. 3.
- (2) Removal of preamplifier section and control panel.
  - (a) After taking off the chassis cover, remove the two screws (RF3×6) from front side of bottom plate as shown in Fig. 1.
  - (b) Remove the four screws (RF3×6) from both side of the chassis as shown in Fig. 3. and control panel will come free.
  - (c) The service will be easily done after following above procedures as shown in Fig. 4.

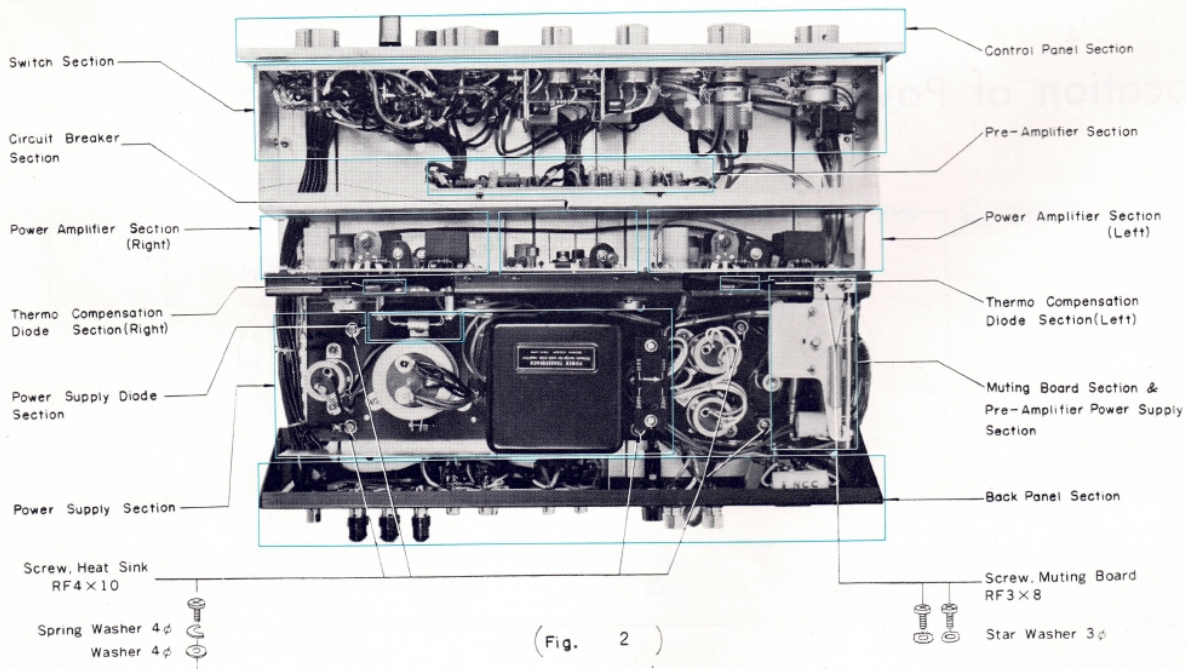
## Location of Power Transistor





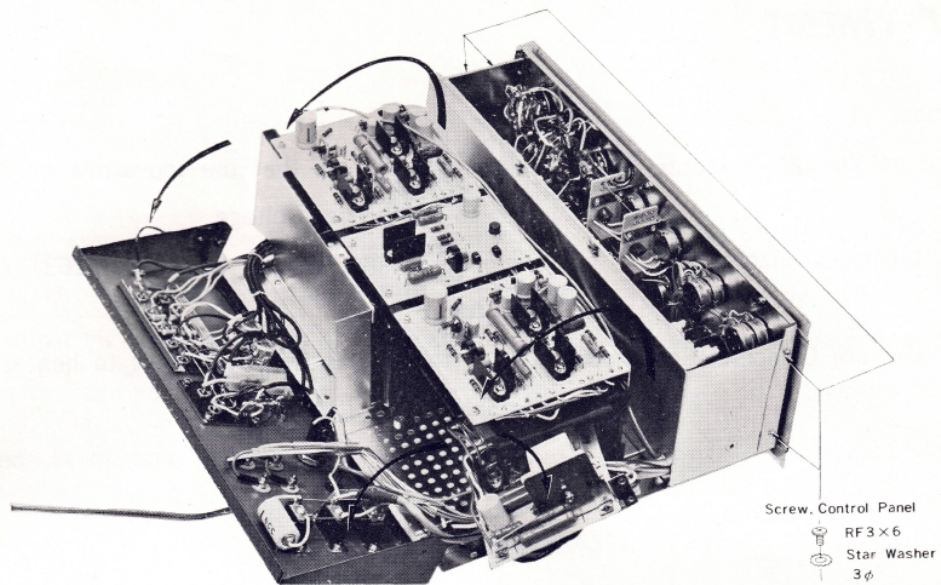


(Fig. 1 )

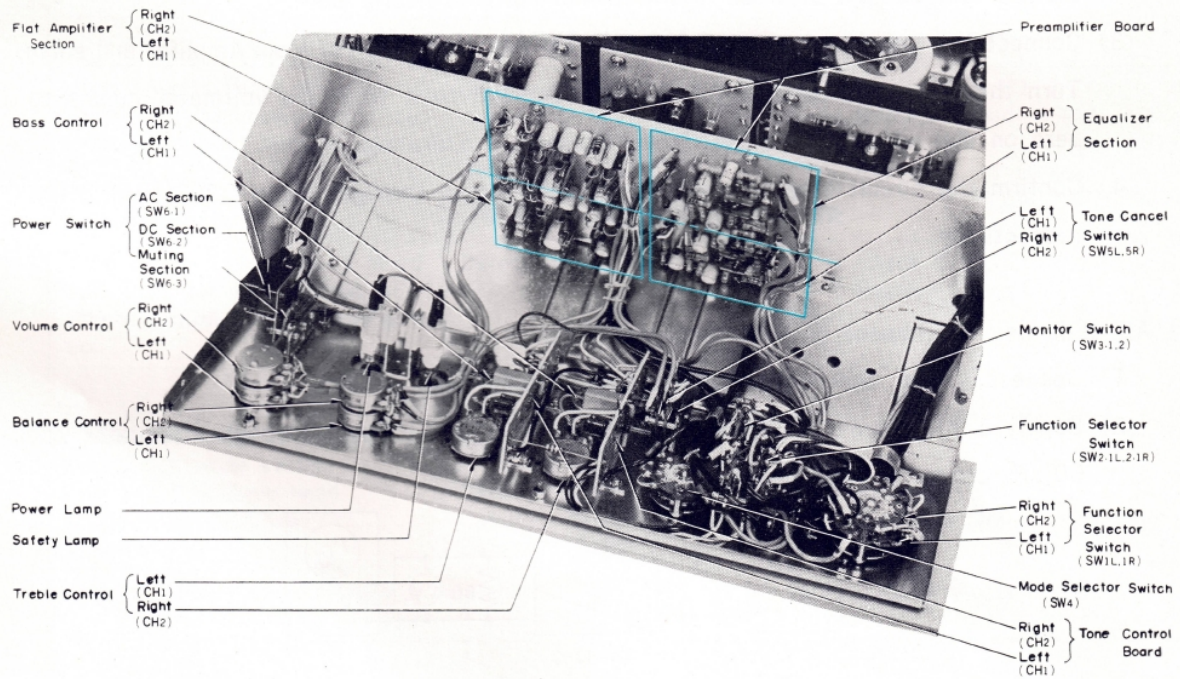


(Fig. 2 )





( Fig. 3 )



( Fig. 4 )



## ADJUSTMENT

### Preparation

- \* AC Line Voltage Selector Plug ; Insert the plug so that the top arrow of the plug points to the proper voltage.
- \* AC Balance Control ; Turn adjustable resistor (R163), (R263) clockwise to the full.
- \* Temperature Compensation Diode ; Check the Diodes being attached to heat sink. (Main Amplifier)
- \* Output Load ; Connect an 8 ohms resistor instead of speaker.
- \* Fuse ; Insert a 5A fuse.

