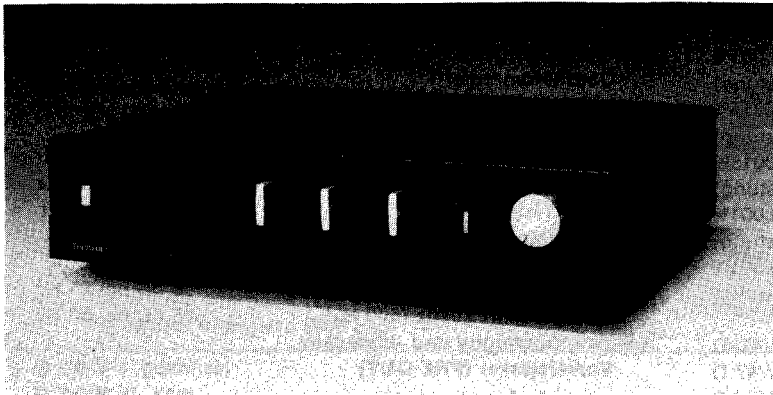


# Service Manual

Stereo DC Control Amplifier

## SU-A4K

[E], [EG], [EB], [XGH],  
[XGF], [XE], [XA]



### Areas

- \* [E] and [EG] are available in Scandinavia and European except Belgium, United Kingdom, Switzerland Holland and France.
- \* [EB] is available in Belgium.
- \* [XGH] is available in Holland.
- \* [XGF] is available in France.
- \* [XE] is available in United Kingdom.
- \* [XA] is available in Asia Latin America, Middle East and Africa.

**TECHNICAL SPECIFICATIONS** Specifications are subject to change without notice for further improvement.

(DIN 45 500)

### ■ AMPLIFIER SECTION

Total harmonic distortion (20 Hz~20 kHz)

PHONO MM	0.001%
	(1V output at vol. -30 dB)
	0.001%
	(5V output at vol. max.)
PHONO MC	0.0015%
	(1V output at vol. -30 dB)
	0.0015%
	(5V output at vol. max.)
TUNER, AUX, TAPE	0.001%
	(1V output at vol. -30 dB)
	0.001%
	(5V output at vol. max.)

Input sensitivity and impedance

PHONO 1 MM	2.5 mV/47kΩ
MC	100 μV/47Ω
PHONO 2 MM	2.5 mV/47kΩ
TUNER, AUX, TAPE	150 mV/47kΩ

PHONO maximum input voltage (THD 0.01%)

MM	300 mV (1 kHz, RMS)
MC	12 mV (1 kHz, RMS)

S/N

rated output	
PHONO MM	79 dB (90 dB, IHF '66)
MC	73 dB (78 dB, IHF '66, 250 μV input)
TUNER, AUX, TAPE	98 dB (105 dB, IHF '66)
-26 dB output	
PHONO MM	78 dB
MC	70 dB
TUNER, AUX, TAPE	84 dB

Frequency response

PHONO MM	RIAA ±0.2 dB (20 Hz~100 kHz)
PHONO MM/MC	RIAA ±0.15 dB (20 Hz~20 kHz)
TUNER, AUX, TAPE	DC ~400 kHz (-3 dB)
	+0 dB, -0.1 dB (DC~20 kHz)

Shelving tone

SUPER TREBLE (50 kHz)	-10 dB~+10 dB
TREBLE (20 kHz)	-5 dB~+5 dB
BASS (50 Hz)	-5 dB~+5 dB
SUPER BASS (20 Hz, 12 dB/oct)	0 dB~+12 dB

Turnover frequency

SUPER TREBLE	8 kHz
TREBLE	2 kHz
SUPER BASS (12 dB/oct)	50 Hz~200 Hz continuously adjustable

BASS 500 Hz

Equalizer subsonic filter 20 Hz, -12 dB/oct.

Loudness control (volume at -30 dB)

Turnover frequency (250 Hz)	+8 dB at 25 Hz
Turnover frequency (500 Hz)	+8 dB at 50 Hz

Output voltage and impedance

PRE OUT	rated 1V/0.2Ω
	max. 15V/0.2Ω
REC OUT	150 mV/220Ω

Channel balance, AUX 250 Hz~6,300 Hz ±1.0 dB

Channel separation, AUX 1 kHz 55 dB

Muting -20 dB

### ■ GENERAL

Power consumption 70W

Power supply AC 50 Hz/60 Hz, 110V/120V/220V/240V

Dimensions (W×H×D) 430 × 97 × 360 mm  
(16-15/16" × 3-13/16" × 14-3/16")

Weight 8.8 kg  
(19.4 lb.)

### Note:

Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

TECHNISCHE DATEN Spezifikationen können infolge von verbesserungen ohne Ankündigung geändert werden.

(DIN 45 500)

Table with technical specifications for amplifier components including Phono MM, Phono MC, Tuner, Aux, Tape, and various frequency response and gain settings.

Table detailing shelving and frequency response controls such as Überhöhenregler, Höhenregler, Baßregler, and Tiefbaßregler.

Table listing general data including power output (Leistungsaufnahme), network voltage (Netzspannung), dimensions (Abmessungen), and weight (Gewicht).

Bemerkung: Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

DONNEES TECHNIQUES Sujet à changement sans préavis.

(DIN 45 500)

Table with technical specifications in French, covering total harmonic distortion, sensitivity, and input impedance.

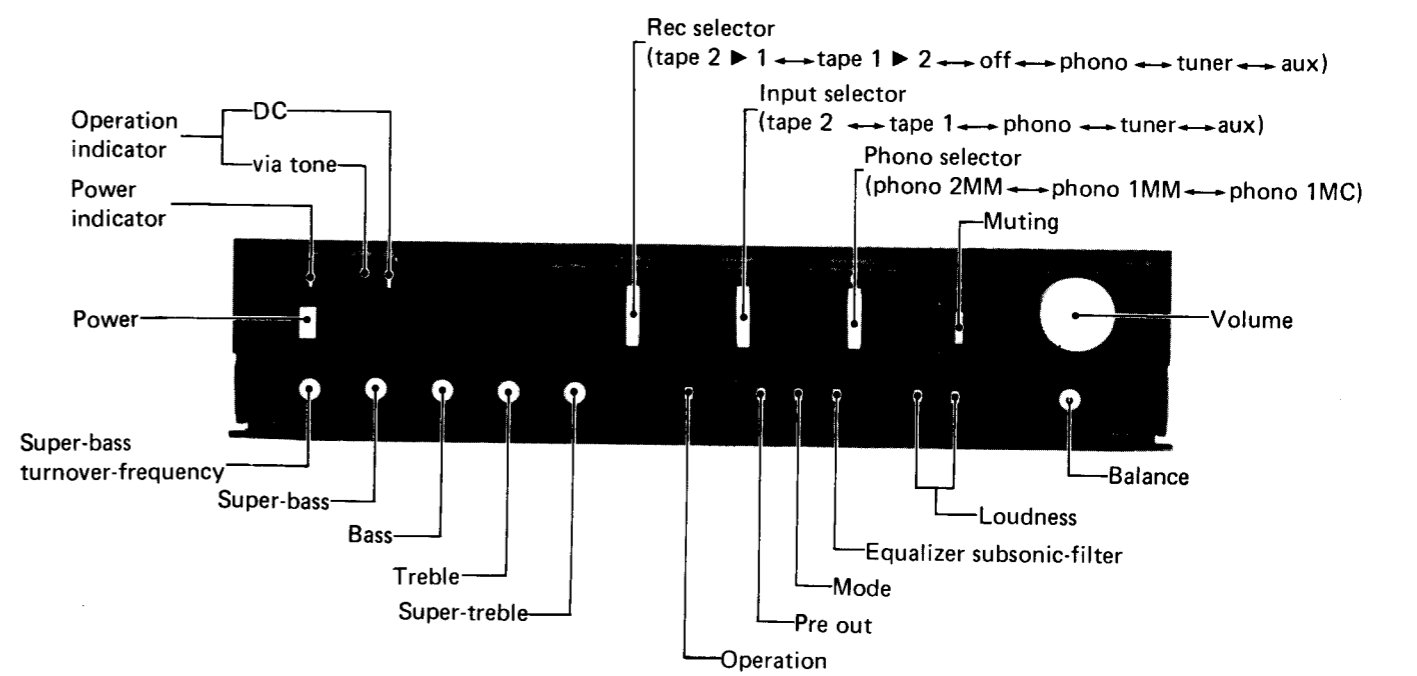
Table detailing phono input specifications for PHONO 2, AIMANT MOBILE and PHONO 1, BOBINE MOBILE, including gain and noise levels.

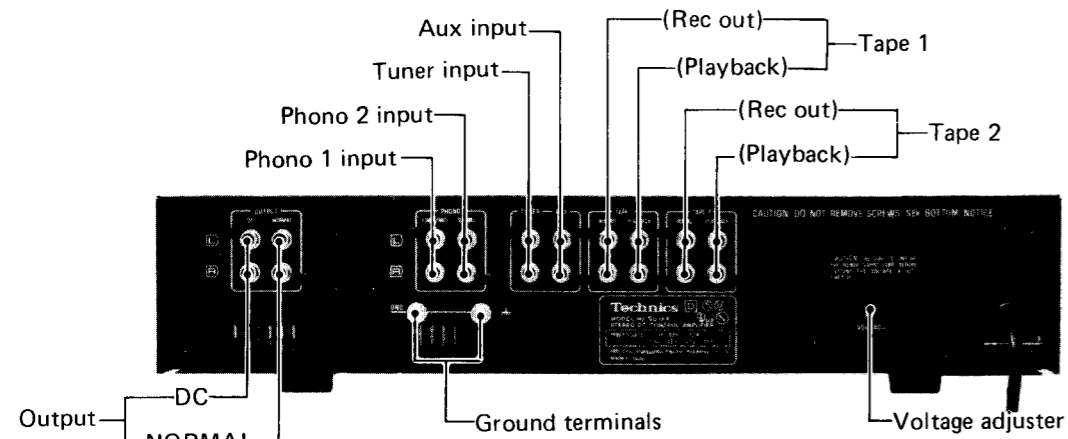
Table with technical specifications in French, including frequency response, output voltage, and dimensions.

CONTENTS

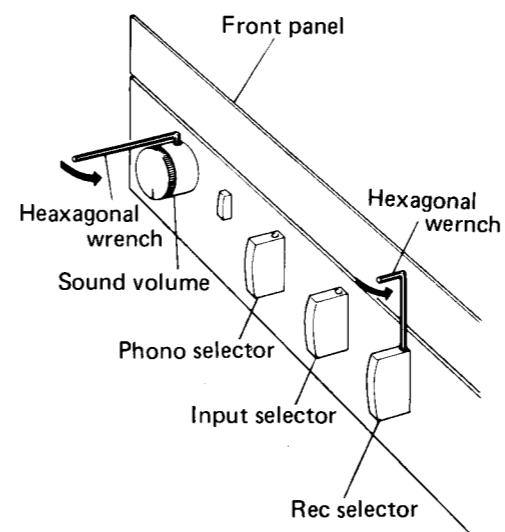
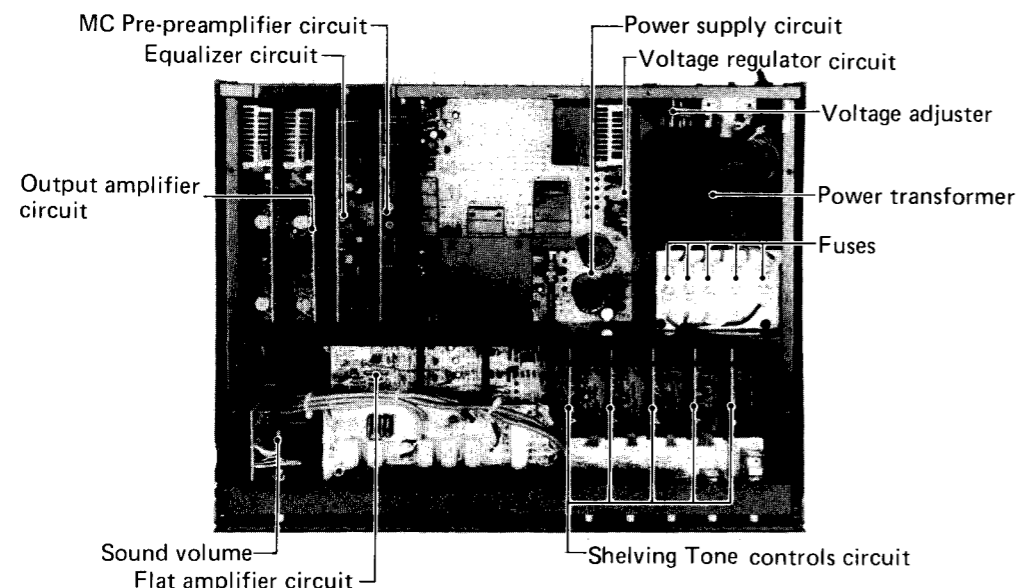
Table of contents listing sections like LOCATION OF CONTROLS, DISASSEMBLY INSTRUCTIONS, and TROUBLE SHOOTING with corresponding page numbers.