### (A) Circuit Breaker Block Adjustment

Please make it a rule to adjust the circuit breaker block before fix it to the chassis.

- 1) Turn the adjustable resistor 200 ohms, (R309), counterclockwise to the full.
- 2) Feed DC. 3.5V between Diode D303 or D304 and earth. Then make the power switch on.

Confirm the voltage between +B line and earth is nearly 85V.

- 3) Connect the voltmeter between +B line of the first stage of Main Amplifier and earth. Turn the adjustable resistor R309 clockwise and fix it when the voltmeter comes to zero on dial which shows the circuit breaker is operating.
- 4) Confirm the circuit breaker operates by each signal through diode D303 and D304 respectively.

### (B) AC Balance Adjustment of Main Amplifier block.

- 1) Connect VTVM and Oscilloscope across 8 ohms load resistor.
- 2) Supply 1 KHz signal to the input terminal (X<sub>107</sub> or 207 Base) through attenuator and 50  $\mu$ F capacitor as shown in Fig.1.

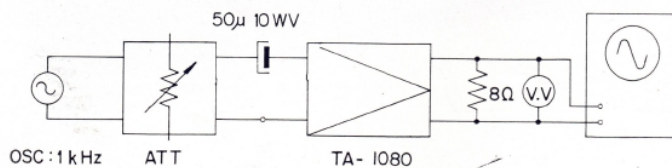


Fig. 1



- 3) Increase the signal gradually and turn the adjustable resistor ( $50K\Omega$ , R160, R260) to get the both upper and lower side of wave form are clipped at the same time as shown in Fig. 2.



Fig. 2

(C) DC. Balance Adjustment of Main Amplifier block.

- 1) Connect a VTVM (d-c 0.1V full scale) between R176 (R276) and earth.
- 2) Decrease the input signal level down to 50dBs by attenuator.
- 3) Turn the bias adjustment resistor R136 (R236) to obtain 25mV reading on VTVM.

Remarks : Repeat procedure (B), (C) two or three times.

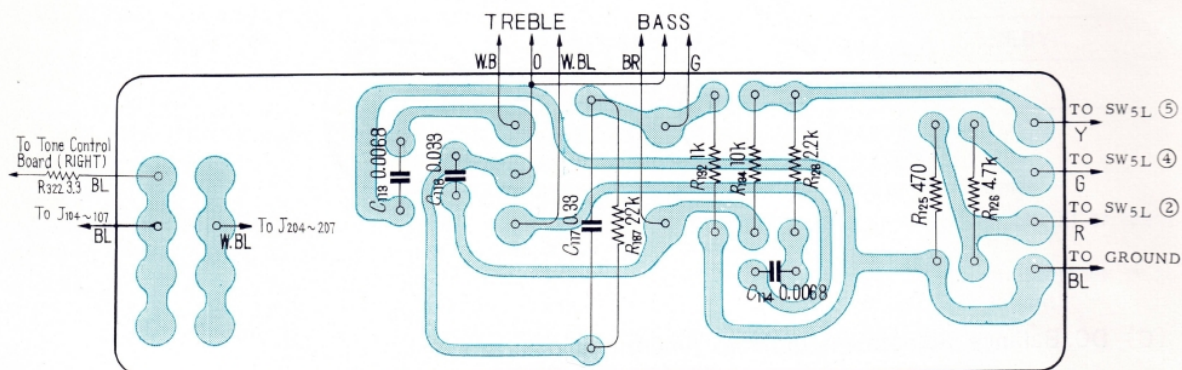
(D) The other Items.

- 1) Relay operation time will be within 15sec. after power switch turned on at first. Operation time becomes 10~4sec. after switched on and off two or three times. The difference of time between channel "1" and "2" should be less than 10 sec.
- 2) Phase of both channels must be same.
- 3) The difference of level between channel 1 and 2 must be less than 2 dB when the input level control is at maximum position.
- 4) Output level should be decreased to zero by adjusting input level control.
- 5) When make the short circuit of the speaker output, the circuit breaker must be work perfectly.

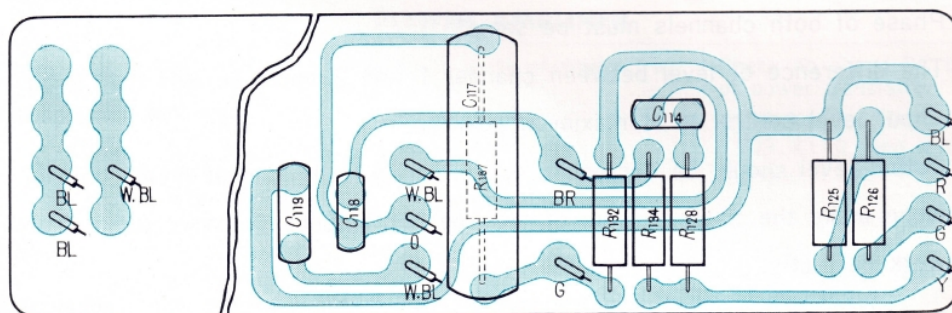


## TONE CONTROL BOARD

— Conductor Side —

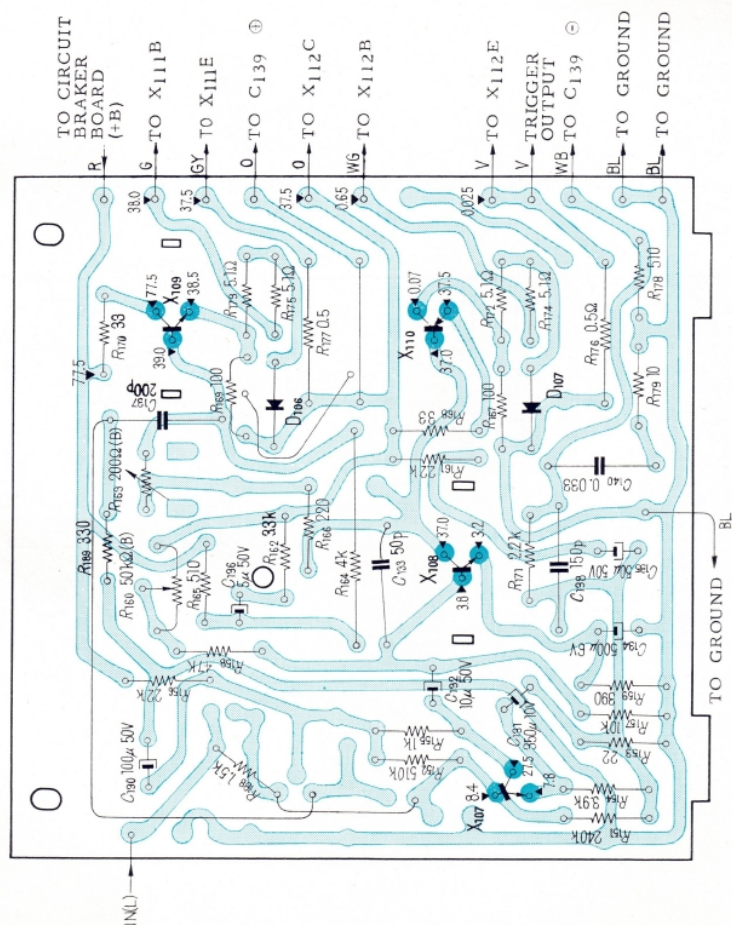
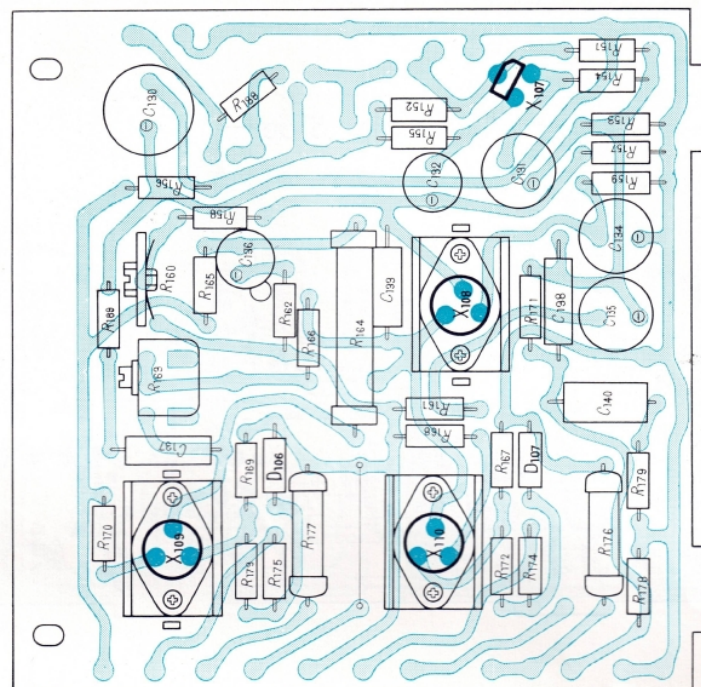