LOCATION OF CONTROLS

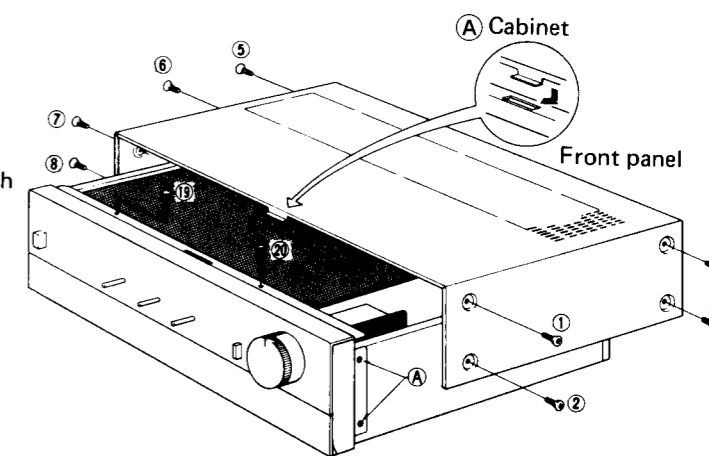




• The products for destination [XA] is equipped with AC outlet.



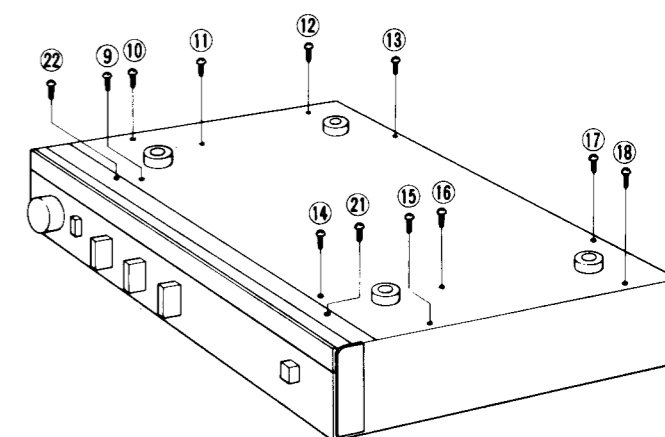
[Fig. 1]



[Fig. 2]

• How to remove the front panel

1. Remove the 3 knobs (phono, input, record output switches). (Refer to "How to remove knobs".)
2. Loosen the setscrews of front panel side plate (A in Fig. 2).
3. Remove the 4 setscrews of front panel (19 ~ 20 in Fig. 2; 21, 22 in Fig. 3), then pull the front panel toward you.



[Fig. 3]

■ PRECAUTIONS FOR REPAIR

The S/N ratio of the equalizer circuit is slightly influenced due to lead wire treatment and coil installation.

• Lead wire treatment

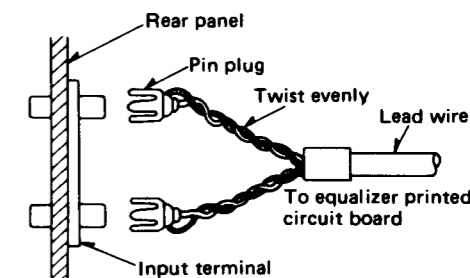
When the pin plug and the lead wire are changed, evenly twist the lead wires of phono 1-2 and solder them to the pin plugs. This will work to decrease hum level. (Refer to Fig. 4.)

• Coil treatment

When the MC preamplifier circuit coils (L101 & L103, L102 & L104) are replaced, apply bond between the coils as illustrated in Fig. 5. This will work to obtain hum cancelling effects.

Note: When inserting the printed board with parts (C113 & Q103) installed on the printed board of MC preamplifier circuit, take care so that the board will not touch the electrolytic capacitors and switches.

- 1) Shift down C113 toward the printed board side.
- 2) Adjust the leg length of Q103 to about 3mm.



[Fig. 4]

DISASSEMBLY INSTRUCTIONS

• How to remove the knobs (Refer to Fig. 1.)

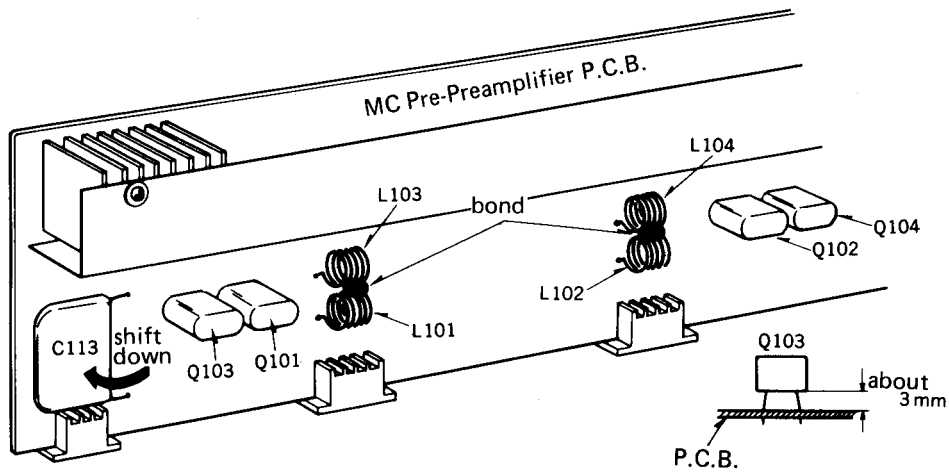
1. Remove the phono switch, input selector switch and record output switch by using M3 hexagonal wrench.
2. When removing the sound volume knob, use a hexagonal rod spanner for M4 screws.

• How to remove the cabinet

1. Remove the 8 setscrews (1 ~ 8 in Fig. 2) on the side of the cabinet. Slightly push the cabinet and lift it.
2. To install the cabinet, fit the projection of the cabinet into the square hole before tightening the setscrews.

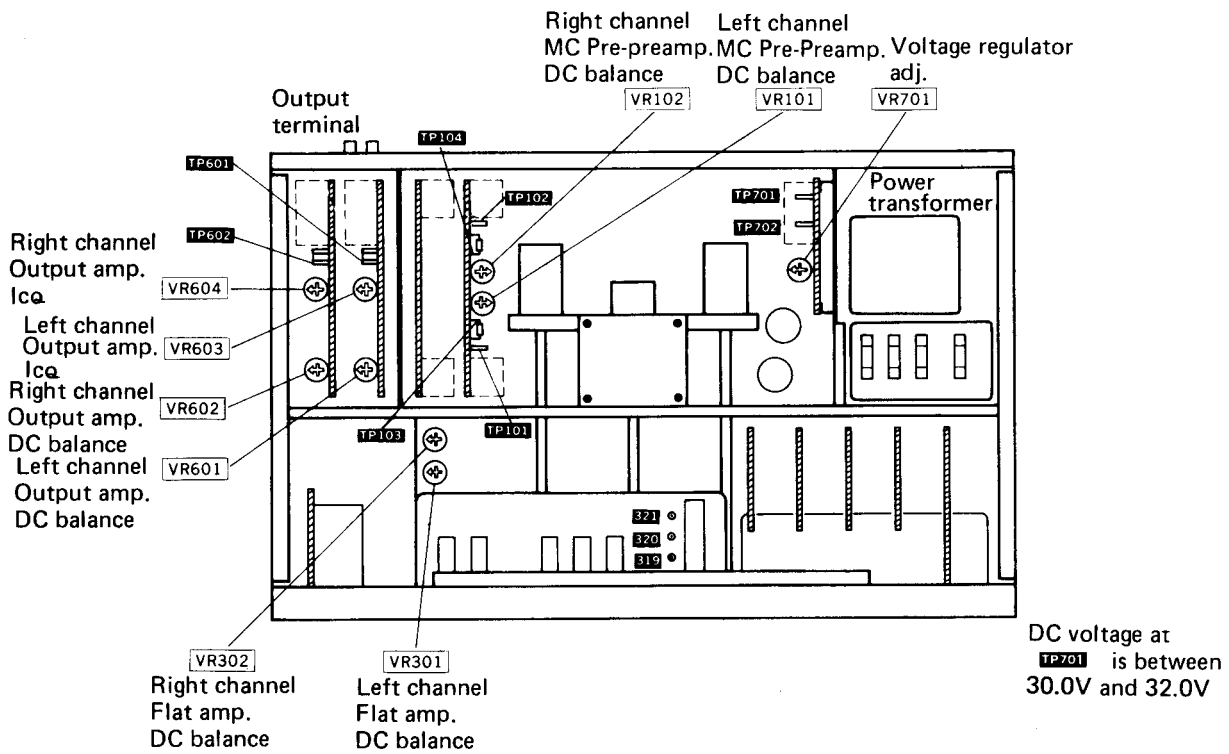
• How to remove the bottom board

Remove the 10 setscrews (9 ~ 18 in Fig. 3) of the bottom board, and the bottom board can be removed.



[Fig. 5]

■ **ADJUSTING POINTS**



(Gleichstromspannung am Testpunkt TP701 zwischen 30.0V und 32.0V)

(La tension CC à TP701 est 30.0V et 32.0V)

## ADJUSTING INSTRUCTIONS

## ENGLISH

● **Setting of controls and instruments to be used.**

1. Operation switch . . . . . DC
2. Output cut-off switch . . . . . on
3. Sound volume . . . . . "∞" (minimum)
4. DC voltmeter (capable to measure 1mV)

No.	Adjustments	DC voltmeter connections	Adjusting Point	Adjustment Procedure
1	Voltage regulator	Between <b>TP702</b> and ground	VR701	* Turn voltage regulator semi-fixed resistor VR701 to minimum. (counterclockwise direction) * Adjust VR701 to -31.0V.
2	DC Balance (MC Pre-Preamplifier)	L channel Between <b>TP101</b> and <b>TP103</b> (minus probe) R channel Between <b>TP102</b> and <b>TP104</b> (minus probe)	VR101 (L channel) VR102 (R channel)	* Adjust VR101 (L ch) and VR102 (R ch) to obtain a minimum reading, using the 300mV range on the DC voltmeter.
3	DC Balance (Flat amplifier)	L channel Between <b>319</b> and <b>320</b> (minus probe) R channel Between <b>321</b> and <b>320</b> (minus probe)	VR301 (L channel) VR302 (R channel)	* Adjust VR301 (L ch) and VR302 (R ch) to obtain a minimum reading, using the 3mV range on the DC voltmeter.
4	DC Balance (Output amplifier)	DC Output terminals	VR601 (L channel) VR602 (R channel)	* Adjust VR601 (L ch) and VR602 (R ch) to obtain a minimum reading, using the 1mV range on the DC voltmeter.
5	I <sub>ca</sub>	L channel <b>TP601</b> R channel <b>TP602</b>	VR603 (L channel) VR604 (R channel)	* Turn I <sub>ca</sub> semi-fixed resistor VR603, VR604 to minimum. (counterclockwise direction) * Adjust VR603 (L ch) and VR604 (R ch) to approx. 7mV after ten minutes warm-up time.