— Components Side —



## POWER AMPLIFIER BOARD

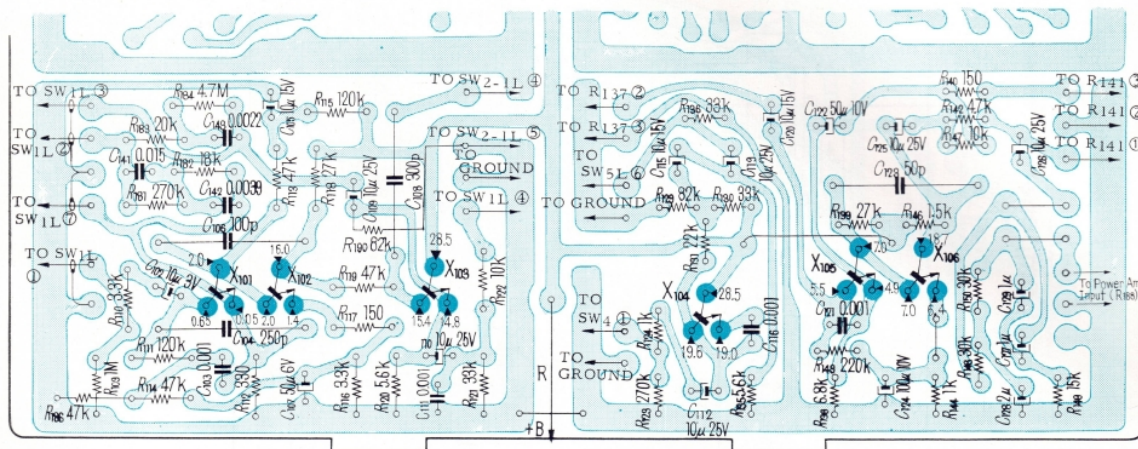
## Components Side —



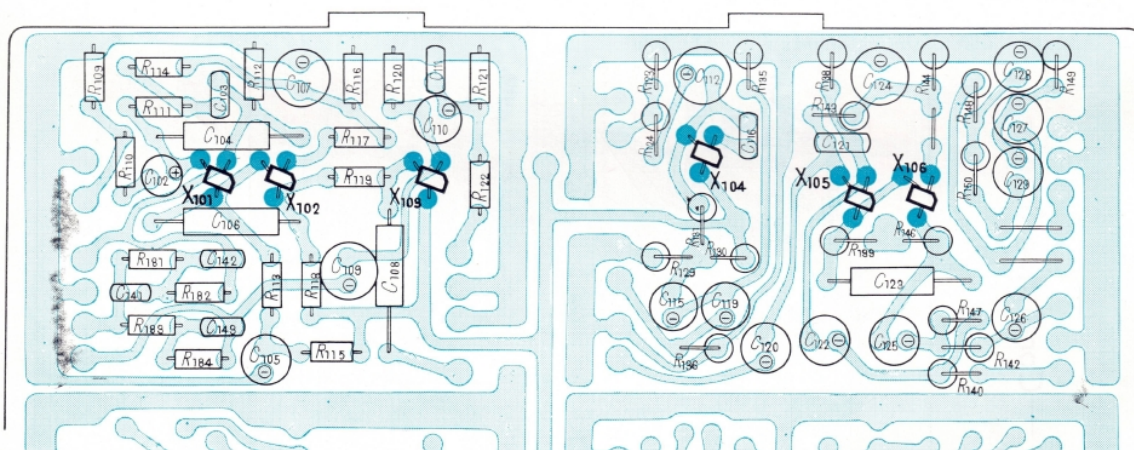


## PRE-AMPLIFIER BOARD(L)

— Conductor Side —

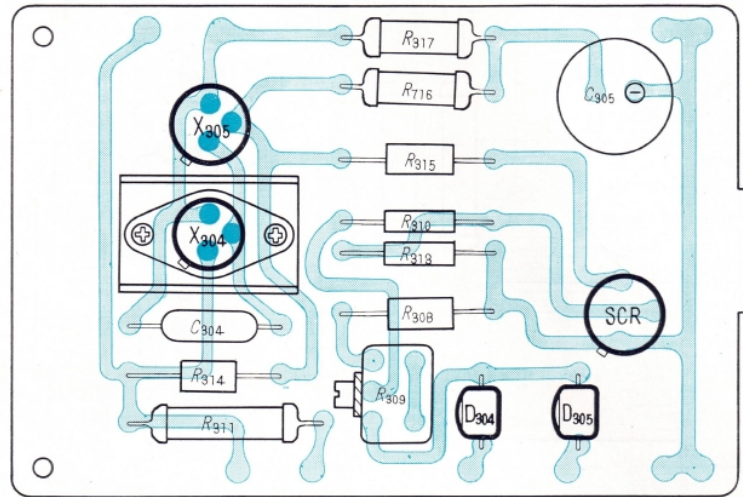


— Components Side —

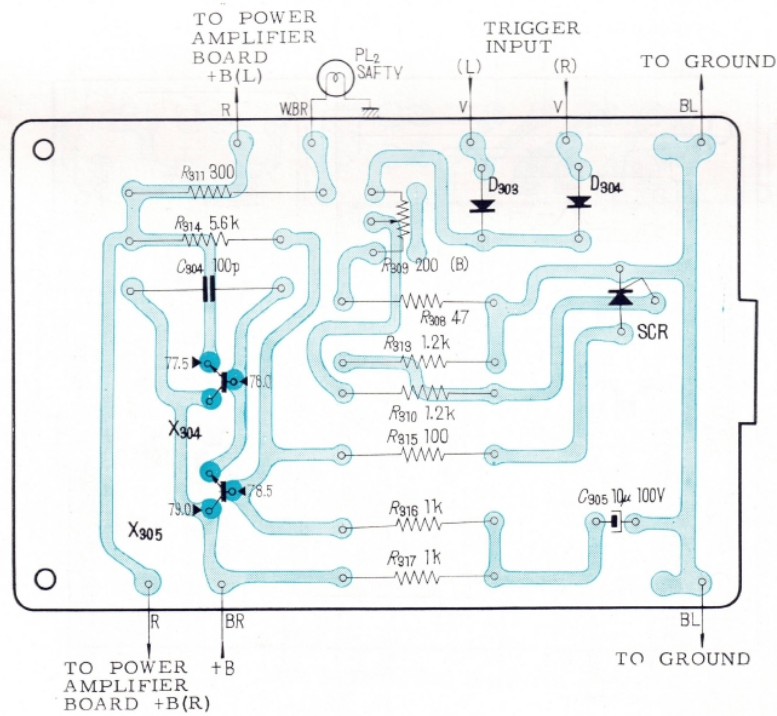


# CIRCUIT BREAKER BOARD

— Components Side —



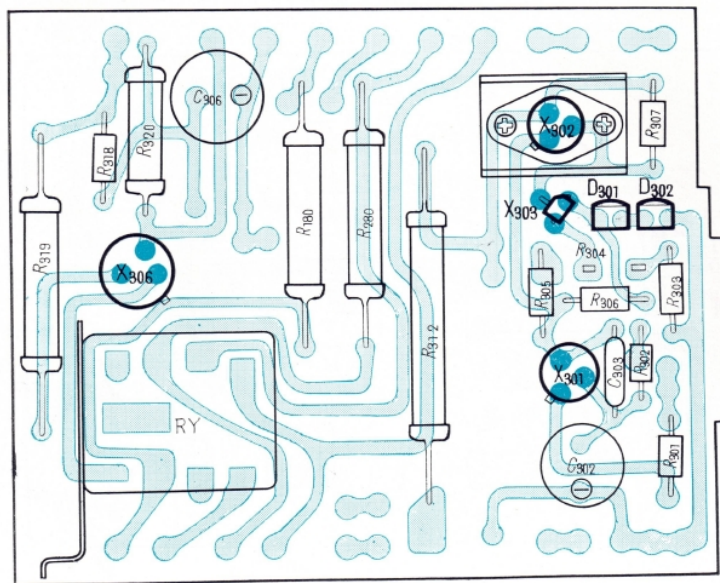
— Conductor Side —



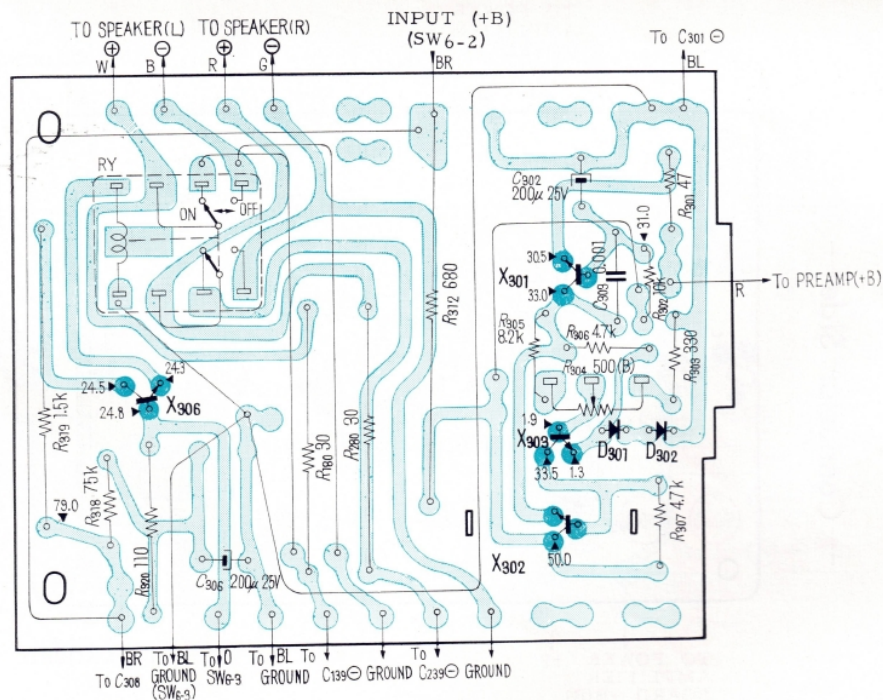


# MUTING BOARD

—Components Side—

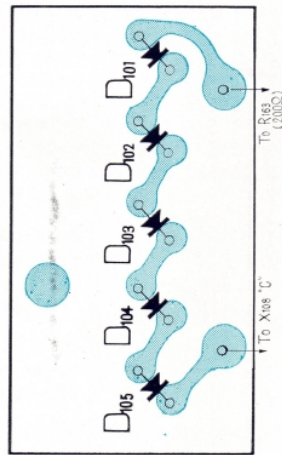


—Conductor Side—

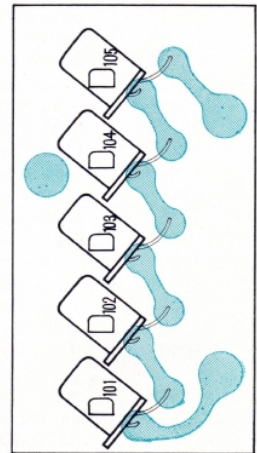


# THERMO COMPENSATION DIODE BOARD

— Conductor Side —

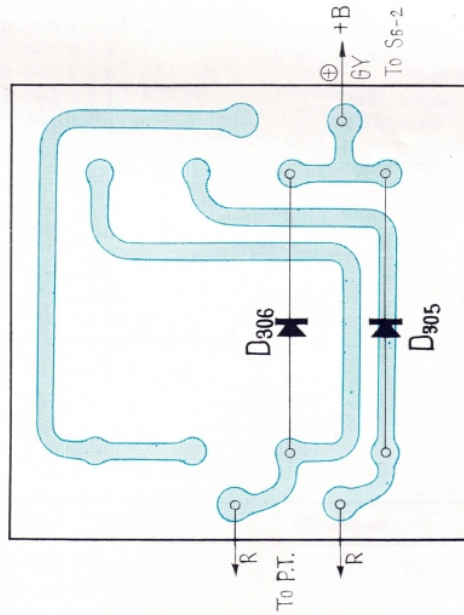


— Components Side —

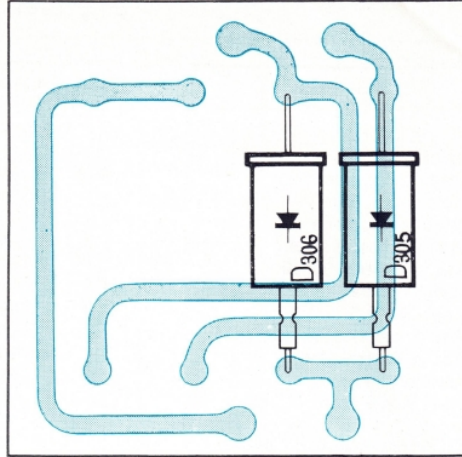


# POWER SUPPLY DIODE BOARD

— Conductor Side —



— Components Side —





# Parts List

| Part No.     | Description                                    | Q'ty | Part No.     | Description                      | Q'ty |
|--------------|------------------------------------------------|------|--------------|----------------------------------|------|
| X-20320-01   | Panel Ass'y, control                           | 1    | 2-029-935-02 | Spacer, speaker output; blue     | 2    |
| 2-032-001-   | Panel, control                                 | (1)  | -12          | Spacer, speaker output; red      | 2    |
| 2-031-956-   | Escutcheon, pilot lamp                         | (2)  | -936-        | Spacer, speaker output; fiber    | 4    |
| -955-01      | Lens, pilot lamp; red                          | (1)  | -937-        | Plate, phono jack mounting plate |      |
| -955-02      | Lens, pilot lamp; green                        | (1)  |              | reinforcing                      | 2    |
| X-20320-02-  | Panel Ass'y, chassis; front                    | 1    | -938-        | Plate, printed circuit board     | 6    |
| -03-         | Knob Ass'y, control; small                     | 4    | -944-        | Cushion styro-foam               | 2    |
| 2-032-004-   | Knob, control; small                           | (1)  | -945-        | Carton                           | 1    |
| 7-621-713-48 | Screw, set 3×6                                 | (1)  | -942-        | Bracket, wire retainer           | 1    |
| X-20299-02-  | Plate Ass'y, chassis; bottom                   | 1    | -943-        | Cushion                          | 1    |
| -04-         | Knob Ass'y, control; large                     | 4    | -949-        | Felt, vibration absorber; white  | 1    |