## EINSTELLUNGSANWEISUNGEN

## DEUTSCH

● **Einstellung der zu benutzenden Regler und Instrumente**

1. Funktionsschalter . . . . . "DC"
2. Ausgangssignal-Unterbrechungsschalter . . . "on"
3. Lautstärke . . . . . "∞" (Minimalstellung)
4. Gleichstromvoltmeter . . . . 1mV Meßbereich erforderlich

Nr	Einstellungen	Gleichstromvoltmeter- verbindungen	Einstellungspunkte	Einstellungsvorgang
1	Spannungsregler	Zwischen <b>TP702</b> und Masse.	VR701	* Die spannungsregler halbfesteingestellten Widerstände VR701 auf Minimalstellung drehen. (Entgegen dem Uhrzeigersinn) * VR701 auf -31.0V abstimmen.
2	Gleichstrom balance	L-Kanal Zwischen <b>TP101</b> und <b>TP103</b> (Minustest) R-Kanal Zwischen <b>TP102</b> und <b>TP104</b> (Minustest)	VR101 (L-Kanal) VR102 (R-Kanal)	* Durch Benutzung des 300mV-Bereiches des Gleichstromvoltmeters, den regelbaren Widerstand VR101 (L-Kanal) und VR102 (R-Kanal) auf minimalen Wert einstellen.
3		L-Kanal Zwischen <b>319</b> und <b>320</b> (Minustest) R-Kanal Zwischen <b>321</b> und <b>320</b> (Minustest)	VR301 (L-Kanal) VR302 (R-Kanal)	* Durch Benutzung des 3mV-Bereiches des Gleichstromvoltmeters, dem regelbaren Widerstand VR301 (L-Kanal) und VR302 (R-Kanal) auf minimalen Wert einstellen.
4		Gleichstromausgangsbuchsen	VR601 (L-Kanal) VR602 (R-Kanal)	* Durch Benutzung des 1mV-Bereiches des Gleichstromvoltmeters, dem regelbaren Widerstand VR601 (L-Kanal) und VR602 (R-Kanal) auf minimalen Wert einstellen.
5	I <sub>ca</sub>	L-Kanal <b>TP601</b> R-Kanal <b>TP602</b>	VR603 (L-Kanal) VR604 (R-Kanal)	* Die I <sub>ca</sub> halbfesteingestellten Widerstände VR603 und VR604 auf Minimalstellung drehen (Entgegen dem Uhrzeigersinn). * VR603 (L-Kanal) und VR604 (R-Kanal) auf ungefähr 7mV, nach 10 Minuten Anwärmezeit, einstellen.

INSTRUCTIONS DE REGLAGE

FRANÇAIS

● Réglage des commandes et instruments à utiliser

1. Sélecteur de fonctionnement . . . . . "DC"
2. Commutateur de coupure de sortie . . . "on"
3. Volume du son . . . . . "∞" (minimum)
4. Voltmètre CC (pouvant mesurer 1mV)

No.	Réglages	Connexions du voltmètre CC	Point de réglage	Procédé de réglage
1	Régulateur de potentiel	Entre TP702 et la masse	VR701	* Tourner les résistances VR701 semifixes regulateur de potentiel sur le minimum. (à gauche) * Régler les VR701 sur -31.0V.
2		Canal gauche Entre TP101 et TP103 (sonde au moins) Canal droit Entre TP102 et TP104 (sonde au moins)	VR101 (Canal gauche) VR102 (Canal droit)	* Régler VR101 (Canal gauche) et VR102 (Canal droit) pour obtenir une lecture minimale, à l'aide de la gamme de 300mV sur le voltmètre CC.
3	Equilibre CC	Canal gauche Entre 319 et 320 (sonde au moins) Canal droit Entre 321 et 320 (sonde au moins)	VR301 (Canal gauche) VR302 (Canal droit)	* Régler VR301 (Canal gauche) et VR302 (Canal droit) pour obtenir une lecture minimale, à l'aide de la gamme de 3mV sur le voltmètre CC.
4		Bornes de sortie CC	VR601 (Canal gauche) VR602 (Canal droit)	* Régler VR601 (Canal gauche) et VR602 (Canal droit) pour obtenir une lecture minimale, à l'aide de la gamme de 1mV sur le voltmètre CC.
5	Ic <sub>Q</sub>	Canal gauche TP601 Canal droit TP602	VR603 (Canal gauche) VR604 (Canal droit)	* Tourner les résistances VR603, VR604 semifixes Ic <sub>Q</sub> sur le minimum. (à gauche). * Régler VR603 (Canal gauche) et VR604 (Canal droit) sur env. 7mV après 10 minuts de temps de chauffage.

REPLACEMENT PARTS LIST... Electric Parts

- Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.  
2. Δ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.	Part No.	Part Name & Description
<b>INTEGRATED CIRCUITS</b>		
501, 502 503 ~ 507	SVINJM4559DS AN6552F	IC, Super Treble and Treble Buffer IC, Super Bass and Bass Buffer, Super Bass Filter
<b>TRANSISTORS</b>		
01 ~ 104, 201, 202 305 ~ 108 202, 205 309 ~ 112	2SK146-BL	Transistor, Differential Amplifier
13, 114	2SC1815-O	Transistor, Current Stabilizer
15, 116	2SA978-G	Transistor, MC Pre-Preamplifier (Use in ranks G or H)
	2SC1567-Q	Transistor, MC Pre-Preamplifier (Use in ranks Q, R or S)
	2SA794-Q	Transistor, MC Pre-Preamplifier (Use in ranks Q, R or S)
03, 204, 303 04, 603, 604 05, 206, 305 06, 605, 606 07, 208, 307 10, 607 ~ 110	2SC2291N-G	Transistor, Current Stabilizer (Use in ranks F or G)
11, 212, 311, 12, 611, 612 13 ~ 216	2SA995N-G	Transistor, Current Mirror (Use in ranks F or G)
	2SA999L-F	Transistor, Equalizer Amp., Flat Amp. and Output Amp.
17, 218	2SA921-T	Transistor, Equalizer Amp., Flat Amp. and Output Amp.
19, 220	2SC1885-R	Transistor, Current Stabilizer (Use in ranks Q, R or S)
01, 302	SVIUPA68HG-L	Transistor, Differential Amplifier

Ref. No.	Part No.	Part Name & Description
Q313 ~ 316	2SC1980-T	Transistor, Current Stabilizer (Use in ranks R, S or T)
Q317, 318	2SC2631-R	Transistor, Flat Amplifier (Use in ranks Q, R or S)
Q319, 320	2SA1123-R	Transistor, Flat Amplifier (Use in ranks Q, R or S)
Q321, 322	2SC2592-R	Transistor, Flat Amplifier (Use in ranks Q, R or S)
Q323, 324	2SA1112-R	Transistor, Flat Amplifier (Use in Q, R or S)
Q325, 703	2SD836-Q	Transistor, Regulator (Use in ranks P, Q or R)
Q326, 704	2SB750-Q	Transistor, Regulator (Use in ranks P, Q or R)
Q401, 402, 425 426, 451, 452 457, 476	2SA798A-G2	Transistor, Differential Amplifier
Q403, 404, 427, 428, 453, 454, 477, 478, 613, ~ 616	2SC1980-T	Transistor, Tone Amplifier and Current Stabilizer (Use in ranks R, S or T)
Q405, 406, 429, 430, 455, 456, 479, 480, 625, 626	2SC2631-R	Transistor, Tone Output Amp- lifier and Output Amplifier (Use in ranks Q, R or S)
Q407, 408, 431, 432, 457, 458, 481, 482, 627 628	2SA1123-R	Transistor, Tone Output Amp- lifier and Output Amplifier (Use in ranks Q, R or S)
Q601, 602	SVIUPA68HG-L	Transistor, Differential Amplifier
Q617, 618, 621, 622	2SC1328-T	Transistor, Output Amplifier (Buffer)
Q619, 620, 623, 624	2SA902S-F	Transistor, Output Amplifier (Buffer) (Product Part No. 2SA722-S, T or U)
Q629, 630	2SC2592-R	Transistor, Output Amplifier (Use in ranks Q, R or S)
Q631, 632	2SA1112-R	Transistor, Output Amplifier (Use in ranks Q, R or S)

Ref. No.	Part No.	Part Name & Description
Q701, 706, 802, 803 Q707, 709, 711, 804 Q708, 710, 712	2SA1015-O 2SC1509F-R 2SA777-Q	Transistor, Regulator and Relay Drive Transistor, Voltage Stabilizer and Relay Drive Transistor, Voltage Stabilizer (Use in ranks Q, R or S)
<b>DIODES</b>		
D301, 302, 605, 606, 701, 702, 802 D303 ~ 306 D307 ~ 310 621 ~ 624 D311 ~ 314 D315 ~ 318 D321, 322 D601 ~ 604 609 ~ 612 617 ~ 620, 821 D607, 608 D613 ~ 616 703 D704, 705	MA27A1 MA162A SVDMZ324A MA162A SVDMZ306 SVDMZ333A MA162A SVDSTV4HG SVDMZ306B SVDMZ316B SVDMZ322A	Diode, Bias Supply Diode, Bias Supply Diode, Zener 24V Diode, Bias Supply Diode, Zener 6V Diode, Zener 33V Diode, Bias Supply and Rectifier Diode, Bias Supply Diode, Zener 6V Diode, Zener 16V Diode, Zener 22V
D706, 707, 708, 709 D801, 803 D804 ~ 817 D818 ~ 820 Z801	SVDSR1K2 LN81CP SVDMZ303A SVDS1RBA40	Diode, Rectifier Light Emitting Diode Diode, Zener 3V Diode, Rectifier
<b>VARIABLE RESISTORS</b>		
VR101, 102 VR301, 302 VR303 VR304 VR501 ~ 503	EVMG1GA01B23 EVMH9GA00B53 EWS2HS35AT7 EWKKA4A061616 EWJF4A067G14	MC Pre-Preamp. DC Balance, 2kΩ (B) Flat Amplifier DC Balance, 5kΩ (B) Sound Volume, 50kΩ (x 2), 10kΩ (x 2) Balance Control, 5kΩ (BH) Super Treble, Treble and Bass Control, 10kΩ (G)
VR504 VR505 VR601, 602	EWKKA06553X EWKU9A073C5T EVMH8GA00B53	Super Bass Control, 5kΩ (X) Super Bass Frequency Control, 150kΩ (T) Output Amplifier DC Balance, 5kΩ (B)

Ref. No.	Part No.	Part Name & Description
VR603, 604 VR701	EVMH8GA00B52 EVMH8GA00B33	Output Amplifier Ic <sub>Q</sub> , 500Ω (B) Voltage Regulator, 3kΩ (B)
<b>COILS and TRANSFORMER</b>		
L101 ~ 104 L651, 652 T1	ELQ5A9 SLQY15G-1U SLT5M127	Coil, Choke Coil, Choke Transformer, Power Source
<b>COMPONENT COMBINATION</b>		
Z802	EXRF203ZS	Component Combination, 0.01μF x 2
<b>SWITCHES</b>		
S1 S2 S3 S4, 5 S6, 7, 8 S9 S10 S11 S11 [XA] only S12	EVQ03HF20 EVQ3MBF20 EVQ5MKF20 SSH273 SSH377 SSH149 SSH147 SSH119 ESB9997S ESE37200	Switch, Phono Selector Switch, Input Selector Switch, Rec Selector Switch, Loudness Switch, Eg, Subsonic, Mode, Pre Out Switch, Operation Switch, Muting Switch, Power Source Switch, Power Source Switch, Voltage Adjuster
<b>RELAYS</b>		
RLY1 RLY2	SSY9 SSY83	Relay, output (Equalizer) Relay, output
<b>LAMPS</b>		
	Δ XAMR21S350C	Lamp, Power and Operation Indicator
<b>FUSES</b>		
F1 F2 F3 F4, 5	Δ XBA2C16TRO Δ XBA2C08TRO Δ XBA2C10TRO Δ XBA2C12TRO	Fuse, T1.6A (250V) Fuse, T800mA (250V) Fuse, T1.0A (250V) Fuse, T1.2A (250V)

RESISTOR AND CAPACITOR PARTS LIST

Ref. No.	Part No.	Part Name & Description
<b>RESISTORS</b>		
R101, 102 R103, 104 R105, 106 R107, 108 R109, 110 R111, 112 R113, 114 R115, 116 R117, 118 R119, 120	ERO25CKF56R0 ERO25CKF2200 ERO25CKF1202 ERO25CKF1800 ERO25CKF4701 ERO25CKF6800 ERO25CKF6801 ERO25CKF5600 ERD25FJ220 ERD25FJ220	Metal Film, 56Ω, 1/4W, ± 1% Metal Film, 220Ω, 1/4W, ± 1% Metal Film, 12kΩ, 1/4W, ± 1% Metal Film, 180Ω, 1/4W, ± 1% Metal Film, 4.7kΩ, 1/4W, ± 1% Metal Film, 680Ω, 1/4W, ± 1% Metal Film, 6.8kΩ, 1/4W, ± 1% Metal Film, 560Ω, 1/4W, ± 1% Carbon, 22Ω, 1/4W, ± 5% Carbon, 22Ω, 1/4W, ± 5%
R121, 122 R123, 124 R125, 126 R127, 128 R129, 130 R131, 132 R133, 134 R135, 136 R137, 138 R139, 140	ERO25CKF1502 ERO25CKF1000 ERO25CKF3901 ERO25CKF1201 ERO25CKF4702 ERO25CKF1201 ERX14AF3R9 ERG1ANJ122 ERG1ANJ152 ERO25CKF56R0	Metal Film, 15kΩ, 1/4W, ± 1% Metal Film, 100Ω, 1/4W, ± 1% Metal Film, 3.9kΩ, 1/4W, ± 1% Metal Film, 1.2kΩ, 1/4W, ± 1% Metal Film, 47kΩ, 1/4W, ± 1% Metal Film, 1.2kΩ, 1/4W, ± 1% Metal Film, 3.9Ω, 1/4W, ± 1% Metal Oxide, 1.2kΩ, 1W, ± 5% Metal Oxide, 1.5kΩ, 1W, ± 5% Metal Film, 56Ω, 1/4W, ± 1%
R141, 142 R143, 144 R201, 202 R203, 204 R205, 206 R207, 208 R209, 210 R211, 212 R213, 214 R215, 216	ERO25CKF56R0 ERO25CKF1801 ERD25FJ5R6 ERO25CKF4702 ERO25CKF2202 ERO25CKF5602 ERD25FJ101 ERD25FJ101 ERO25CKF18R0 ERD25FJ151	Metal Film, 56Ω, 1/4W, ± 1% Metal Film, 1.8kΩ, 1/4W, ± 1% Carbon, 5.6Ω, 1/4W, ± 5% Metal Film, 47kΩ, 1/4W, ± 1% Metal Film, 22kΩ, 1/4W, ± 1% Metal Film, 56kΩ, 1/4W, ± 1% Carbon, 100Ω, 1/4W, ± 5% Carbon, 100Ω, 1/4W, ± 5% Metal Film, 18Ω, 1/4W, ± 1% Carbon, 150Ω, 1/4W, ± 5%
R217, 218 R221, 222	Δ ERD25FJ5R6 ERO25CKF2700	Carbon, 5.6Ω, 1/4W, ± 5% Metal Film, 270Ω, 1/4W, ± 1%

Ref. No.	Part No.	Part Name & Description
R227, 228 R229, 230 R231, 232 R233, 234 R235, 236 R237, 238 R239, 240 R243, 244	ERO25CKF2202 ERO25CKF3901 ERD25FJ330 ERD25FJ330 ERO25CKF2102 ERO25CKF1781 ERO25CKF39R0 ERO25CKF1002	Metal Film, 22kΩ, 1/4W, ± 1% Metal Film, 3.9kΩ, 1/4W, ± 1% Carbon, 33Ω, 1/4W, ± 5% Carbon, 33Ω, 1/4W, ± 5% Metal Film, 21kΩ, 1/4W, ± 1% Metal Film, 1.78kΩ, 1/4W, ± 1% Metal Film, 39Ω, 1/4W, ± 1% Metal Film, 10kΩ, 1/4W, ± 1%
R245, 246 R247, 248 R249, 250 R251, 252 R253, 254 R255, 256 R257, 258 R259, 260 R261, 262 R271, 272	ERO25CKF2701 ERO25CKF3900 ERO25CKF4700 ERO25CKF1501 ERO25CKF5600 ERD25FJ181 ERD25FJ271 ERD25FJ820 ERO25CKF4701 ERO25CKF4702	Metal Film, 2.7kΩ, 1/4W, ± 1% Metal Film, 390Ω, 1/4W, ± 1% Metal Film, 470Ω, 1/4W, ± 1% Metal Film, 1.5kΩ, 1/4W, ± 1% Metal Film, 560Ω, 1/4W, ± 1% Carbon, 180Ω, 1/4W, ± 5% Carbon, 270Ω, 1/4W, ± 5% Carbon, 82Ω, 1/4W, ± 5% Metal Film, 4.7kΩ, 1/4W, ± 1% Metal Film, 47kΩ, 1/4W, ± 1%
R273, 274 R275, 276 R301, 302 R303, 304 R305, 306 R307, 308 R309, 310 R311, 312 R313, 314 R315, 316 R317, 318 R319, 320 R321, 322	ERO25CKF2700 ERO25CKF1501 ERO25CKF5600 ERO25CKF4703 ERO25CKF1202 ERO25CKF3302 ERO25CKF5600 ERO25CKF5600 ERO25CKF1200 ERD25FJ121 ERD25FJ5R6 ERD25FJ5R6 ERO25CKF2700	Metal Film, 270Ω, 1/4W, ± 1% Metal Film, 1.5kΩ, 1/4W, ± 1% Metal Film, 560Ω, 1/4W, ± 1% Metal Film, 470kΩ, 1/4W, ± 1% Metal Film, 12kΩ, 1/4W, ± 1% Metal Film, 33kΩ, 1/4W, ± 1% Metal Film, 560Ω, 1/4W, ± 1% Metal Film, 560Ω, 1/4W, ± 1% Metal Film, 120Ω, 1/4W, ± 1% Carbon, 120Ω, 1/4W, ± 5% Carbon, 5.6Ω, 1/4W, ± 5% Carbon, 5.6Ω, 1/4W, ± 5% Metal Film, 270Ω, 1/4W, ± 1%
R323, 324 R325, 326 R327, 328	ERO25CKF3901 ERO25CKF8202 ERO25CKF3302	Metal Film, 3.9kΩ, 1/4W, ± 1% Metal Film, 82kΩ, 1/4W, ± 1% Metal Film, 33kΩ, 1/4W, ± 1%

Ref. No.	Part No.	Part Name & Description
R329, 330	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R331, 332	ERD25FJ331	Carbon, 330Ω, 1/4W, ± 5%
R333, 334	ERQ12HJ470	Fuse Type Metallic, 47Ω, 1/2W, ± 5%
R335, 336	ERQ12HJ470	Fuse Type Metallic, 47Ω, 1/2W, ± 5%
R337, 338	ERO25CKF1001	Metal Film, 1kΩ, 1/4W, ± 1%
R339, 340	ERO25CKF3900	Metal Film, 390Ω, 1/4W, ± 1%
R341, 342	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R343, 344	ERO25CKF2201	Metal Film, 2.2kΩ, 1/4W, ± 1%
R345, 346	ERO25CKF1001	Metal Film, 1kΩ, 1/4W, ± 1%
R347, 348	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R349, 350	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R351, 352	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R353, 354	ERO25CKF2702	Metal Film, 27kΩ, 1/4W, ± 1%
R355, 356	ERD25FJ560	Carbon, 56Ω, 1/4W, ± 5%
R357, 358	ERD25FJ560	Carbon, 56Ω, 1/4W, ± 5%
R359, 360	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R361, 362	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%
R365, 366	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ± 1%
R367, 368	ERO25CKF10R0	Metal Film, 10Ω, 1/4W, ± 1%
R371, 372	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%
R373, 374	ERO25CKF1201	Metal Film, 1.2kΩ, 1/4W, ± 1%
R375, 376	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%
R377	ERO25CKF4703	Metal Film, 4.7kΩ, 1/4W, ± 1%
R379, 380	ERO25CKF8201	Metal Film, 820Ω, 1/4W, ± 1%
R381, 382	ERO25CKF1202	Metal Film, 12kΩ, 1/4W, ± 1%
R401, 402	ERO25CKF1502	Metal Film, 15kΩ, 1/4W, ± 1%
R403, 404	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R405, 406	ERO25CKF1201	Metal Film, 1.2kΩ, 1/4W, ± 1%
R407, 408	ERO25CKF2701	Metal Film, 2.7kΩ, 1/4W, ± 1%
R409, 410	ERD25FJ221	Carbon, 220Ω, 1/4W, ± 5%
R411, 412	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R413, 414	ERO25CKF6800	Metal Film, 680Ω, 1/4W, ± 1%
R415, 416	ERO25CKF1202	Metal Film, 12kΩ, 1/4W, ± 1%
R417, 418	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R419, 420	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R421, 422	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R425, 426	ERO25CKF1502	Metal Film, 15kΩ, 1/4W, ± 1%
R427, 428	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R429, 430	ERO25CKF1201	Metal Film, 1.2kΩ, 1/4W, ± 1%
R431, 432	ERO25CKF2701	Metal Film, 2.7kΩ, 1/4W, ± 1%
R433, 434	ERD25FJ221	Carbon, 220Ω, 1/4W, ± 5%
R435, 436	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R437, 438	ERO25CKF6800	Metal Film, 680Ω, 1/4W, ± 1%
R439, 440	ERO25CKF1202	Metal Film, 12kΩ, 1/4W, ± 1%
R441, 442	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R443, 444	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R445, 446	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R451, 452	ERO25CKF1502	Metal Film, 15kΩ, 1/4W, ± 1%
R453, 454	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R455, 456	ERO25CKF1201	Metal Film, 1.2kΩ, 1/4W, ± 1%
R457, 458	ERO25CKF2701	Metal Film, 2.7kΩ, 1/4W, ± 1%
R459, 460	ERD25FJ221	Carbon, 220Ω, 1/4W, ± 5%
R461, 462	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R463, 464	ERO25CKF6800	Metal Film, 680Ω, 1/4W, ± 1%
R465, 466	ERO25CKF1202	Metal Film, 12kΩ, 1/4W, ± 1%
R467, 468	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R469, 470	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R471, 472	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R475, 476	ERO25CKF1502	Metal Film, 15kΩ, 1/4W, ± 1%
R477, 478	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R479, 480	ERO25CKF1201	Metal Film, 1.2kΩ, 1/4W, ± 1%
R481, 482	ERO25CKF2701	Metal Film, 2.7kΩ, 1/4W, ± 1%
R483, 484	ERD25FJ221	Carbon, 220Ω, 1/4W, ± 5%
R485, 486	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R487, 488	ERO25CKF6800	Metal Film, 680Ω, 1/4W, ± 1%
R489, 490	ERO25CKF1202	Metal Film, 12kΩ, 1/4W, ± 1%
R491, 492	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R493, 494	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R495, 496	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R501, 502	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R503, 504	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R505, 506	ERO25CKF1802	Metal Film, 18kΩ, 1/4W, ± 1%
R507, 508	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R509, 510	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R511, 512	ERO25CKF4700	Metal Film, 470Ω, 1/4W, ± 1%
R513, 514	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R515, 516	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R517, 518	ERO25CKF1802	Metal Film, 18kΩ, 1/4W, ± 1%
R519, 520	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R521, 522	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R523, 524	ERO25CKF3301	Metal Film, 3.3kΩ, 1/4W, ± 1%
R525, 526	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%