| 2-029-911-   | Knob, control; large                           | (1)  | -950-        | Spacer t=0.5                     | 1    |
| 7-621-715-40 | Screw, set 4×8; control knob                   | (2)  | -951-        | Plate, nut                       | 1    |
|              |                                                |      | 0-051-263-   | Foot, rubber                     | 4    |
| X-20299-05-  | Terminal Ass'y, speaker output; middle type    | 4    | 3-002-408-05 | Spacer 6 φ                       | 2    |
| -06-         | Chassis Ass'y, power amplifier                 | 1    | -408-15      | Spacer 6 φ                       | 1    |
| X-20319-01-  | Terminal Ass'y, earth; small type              | 1    | 3-413-100-   | Bag, polyethylene                | 1    |
| 2-032-021-   | Panel, back                                    | 1    | 3-410-032-   | Stopper, cord                    | 1    |
| -022-        | Label, specification                           | 1    | 3-701-030-   | Label, serial No.                | 1    |
| -023-        | Plate, printed circuit board                   | 4    | 2-029-953-   | Label, voltage                   | 1    |
| 2-029-952-   | Wire retainer                                  | 4    | 3-790-706-11 | Instruction Manual               | 1    |
| -921-        | Cover, cabinet; black                          | 1    | 3-793-009-11 | Card, inspection                 | 6    |
| -923-        | Chassis, pre-amplifier                         | 1    | 1-506-113-11 | Plug, phono; black               | 7    |
| -924-        | Plate, relay                                   | 1    | 1-506-105-01 | Plug, phono; red                 | 7    |
| -925-        | Plate, volume control                          | 1    | -02          | Plug, phono; black               | 1    |
| -927-        | Plate, hum shield                              | 1    | 1-532-017-12 | Fuse, 5A                         | 1    |
| -928-        | Heat Sink, 2SC299                              | 8    | X-44900-02-  | Cloth, polishing                 | 1    |
| -930-        | Screw, cabinet cover                           | 4    | 2-029-946-   | Bag, accessory                   | 1    |
| -931-        | Knob, power on/off, tone & monitor; dark brown | 3    | 3-793-042-11 | Sheet, check                     | 1    |
| -932-        | Knob, function; dark brown                     | 1    | 3-701-020-   | Bag, polyethylene                | 1    |
| -933-        | Case Cover, relay; white                       | 1    | 7-491-001-   | Desiccant                        | 1    |