Ref. No.	Part No.	Part Name & Description
R527, 528	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R529, 530	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R531, 532	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R533, 534	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R535, 536	ERO25CKF2701	Metal Film, 2.7kΩ, 1/4W, ± 1%
R537, 538	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R539, 540	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ± 1%
R541, 542	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R543, 544	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R545, 546	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R547, 548	ERO25CKF8201	Metal Film, 8.2kΩ, 1/4W, ± 1%
R549, 550	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R551, 552	ERO25CKF2700	Metal Film, 270Ω, 1/4W, ± 1%
R553, 554	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R555, 556	ERO25CKF1000	Metal Film, 100Ω, 1/4W, ± 1%
R557, 558	ERO25CKF4702	Metal Film, 47kΩ, 1/4W, ± 1%
R561, 562	ERO25CKF6801	Metal Film, 6.8kΩ, 1/4W, ± 1%
R563, 564	ERO25CKF6801	Metal Film, 6.8kΩ, 1/4W, ± 1%
R571, 572	ERO25CKF1802	Metal Film, 18kΩ, 1/4W, ± 1%
R573, 574	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R575, 576	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R577, 578	ERO25CKF8201	Metal Film, 8.2kΩ, 1/4W, ± 1%
R579, 580	ERO25CKF1002	Metal Film, 10kΩ, 1/4W, ± 1%
R581, 582	ERO25CKF4702	Metal Film, 47kΩ, 1/4W, ± 1%
R583, 584	ERO25CKF4702	Metal Film, 47kΩ, 1/4W, ± 1%
R601, 602	ERO25CKF1001	Metal Film, 1kΩ, 1/4W, ± 1%
R603, 604	ERO25CKF4702	Metal Film, 47kΩ, 1/4W, ± 1%
R605, 606	ERO25CKF1202	Metal Film, 12kΩ, 1/4W, ± 1%
R607, 608	ERO25CKF2202	Metal Film, 22kΩ, 1/4W, ± 1%
R609, 610	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R611, 612	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R613, 614	ERO25CKF3300	Metal Film, 330Ω, 1/4W, ± 1%
R615, 616	ERD25FJ121	Carbon, 120Ω, 1/4W, ± 5%
R617, 618	ERD25FJ5R6	Carbon, 5.6Ω, 1/4W, ± 5%
R619, 620	ERD25FJ5R6	Carbon, 5.6Ω, 1/4W, ± 5%
R621, 622	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R625, 626	ERO25CKF8202	Metal Film, 82kΩ, 1/4W, ± 1%
R627, 628	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R629, 630	ERO25CKF3901	Metal Film, 3.9kΩ, 1/4W, ± 1%
R631, 632	ERO25CKF4702	Metal Film, 47kΩ, 1/4W, ± 1%
R633, 634	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R635, 636	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ± 1%
R637, 638	ERO25CKF1501	Metal Film, 1.5kΩ, 1/4W, ± 1%
R639, 640	ERO25CKF8200	Metal Film, 820Ω, 1/4W, ± 1%
R641, 642	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R643, 644	ERO25CKF1000	Metal Film, 100Ω, 1/4W, ± 1%
R645, 646	ERO25CKF8201	Metal Film, 8.2kΩ, 1/4W, ± 1%
R647, 648	ERO25CKF2702	Metal Film, 27kΩ, 1/4W, ± 1%
R649, 650	ERO25CKF6801	Metal Film, 6.8kΩ, 1/4W, ± 1%
R651, 652	ERO25CKF6801	Metal Film, 6.8kΩ, 1/4W, ± 1%
R653, 654	ERO25CKF1201	Metal Film, 1.2kΩ, 1/4W, ± 1%
R655, 656	ERO25CKF4700	Metal Film, 470Ω, 1/4W, ± 1%
R657, 658	ERO25CKF4700	Metal Film, 470Ω, 1/4W, ± 1%
R659, 660	ERO25CKF5600	Metal Film, 560Ω, 1/4W, ± 1%
R661, 662	ERX1ANJ1R8	Metal Film, 1.8Ω, 1W, ± 5%
R663, 664	ERX1ANJ1R8	Metal Film, 1.8Ω, 1W, ± 5%
R665, 666	ERD25FJ560	Carbon, 56Ω, 1/4W, ± 5%
R667, 668	ERD25FJ560	Carbon, 56Ω, 1/4W, ± 5%
R669, 670	ERO25CKF3300	Metal Film, 330Ω, 1/4W, ± 1%
R671, 672	ERO25CKF1501	Metal Film, 1.5kΩ, 1/4W, ± 1%
R673, 674	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R675, 676	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ± 1%
R681, 682	ERD50FJ100	Carbon, 10Ω, 1/2W, ± 5%
R683, 684	ERD50FJ6R8	Carbon, 6.8Ω, 1/2W, ± 5%
R685, 686	ERO25CKF5602	Metal Film, 56kΩ, 1/4W, ± 1%
R687, 688	ERX3ANJ470	Metal Film, 47Ω, 3W, ± 5%
R689, 690	ERX3ANJ470	Metal Film, 47Ω, 3W, ± 5%
R701, 702	ERD25FJ101	Carbon, 100Ω, 1/4W, ± 5%
R703, 704	ERO25CKF2702	Metal Film, 27kΩ, 1/4W, ± 1%
R705, 706	ERD25FJ101	Carbon, 100Ω, 1/4W, ± 5%
R709, 710	ERO25CKF2202	Metal Film, 22kΩ, 1/4W, ± 1%
R711	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%
R712	ERO25CKF5602	Metal Film, 56kΩ, 1/4W, ± 1%
R713	ERO25CKF3301	Metal Film, 3.3kΩ, 1/4W, ± 1%
R714	ERO25CKF5602	Metal Film, 56kΩ, 1/4W, ± 1%
R715, 716	ERD25FJ221	Carbon, 220Ω, 1/4W, ± 5%
R717, 718	ERO25CKF8201	Metal Film, 8.2kΩ, 1/4W, ± 1%
R719, 720	ERQ12HJ101	Fuse Type Metallic, 100Ω, 1/2W, ± 5%
R721, 722	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%
R723, 724	ERQ12HJ101	Fuse Type Metallic, 100Ω, 1/2W, ± 5%
R725, 726	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%
R802	ERO25CKF4701	Metal Film, 4.7kΩ, 1/4W, ± 1%

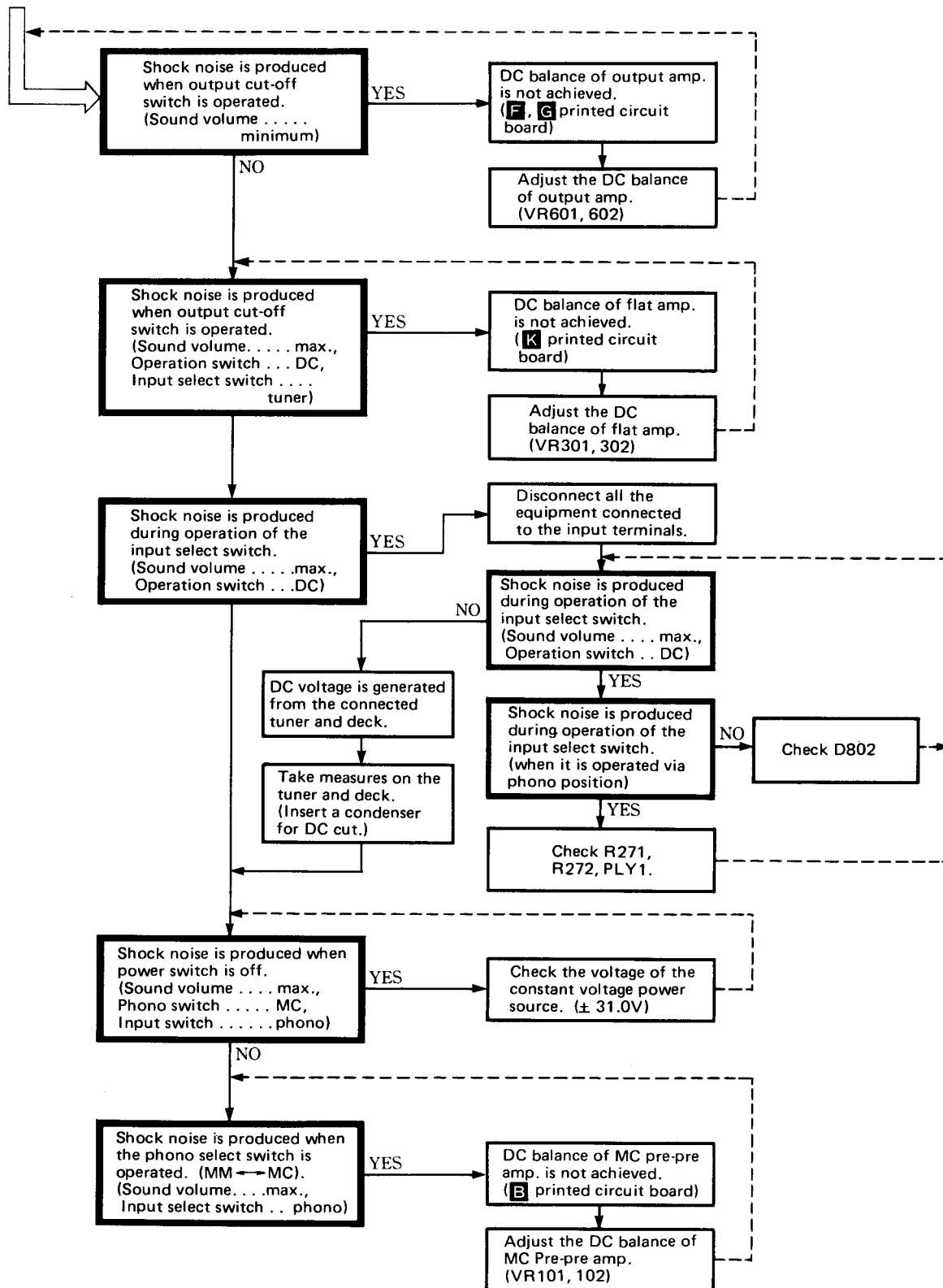
Ref. No.	Part No.	Part Name & Description
R803	ERD25TJ393	Carbon, 39kΩ, 1/4W, ± 5%
R804	ERD25TJ684	Carbon, 680kΩ, 1/4W, ± 5%
R805	ERO25CKF3302	Metal Film, 33kΩ, 1/4W, ± 1%
R806	ERG1ANJ222	Metal Oxide, 2.2kΩ, 1W, ± 5%
R807	ERG1ANJ102	Metal Oxide, 1kΩ, 1W, ± 5%
R808, 809	ERD50FJ471	Carbon, 470Ω, 1/2W, ± 5%
R810	ERD50FJ471	Carbon, 470Ω, 1/2W, ± 5%
R816	ERD25FJ122	Carbon, 1.2kΩ, 1/4W, ± 5%
R851, 852	ERQ12HJ470	Fuse Type Metallic, 47Ω, 1/2W, ± 5%
<b>CAPACITORS</b>		
C1, 2	ECKDKC103PF	Ceramic, 0.01μF, 400VAC, ± 10%
C3, 4	ECEA5021	Electrolytic, 1μF, 50V
C5 [XA] only	ECKDKC103PF	Ceramic, 0.01μF, 400VAC, ± 10%
C101, 102	ECQM1H103KZ	Polyester, 0.01μF, 50V, ± 10%
C103, 104	ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C105, 106	ECKD1H221KB	Ceramic, 220pF, 50V, ± 10%
C107, 108	ECEA1AS471	Electrolytic, 470μF, 10V
C109, 110	ECEA1HS100	Electrolytic, 10μF, 50V
C111, 112	ECEA1ES470	Electrolytic, 47μF, 25V
C113, 114	ECQE1335KZ	Polyester, 3.3μF, 125V, ± 10%
C115, 116	ECQM1H102KZ	Polyester, 0.001μF, 50V, ± 10%
C117, 118	ECEA1HS100	Electrolytic, 10μF, 50V
C201, 202	ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C203, 204	ECCD1H330K	Ceramic, 33pF, 50V, ± 10%
C205, 206	ECQM1H562KZ	Polyester, 0.0056μF, 50V, ± 10%
C207, 208	ECKD1H561KB	Ceramic, 560pF, 50V, ± 10%
C209, 210	ECCD1H220K	Ceramic, 22pF, 50V, ± 10%
C211, 212	ECCD1H470K	Ceramic, 47pF, 50V, ± 10%
C213, 214	ECCD1H470K	Ceramic, 47pF, 50V, ± 10%
C215, 216	ECEA1HS100	Electrolytic, 10μF, 50V
C217, 218	ECQP1154FZ	Polypropylene, 0.15μF, 125V, ± 10%
C219, 220	ECQM1H272JZ	Polyester, 0.0027μF, 50V, ± 5%
C221, 222	ECQP1393FZ	Polypropylene, 0.039μF, 125V, ± 10%
C223, 224	ECEA1AS221	Electrolytic, 220μF, 10V
C225, 226	ECEA0JS222	Electrolytic, 2200μF, 6.3V
C227, 228	ECEA16N4R7E	Non-Polar Electrolytic, 4.7μF, 16V
C229, 230	ECKD1H331KB	Ceramic, 330pF, 50V, ± 10%
C231, 232	ECQM1H102KZ	Ceramic, 0.001μF, 50V, ± 10%
C233, 234	ECKD1H331KB	Ceramic, 330pF, 50V, ± 10%
C271, 272	ECQE1335KZ	Polyester, 3.3μF, 125V, ± 10%
C273, 274	ECQM1H562JZ	Polyester, 0.0056μF, 50V, ± 5%
C301, 302	ECKD1H561KB	Ceramic, 560pF, 50V, ± 10%
C303, 304	ECCD1H180K	Ceramic, 18pF, 50V, ± 10%
C305, 306	ECEA16N10	Non-Polar Electrolytic, 10μF, 16V
C307, 308	ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C309, 310	ECCD1H050C	Ceramic, 5pF, 50V, ± 0.25pF
C311, 312	ECCD1H100K	Ceramic, 10pF, 50V, ± 10%
C313, 314	ECCD1H100K	Ceramic, 10pF, 50V, ± 10%
C315, 316	ECEA1HS100	Electrolytic, 10μF, 50V
C317, 318	ECEA1JS4R7	Electrolytic, 4.7μF, 63V
C319, 320	ECEA1JS4R7	Electrolytic, 4.7μF, 63V
C323, 324	ECEA1VS330	Electrolytic, 33μF, 35V
C327, 328	ECQM1H153KZ	Polyester, 0.015μF, 50V, ± 10%
C371, 372	ECQE1334KZ	Polyester, 0.33μF, 125V, ± 10%
C373, 374	ECQE1334KZ	Polyester, 0.33μF, 125V, ± 10%
C401, 402	ECCD1H151K	Ceramic, 150pF, 50V, ± 10%
C403, 404	ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C405, 406	ECEA1CS330	Electrolytic, 33μF