| Part No.    | Description                                              | Q'ty | Part No.   | Description                                                   | Q'ty |
|-------------|----------------------------------------------------------|------|------------|---------------------------------------------------------------|------|
| X-20320-54- | Circuit Board                                            | 1    | 1-507-162- | Jack, tape head, phono 1, phono 2, tuner and auxiliary; phono | 1    |
| -55-        | pre-amplifier; mounted                                   | 2    |            | J101-105, 201-205                                             | 1    |
| -56-        | power amplifier; mounted                                 | 1    | 1-509-029- | Connector, rec./p.b.                                          | 1    |
| -57-        | muting; mounted                                          | 1    | 1-526-165- | Socket, voltage adaptor; special                              | 1    |
| -58-        | circuit breaker; mounted                                 | 2    | 1-441-231- | Transformer, power                                            | 2    |
| -59-        | tone control capacitor; mounted                          | 2    | 1-517-021- | Socket, pilot lamp                                            | 2    |
| -60-        | thermo compensation diode; mounted                       | 1    | 1-518-050- | Lamp, pilot                                                   | 3    |
| 1-538-383-  | power supply diode; mounted                              | 1    | 1-509-015- | Socket, AC                                                    | 4    |
| -348-       | pre-amplifier; printed                                   | 2    | 1-526-502- | Socket, transistor 2SD45                                      | 2    |
| -343-       | power amplifier; printed                                 | 1    | 1-536-146- | Terminal board, 1L2P                                          | 1    |
| -344-       | muting; printed                                          | 1    | 1-533-012- | Fuse Post                                                     | 1    |
| -345-       | circuit breaker; printed                                 | 2    | 1-534-241- | Cord, AC power                                                | 1    |
| -382-       | tone control capacitor; printed                          | 2    |            | <b>Semi-Conductors</b>                                        |      |
| -346-       | thermo compensation diode; printed                       | 1    |            | <b>Pre-Amplifier Section</b>                                  |      |
| 1-515-050-  | power supply diode; printed                              | 1    |            | Transistor 2SC401-5 X104-106, X204-206                        | 6    |
| 1-513-299-  | Relay                                                    | 1    |            | 2SC401-6 (White Mark) X101-103, 201-293                       | 6    |
| -295-       | Switch, function; rotary S1                              | 1    |            | <b>Power Amplifier Section</b>                                |      |
| -300-       | " , mode; rotary S4                                      | 1    |            | Transistor 2SD45-5,6 X111-112, 211-212                        | 4    |
| -292-       | " , function; lever action S2                            | 1    |            | 2SA527 X110,210                                               | 2    |
| -291-       | " , monitor; lever action S3                             | 1    |            | 2SC401-5 X107,207                                             | 2    |
| -293-       | " , low cut, high cut and cancel; lever action S5        | 1    |            |                                                               |      |
| 1-507-163-  | " , power on/off; micro S6                               | 1    |            |                                                               |      |
|             | Jack, rec. output and monitor; phono J106, 107, 206, 207 | 1    |            |                                                               |      |