## TRUBLE SHOOTING

### Measures against shock noise

Since this is a DC control amplifier, shock noise is produced during switch control if DC voltage is generated in the signal line. In that case, check it according to the following procedure.

Shock noise is produced.

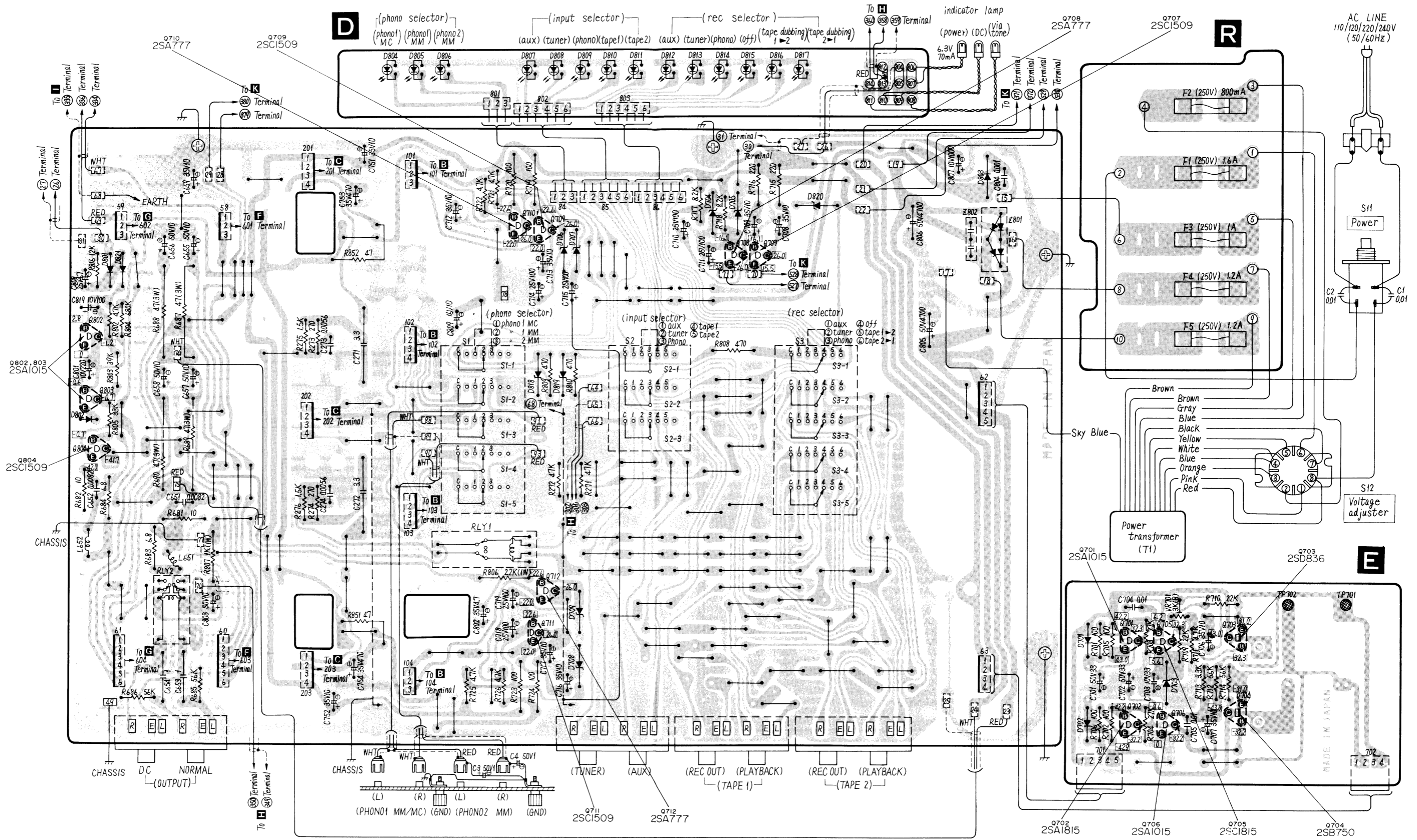




PRINTED CIRCUIT BOARD

[A] Selector switches & Relay drive circuits, [D] Indicators circuit, [E] Voltage regulator circuit, [R] Power source fuse circuit