# Parts List

| Part No.   | Description                               | Q'ty | Part No.              | Description                                        | Q'ty |
|------------|-------------------------------------------|------|-----------------------|----------------------------------------------------|------|
|            | Transistor 2SC299-40 X108,208,109,209     | 4    | 1-203-089-            | 33K ohms $\pm 5\%$ RD1/4L R121,221                 | 2    |
|            | Varistor SV-06 D106,206                   | 2    | -123-                 | 120K " " " R115,215                                | 2    |
|            | SV-08 D107,207                            | 2    | 1-209-904-            | 150 " " " R117,217                                 | 2    |
|            |                                           |      | -990-                 | 330 " " " R112,212                                 | 2    |
|            | <b>Muting Section</b>                     |      | 1-203-973-            | 3.3K " " " R110,116,210,216                        | 4    |
|            | Transistor 2SC293-40 X301                 | 1    | 1-204-906-            | 18K " " " R182,282                                 | 2    |
|            | 2SC293-30 X306                            | 1    | 1-209-907-            | 20K " " " R183,283                                 | 2    |
|            | 2SC297-03 X302                            | 1    | 1-203-953-            | 27K " " " R118,218                                 | 2    |
|            | 2SC401-5 X303                             | 1    | -934-                 | 47K " " " R113,114,158,258,213,214,219,119,186,286 | 10   |
|            | Diode FR-1U D301,302                      | 2    |                       |                                                    |      |
|            | <b>Circuit Board Section</b>              |      | -908-                 | 120K " " " R111,211                                | 2    |
|            | Transistor 2SC299-30 X304                 | 1    | 1-209-910-            | 270K " " " R181,281                                | 2    |
|            | 2SC293-30 X305                            | 1    | 1-203-911-            | 4.7M " " " R184,284                                | 2    |
|            | Diode 2SF-103                             | 1    | 1-204-910-            | 1M " " " R109,209                                  | 2    |
|            | FR-1U D303,304                            | 2    | 1-204-898-            | 82K " $\pm 10\%$ " R190,290                        | 2    |
|            | <b>Thermo Compensation Diode Section</b>  |      |                       |                                                    |      |
|            | Diode 1T206 D101,105                      | 10   | 1-223-010-            | Adjustable, wire wound 200 ohms(B) R163,263        | 2    |
|            | D201,205                                  |      | 1-221-334-            | Adjustable, 50K ohms (B) R160,260                  | 2    |
|            | <b>Power Supply Diode Section</b>         |      | 1-201-081-            | Composition                                        |      |
|            | Diode DS-2M D305,306                      | 2    |                       | 220 ohms $\pm 10\%$ RC1/2 R166,266                 | 2    |
|            | <b>Resistors</b>                          |      | -794-                 | 5.1 " " " R172,175,272,275                         | 8    |
|            | <b>General Items</b>                      |      | -094-                 | 10 " " " R179,279                                  | 2    |
| 1-221-773- | Potentiometer,                            |      | -689-                 | 33 " " " R168,268,170,270                          | 4    |
| -716-      | dual; 10K ohms R141,241                   | 1    | -100-                 | 100 " " " R167,267,169,269                         | 4    |
| -705-      | gang; 20K ohms (M) R137,237               | 1    | -082-                 | 330 " " " R189,289                                 | 2    |
| -714-      | " 20K ohms (N) R103,104,203,204           | 2    | -472-                 | 390 " " " R159,259                                 | 2    |
|            | " 250K ohms (B) R127,133,227,233          | 4    | -845-                 | 510 " " " R165,265,178,278                         | 4    |
| 1-201-597- | Composition,                              |      | -021-                 | 1K " " " R155,255                                  | 2    |
| -814-      | 470K ohms $\pm 10\%$ RC1/2 R106,206       | 2    | -654-                 | 1.5K " " " R188,288                                | 2    |
| 1-201-041- | 3.3 " " " R322                            | 1    | -084-                 | 3.3K " " " R162,262                                | 2    |
| -054-      | 10K " " " R108,208                        | 2    | -085-                 | 3.9K " " " R154,254                                | 2    |
| -598-      | 47K " " " R105,205                        | 2    | -041-                 | 10K " " " R157,257                                 | 2    |
| 1-203-967- | 270K " " " R107,207                       | 2    | -087-                 | 22K " " " R156,256                                 | 2    |
|            | Carbon (Noiseless)                        |      | -843-                 | 240K " " " R151,251                                | 2    |
|            | 56K ohms $\pm 5\%$ RD1/4 R101,102,201,202 | 4    | -837-                 | 510K " " " R152,252                                | 2    |
| 1-205-100- | Enameled                                  |      | 1-207-151-            | Wire wound 0.5 ohms 1.5W R176,276,177,277          | 4    |
|            | 180 ohms 10W R321                         | 1    | 1-203-049-            | Carbon                                             |      |
| 1-201-021- | <b>Pre-amplifier Section</b>              |      |                       | 2.2K $\pm 5\%$ RD1/4L R161,261,171,271             | 4    |
|            | Composition                               |      | 1-209-576-            | 4K ohms $\pm 5\%$ RD2L R164,264                    | 2    |
| -654-      | 1K ohms $\pm 10\%$ RC1/2 R124,144,224,244 | 4    | 1-203-005-            | 22 ohms $\pm 5\%$ RD1/4L R153,253                  | 2    |
| -089-      | 1.5K " " " R146,246                       | 2    |                       |                                                    |      |
| -086-      | 4.7K " " " R142,242                       | 2    | <b>Muting Section</b> |                                                    |      |
| -090-      | 5.6K " " " R135,235                       | 2    | 1-221-427-            | Adjustable 500 ohms (B) R304                       | 1    |
| -496-      | 6.8K " " " R138,238                       | 2    | 1-201-079-            | Composition 47 ohms $\pm 10\%$ RC1/2 R301          | 1    |
| -087-      | 15K " " " R149,249                        | 2    |                       |                                                    |      |
| -687-      | 22K " " " R131,231                        | 2    | -082-                 | Composition                                        |      |
| -663-      | 27K " " " R139,239                        | 2    |                       | 330 ohms $\pm 10\%$ RC1/2 R303                     | 1    |
| -049-      | 30K " " " R148,150,248,250                | 4    | -089-                 | 4.7K " " " R306,307                                | 2    |
|            | 33K " " " R136,130,236,230                | 4    | -041-                 | 10K " " " R302                                     | 1    |
| -591-      | 82K " " " R129,229                        | 2    | -844-                 | 75K " " " R318                                     | 1    |
| -802-      | 220K " " " R143,243                       | 2    | -459-                 | 8.2K " " " R305                                    | 1    |
| -598-      | 270K " " " R123,223                       | 2    | 1-207-152-            | Wire Wound                                         |      |
| 1-242-653- | Carbon                                    |      |                       | 110 " 1.5W R320                                    | 1    |
| -697-      | 150 ohms $\pm 5\%$ RD1/4UR R140,240       | 2    | -104-                 | 30 " 4W R180,280                                   | 2    |
| 1-203-065- | 10K " " " R147,247                        | 2    | -153-                 | 1.5K " 4W R319                                     | 1    |
| -069-      | 5.6K " $\pm 5\%$ RD1/4L R120,220          | 2    | -154-                 | 680 " 5W R312                                      | 1    |
|            | 10K " " " R122,222                        | 2    | 1-201-079-            | <b>Circuit Braker Section</b>                      |      |
|            |                                           |      |                       | Composition                                        |      |
|            |                                           |      |                       | 47 ohms $\pm 10\%$ RC1/2 R308                      | 1    |



# Parts List

| Part No.   | Description                                 | Q'ty | Part No.   | Description                             | Q'ty |
|------------|---------------------------------------------|------|------------|-----------------------------------------|------|
| 1-201-100- | Composition                                 |      | 1-121-325- | Electrolytic                            |      |
| -685-      | 100 ohms $\pm 10\%$ RC1/2 R315              | 1    |            | 2 $\mu$ F 25WV C128,228                 | 2    |
| -086-      | 1.2K " " " R310,313                         | 2    | -192-      | 10 $\mu$ F 15WV C105,205,115,215        | 6    |
| 1-223-010- | Adjustable, wire wound 200ohms(B)R309       | 1    | -179-      | 10 $\mu$ F 25WV C109,209,110,210        | 12   |
| 1-207-157- | Wire Wound                                  |      |            | 112,212,119,219                         |      |
|            | 1K ohm 1.5W R316,317                        | 2    | -128-      | 50 $\mu$ F 10WV C107,207,122,222        | 4    |
| -156-      | 300 ohms 3W R311                            | 1    | -159-      | 100 $\mu$ F 10WV C124,224               | 2    |
|            | <b>Tone Control Capacitor Section</b>       |      | 1-109-005- | Mica                                    | 2    |
| 1-201-021- | Composition                                 |      |            | 250 pF $\pm 10\%$ C104,204              | 2    |
| -304-      | 1K ohms $\pm 10\%$ RC1/2 R132,232           | 2    | -006-      | 300 pF $\pm 10\%$ C108,208              | 2    |
| -041-      | 2.2K " " " R128,228                         | 2    | -002-      | 100 pF $\pm 10\%$ C106,206              | 2    |
| -087-      | 10K " " " R134,234                          | 2    | -001-      | 50 pF $\pm 10\%$ C123,223               | 2    |
| 1-242-665- | Carbon                                      |      |            | <b>Power Amplifier Section</b>          |      |
| -689-      | 470 " $\pm 5\%$ RD1/4UR R125,225            | 2    | 1-105-679- | Mylar                                   |      |
|            | 4.7K " " " R126,226                         | 2    |            | 0.033 $\mu$ F $\pm 10\%$ C140,240       | 2    |
|            | <b>Capacitors</b>                           |      | 1-121-142- | Electrolytic                            |      |
|            | <b>General Items</b>                        |      |            | 5 $\mu$ F 50WV C136,236                 | 2    |
| 1-101-534- | Encapsulated Component                      |      | -143-      | 10 $\mu$ F 50WV C132,232                | 2    |
| 1-105-067- | 0.1 $\mu$ F $\pm 120$ ohms 50WV             | 1    | -163-      | 50 $\mu$ F 50WV C135,235                | 2    |
|            | Mylar 0.01 $\mu$ F $\pm 10\%$ 50WV          | 1    | -172-      | 100 $\mu$ F 50WV C130,230               | 2    |
| 1-115-045- | Oil Tubular 0.1 $\mu$ F $\pm 20\%$ 600WV    | 1    | -140-      | 350 $\mu$ F 10WV C131,231               | 2    |
| 1-105-879- | Mylar 0.033 $\mu$ F $\pm 20\%$ 100WV        | 1    | -161-      | 500 $\mu$ F 6WV C134,234                | 2    |
| 1-109-002- | Mica 100pF $\pm 10\%$ 1KV                   | 2    | 1-109-001- | Mica                                    |      |
| 1-121-330- | Electrolytic 1000 $\mu$ F 60WV              | 2    |            | 50pF $\pm 10\%$ C133,233                | 2    |
| -328-      | " 2000 $\mu$ F 35WV C301                    | 1    | -004-      | 200pF $\pm 10\%$ C137,237               | 2    |
| -331-      | " 2000 $\mu$ F 100WV C308                   | 1    | -040-      | 150pF $\pm 10\%$ C138,238               | 2    |
|            | <b>Pre-Amplifier Section</b>                |      |            | <b>Muting Section</b>                   |      |
| 1-105-665- | Mylar                                       |      | 1-121-190- | Electrolytic                            |      |
| -668-      | 0.0022 $\mu$ F $\pm 5\%$ 50WV C143,243      | 2    |            | 200 $\mu$ F 25WV C306                   | 1    |
| -821-      | 0.0039 $\mu$ F $\pm 5\%$ 50WV C142,242      | 2    | -261-      | 200 $\mu$ F 35WV C302                   | 1    |
|            | 0.001 $\mu$ F $\pm 20\%$ 50WV C103,203,111, |      | 1-105-661- | Mylar                                   |      |
|            | 211,116,216,                                |      |            | 0.001 $\mu$ F $\pm 10\%$ 50WV C303      | 1    |
|            | 121,221                                     | 8    |            | <b>Circuit Breaker Section</b>          |      |
| -675-      | 0.015 $\mu$ F $\pm 5\%$ 50WV C141,241       | 2    | 1-121-126- | Electrolytic                            |      |
| 1-121-324- | Electrolytic                                |      |            | 10 $\mu$ F 100WV C305                   | 1    |
|            | 1 $\mu$ F $\pm 20\%$ 25WV C127,227,129,     | 4    | 1-109-002- | Mica                                    |      |
|            | 229                                         |      |            | 100pF $\pm 10\%$ 1KV C304               | 1    |
| 1-131-029- | Tantalum                                    |      |            | <b>Tone Control Capacitor Section</b>   |      |
|            | 10 $\mu$ F $\pm 20\%$ 3WV C102,202          | 2    | 1-105-671- | Mylar                                   |      |
|            |                                             |      |            | 0.0068 $\mu$ F $\pm 10\%$ 50WV C114,214 | 2    |
|            |                                             |      | -679-      | 0.033 $\mu$ F $\pm 10\%$ 50WV C118,218  | 2    |
|            |                                             |      | -683-      | 0.068 $\mu$ F $\pm 10\%$ 50WV C113,213  | 2    |
|            |                                             |      | 1-113-134- | 0.33 $\mu$ F $\pm 10\%$ 35WV C117,217   | 2    |