Earth (Ground) Lines

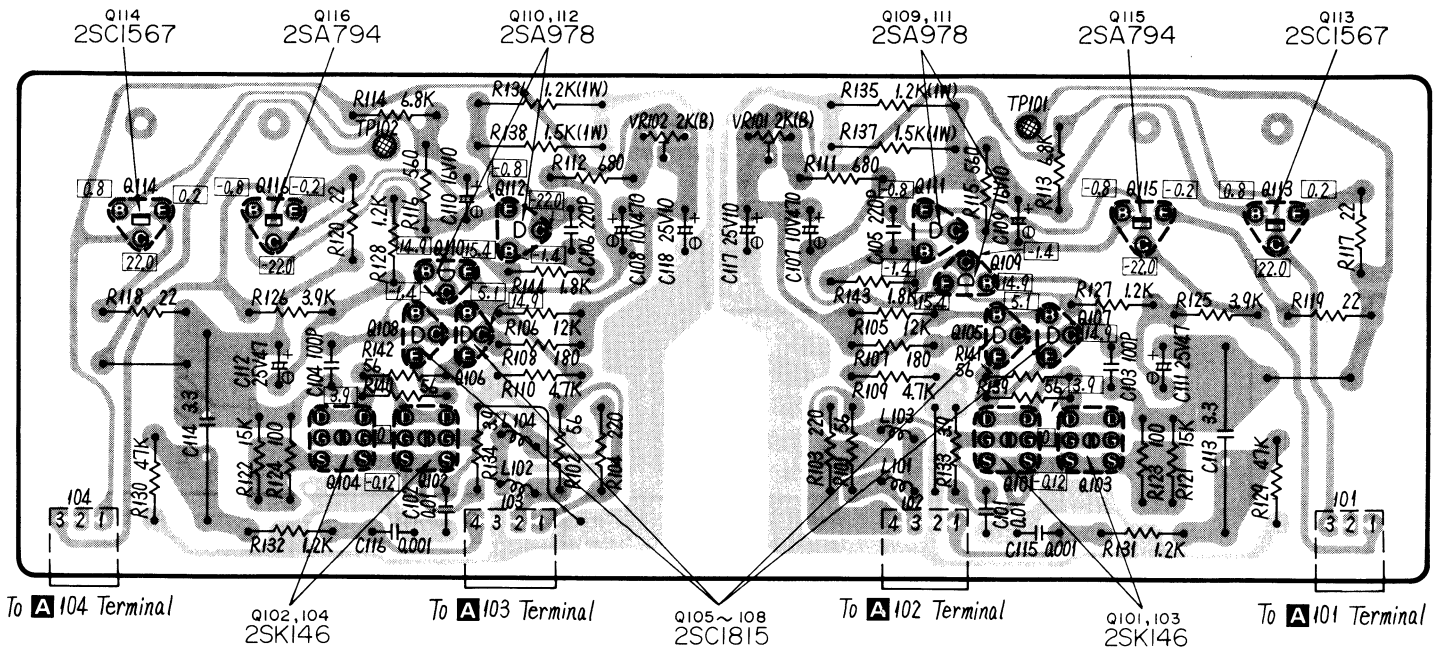


■ PRINTED CIRCUIT BOARD

Earth (Ground) Lines

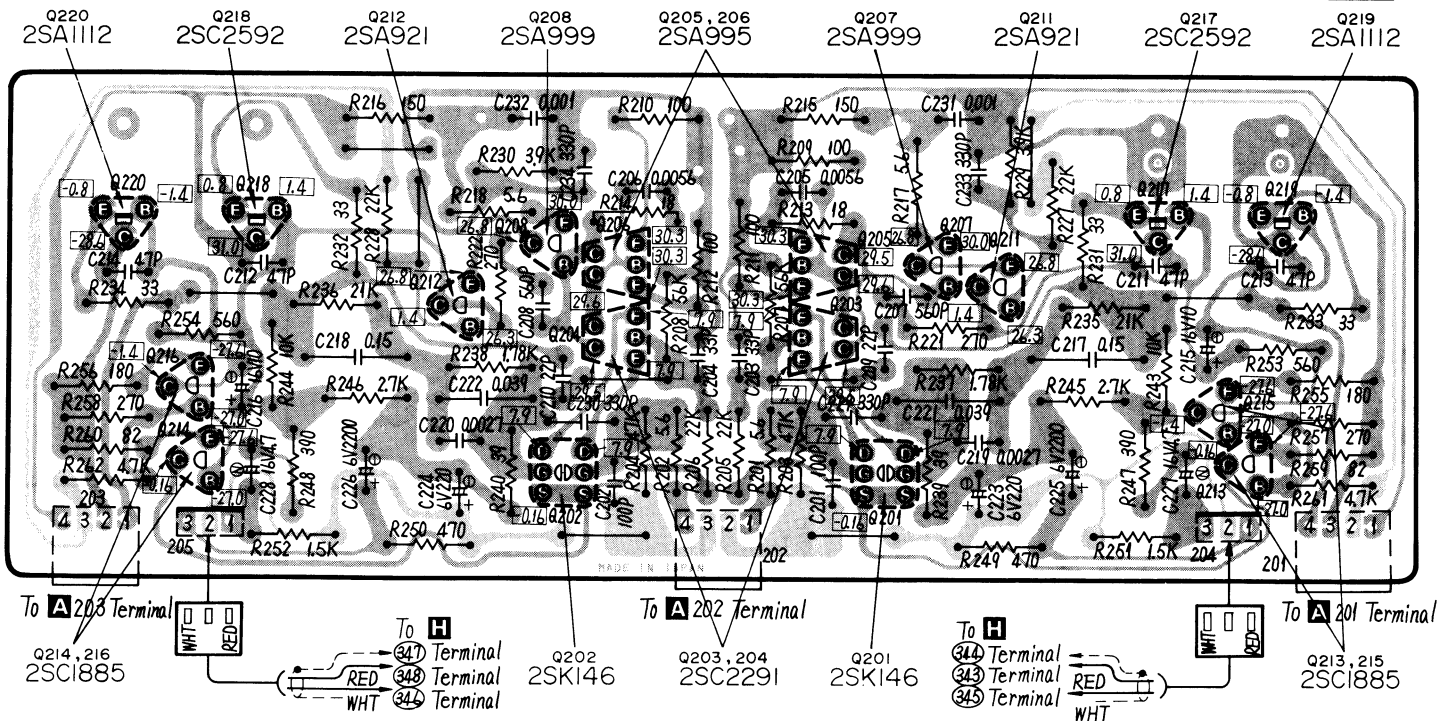
**B** MC Pre-amplifier circuit

**B**



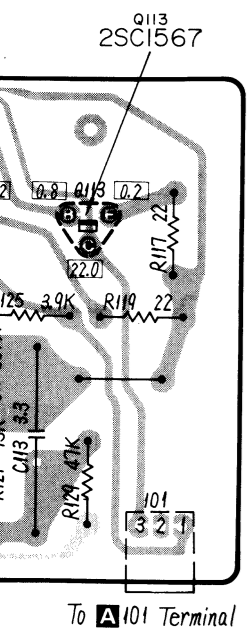
**C** Equalizer circuit

**C**

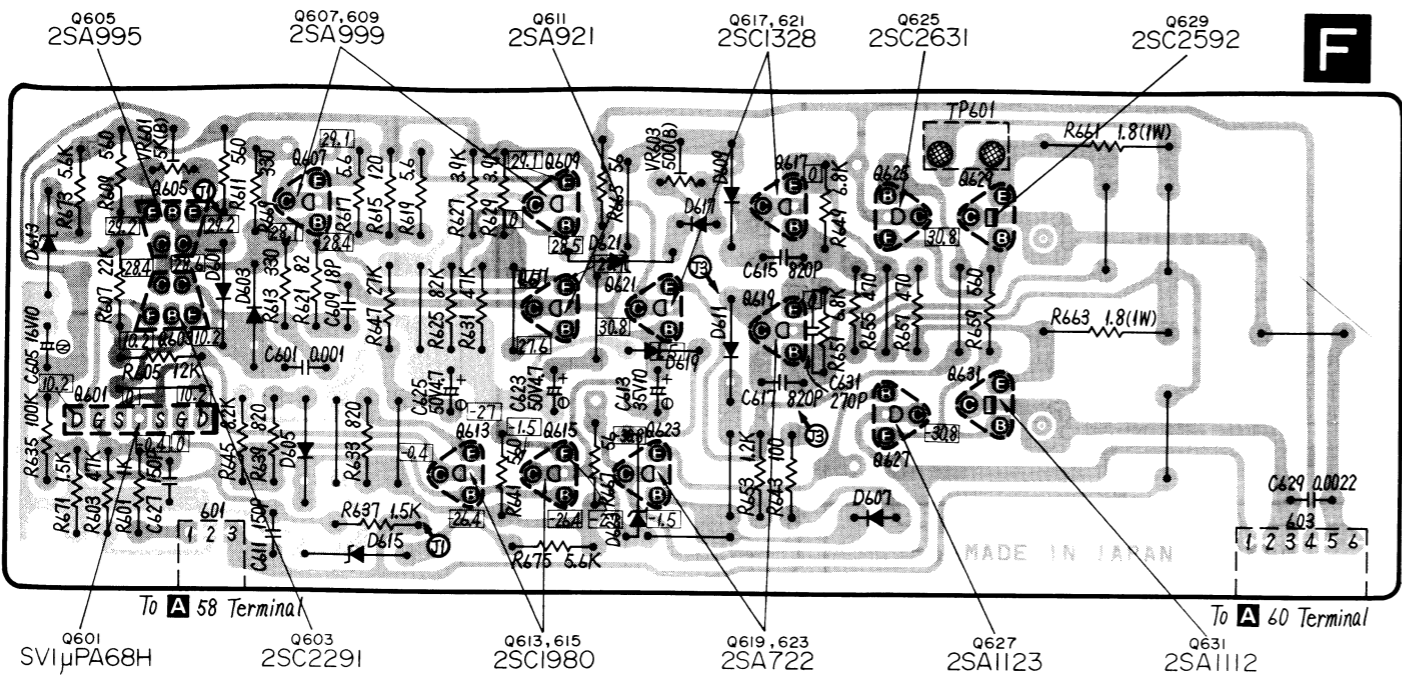


Earth (Ground) Lines

**B**

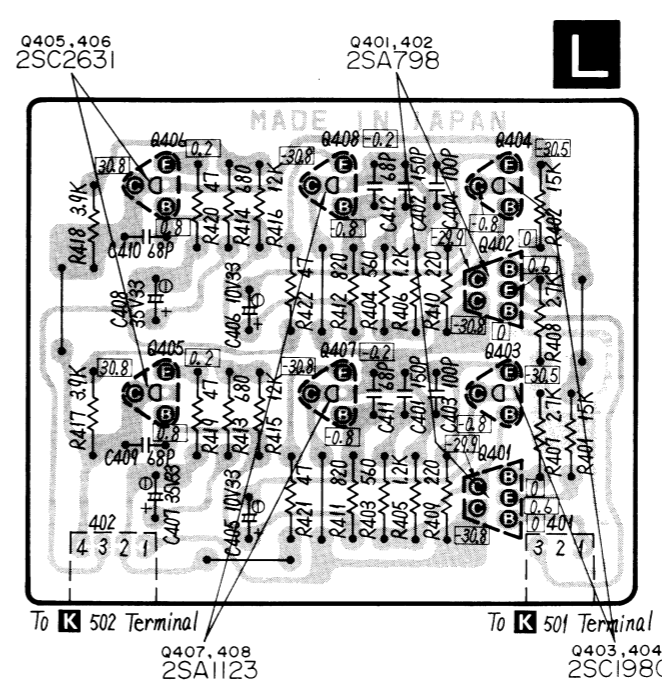


**F** Output amplifier circuit (Left channel)



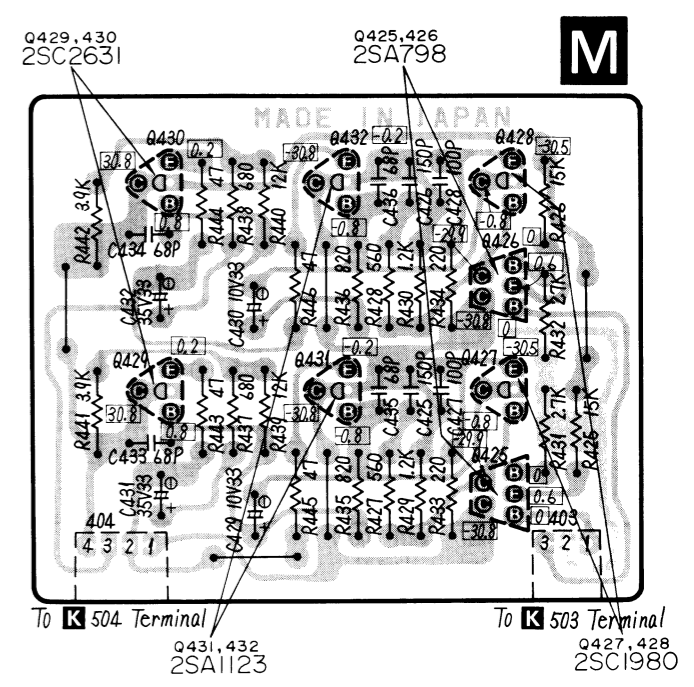