Following parts are added to UL and CSA model respectively

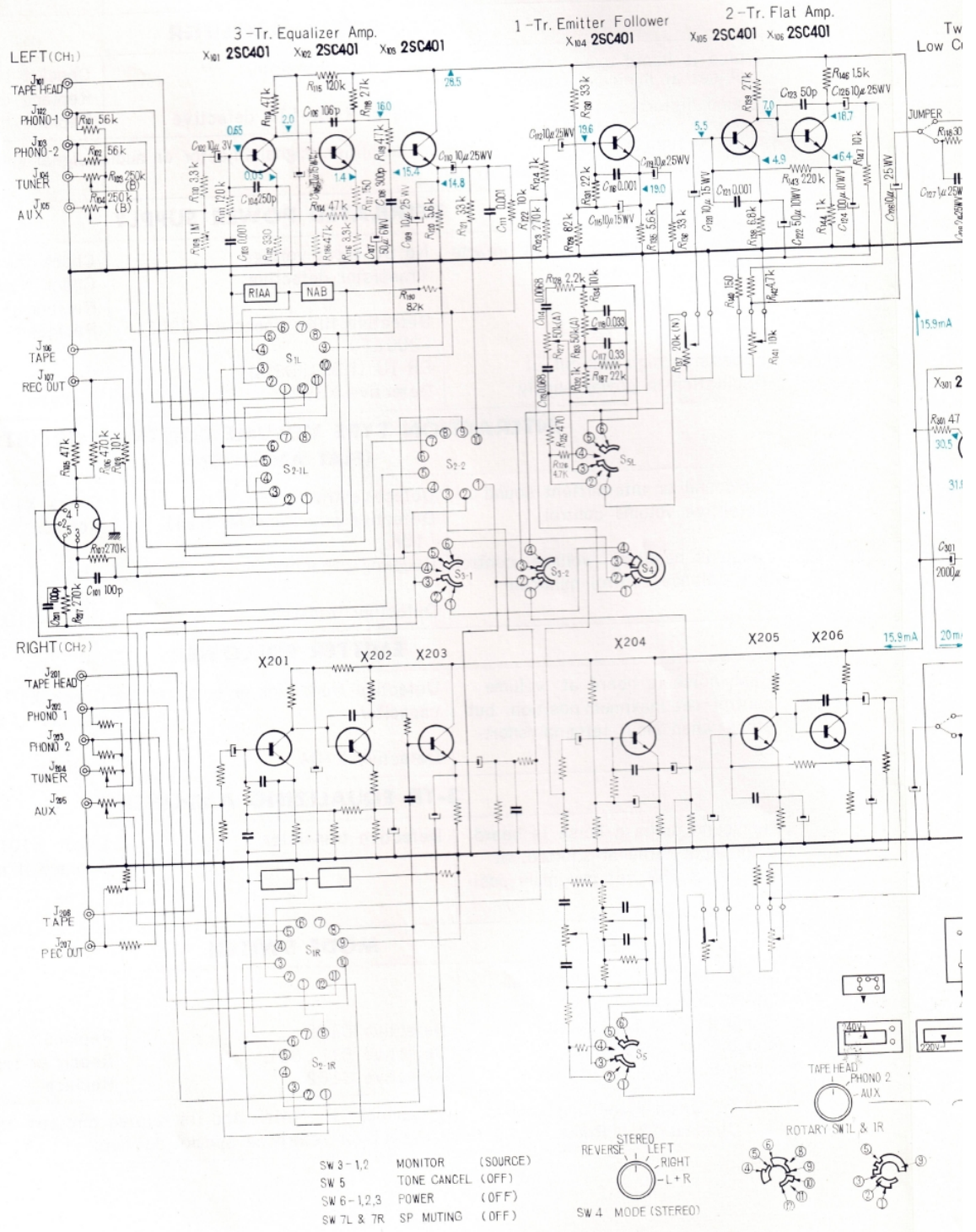
| Part No.     | Description                    | Q'ty | Part No.     | Description          | Q'ty |
|--------------|--------------------------------|------|--------------|----------------------|------|
|              | <b>UL</b>                      |      |              | <b>CSA</b>           |      |
| 2-032-031-   | Label, specification           | 1    | 2-032-035-   | Label, specification | 1    |
| 3-422-204-   | Label, caution                 | 1    | 2-029-966-   | Label, AC outlet     | 1    |
| 2-029-955-   | Label, AC outlet               | 1    | 3-407-956-   | Label, caution       | 1    |
| 2-032-025-02 | Carton for 2sets               | 1/2  | 3-790-706-22 | Instruction Manual   | 1    |
| 3-790-706-22 | Instruction Manual             | 1    | 1-534-330-31 | Cord, power          | 1    |
| 3-994-399-11 | Card, warranty                 | 1    |              |                      |      |
| 1-534-330-31 | Cord, power                    | 1    |              |                      |      |
| 1-513-293-22 | Switch, power on/off; micro S6 | 1    |              |                      |      |
| 1-209-866-   | Resistor, carbon 1 ohm 1W      | 8    |              |                      |      |
|              | R176, 177, 276, 277            |      |              |                      |      |

SONY CORPORATION

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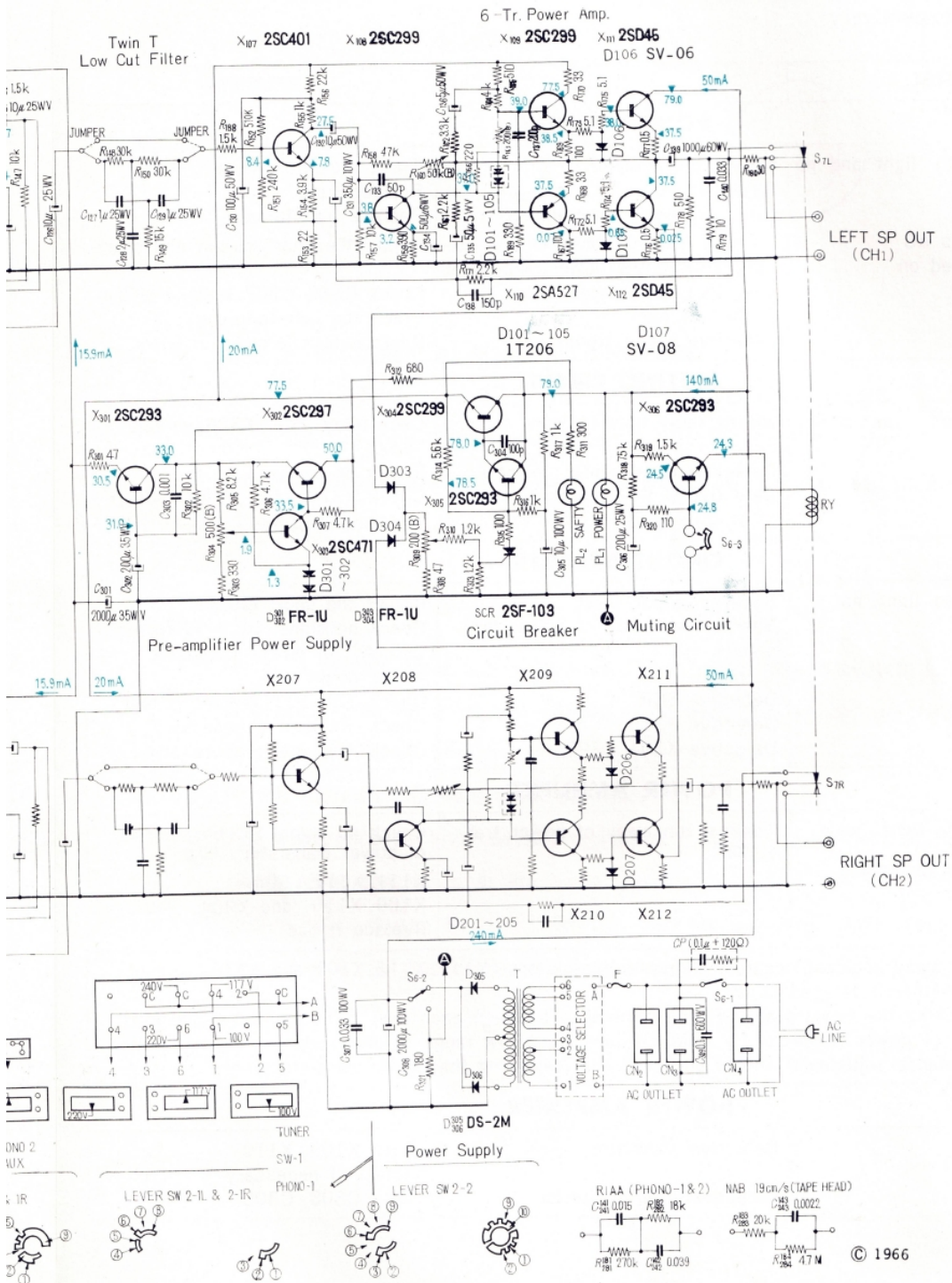


TA-1080 SCHEMATIC I





# ATIC DIAGRAM



# SONY®

PRODUCT ENGINEERING DIVISION

SONY CORPORATION OF AMERICA  
47-47 VAN DAM STREET  
LONG ISLAND CITY, NEW YORK 11101

Date: AUGUST 29, 1968

Model: TA-1080, TA-1120

Subject: VOLUME CONTROL SETTINGS

## HI-FI Service Bulletin No. 2

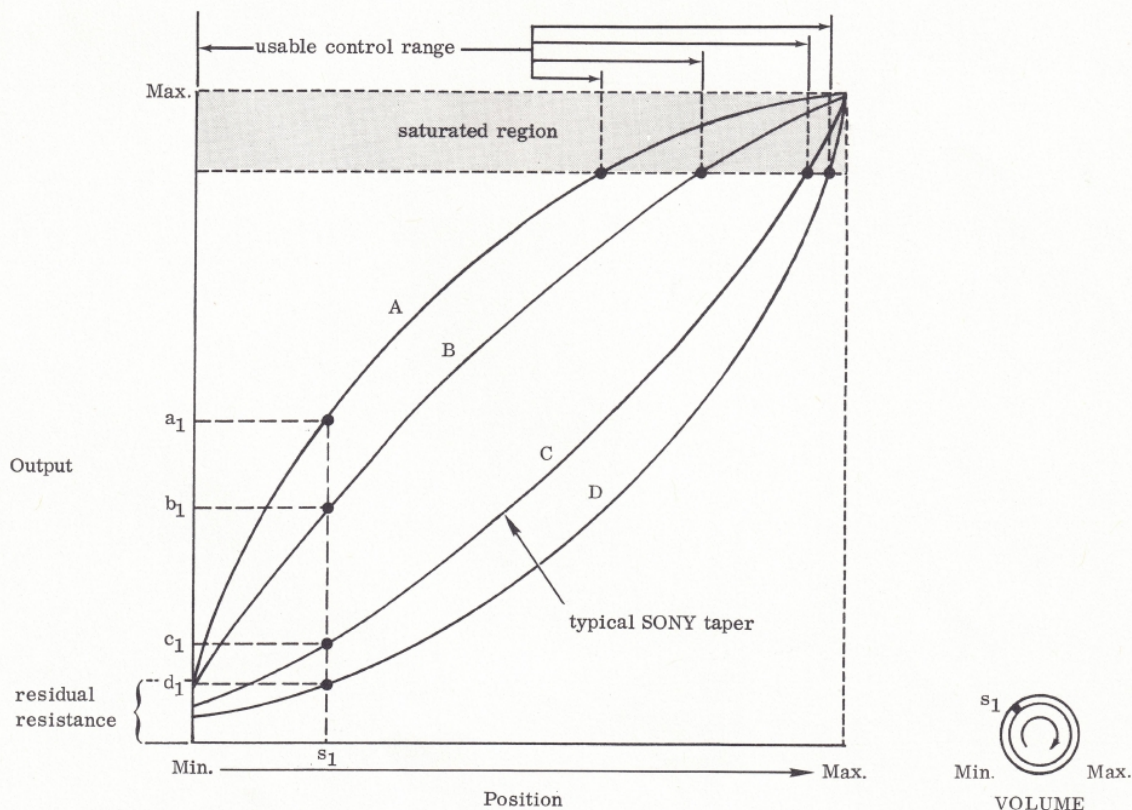
A characteristic of SONY amplifiers, one which may, at first, appear to be disappointing, is a somewhat lower output level at a given volume control position when compared with another amplifier of the same power capabilities set to the same position.

It should be pointed out, however, that the relative positions of the volume controls in any two amplifiers of different manufacture have no relation at all to the output level; the output level is purely a function of the characteristic (taper) of the control.

Typical audio control tapers are shown below. As can be seen, at an arbitrary setting  $s_1$ , the output

level of Curve A is  $a_1$ , much higher than that of any other curve. Notice, too, that a good portion of that control range is in the region in which the amplifier starts to saturate causing distortion. In fact, the higher the level per given setting, the greater the range of saturated output, and the lower the usable volume control range.

Volume control tapers used in SONY amplifiers (Curve C, below) are specifically designed for a practical compromise between output level and usable control range. Also, residual resistance (the value of resistance that exists at the minimum volume control position) is negligible, maintaining low cross-talk at low volume levels.



Output level as a function of volume control position, with volume control taper as a parameter.