**F**

**L** Super treble circuit



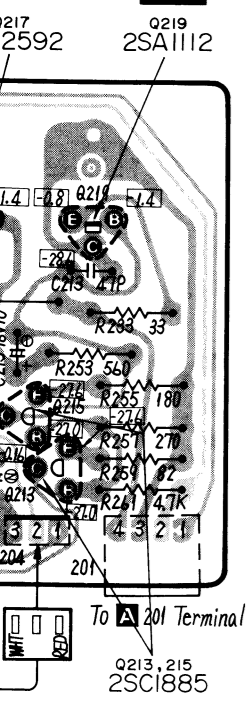
**L**

**M** Treble circuit

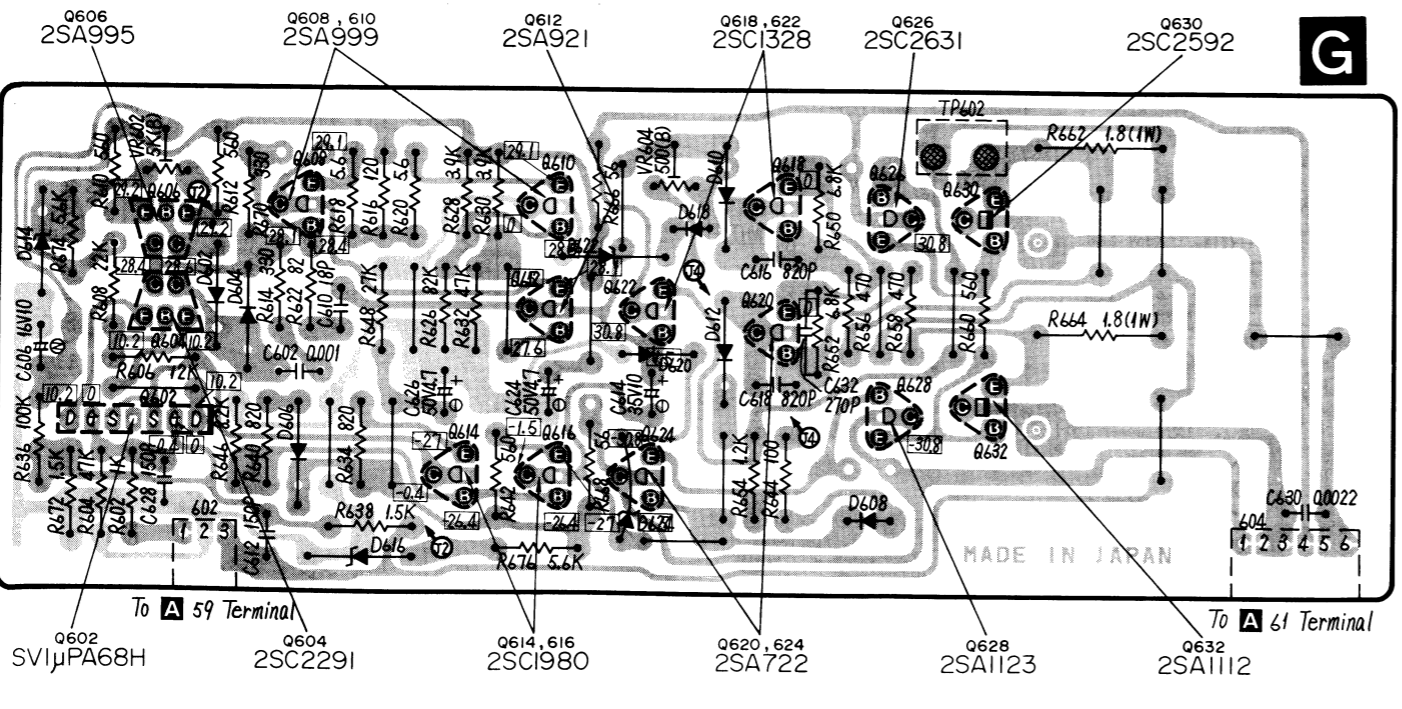


**M**

**C**

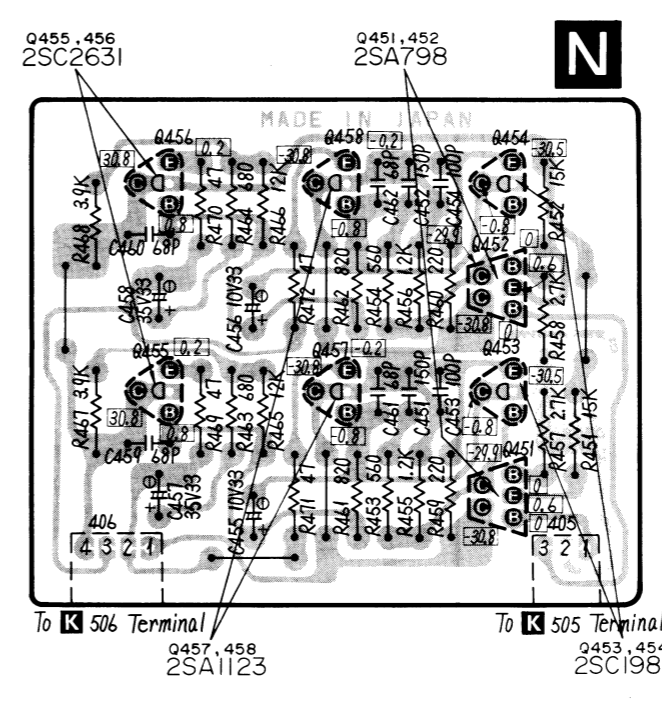


**G** Output amplifier circuit (Right channel)



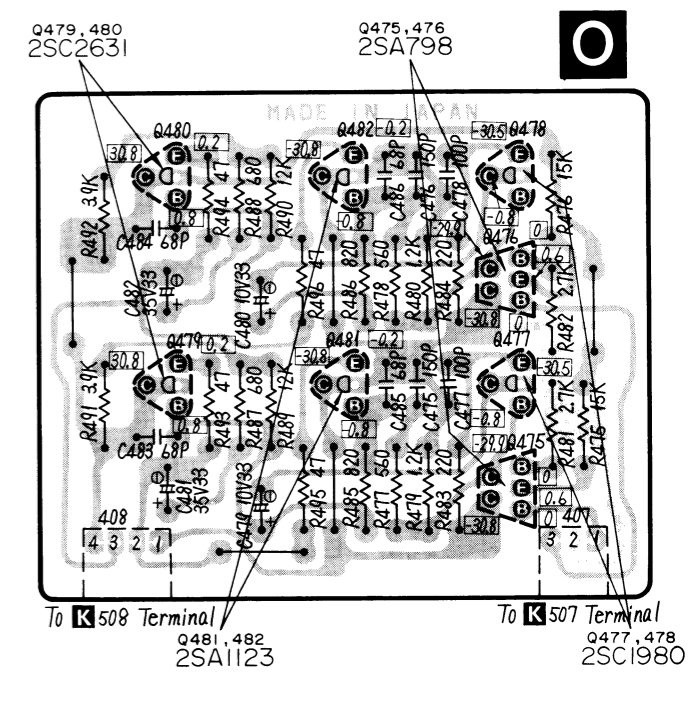
**G**

**N** Bass circuit



**N**

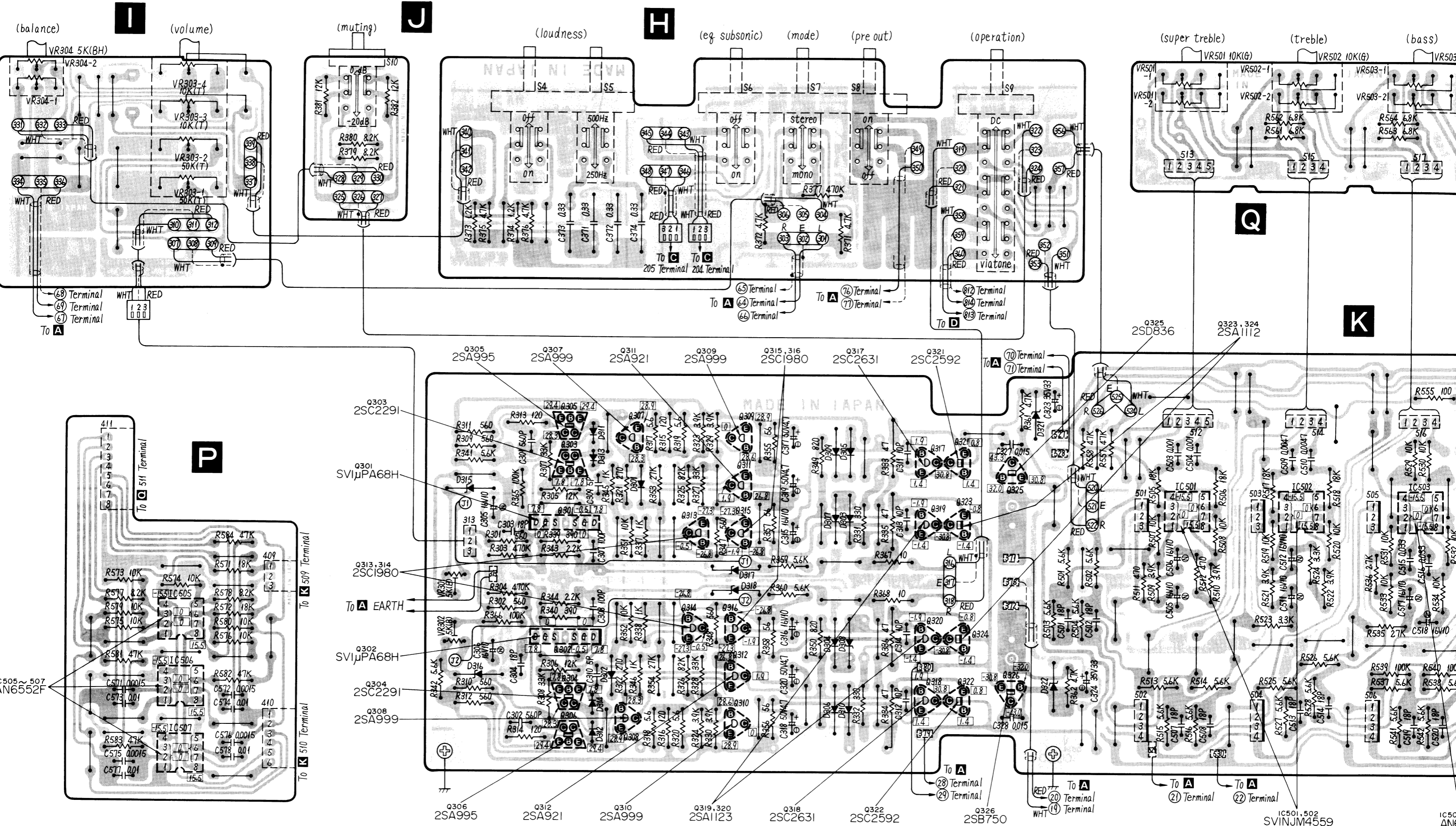
**O** Super bass circuit

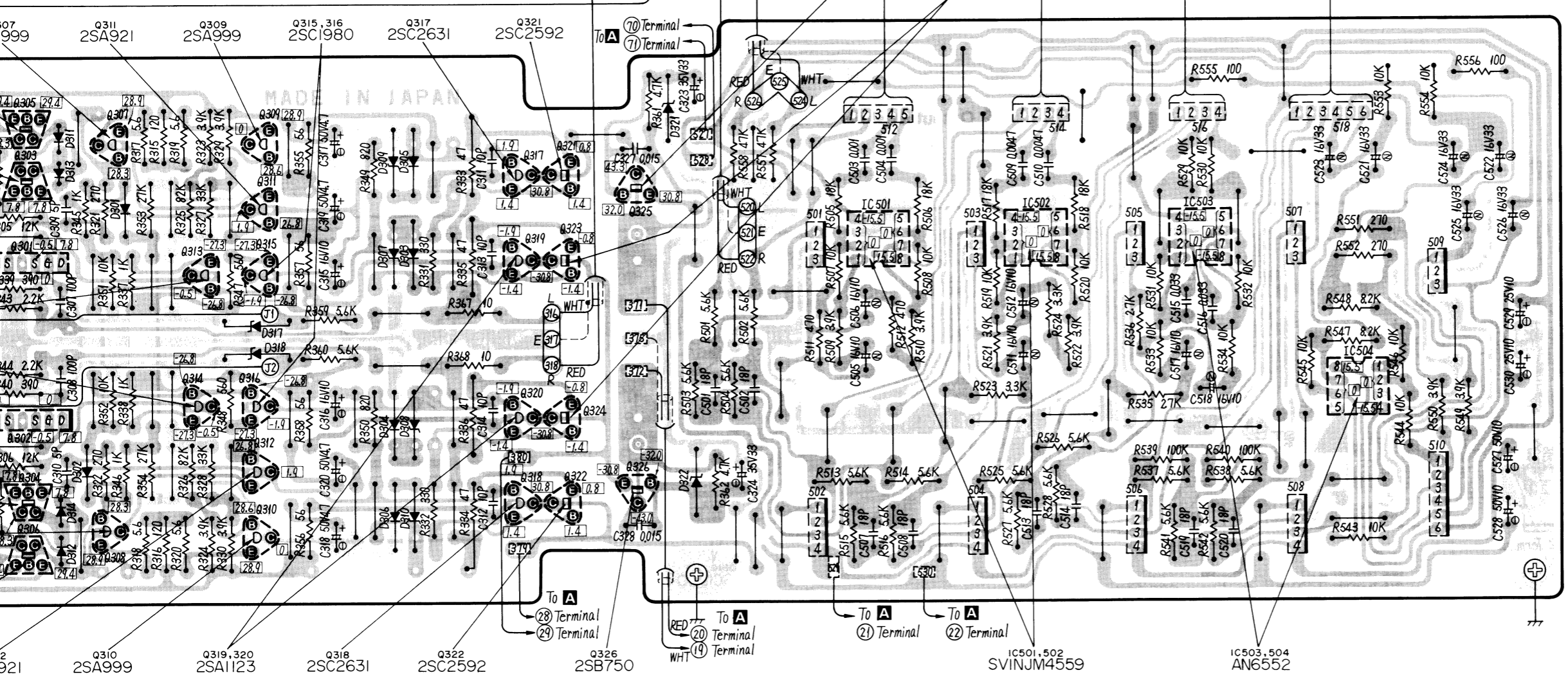
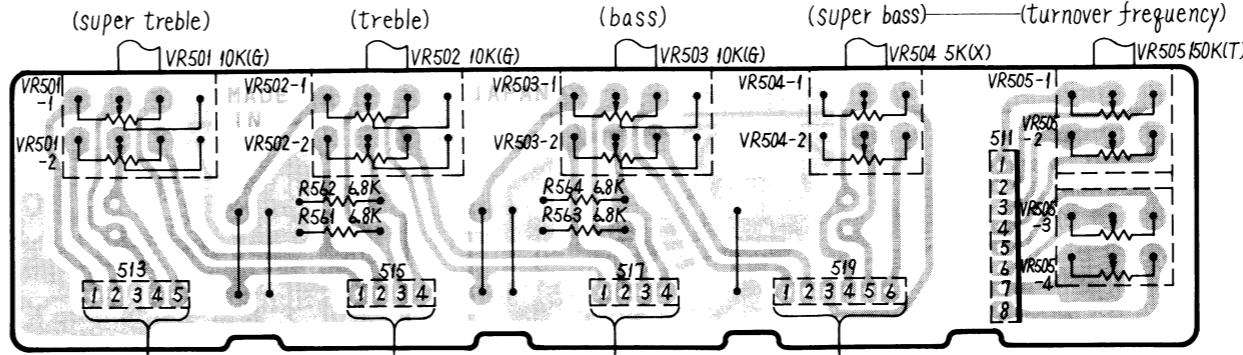
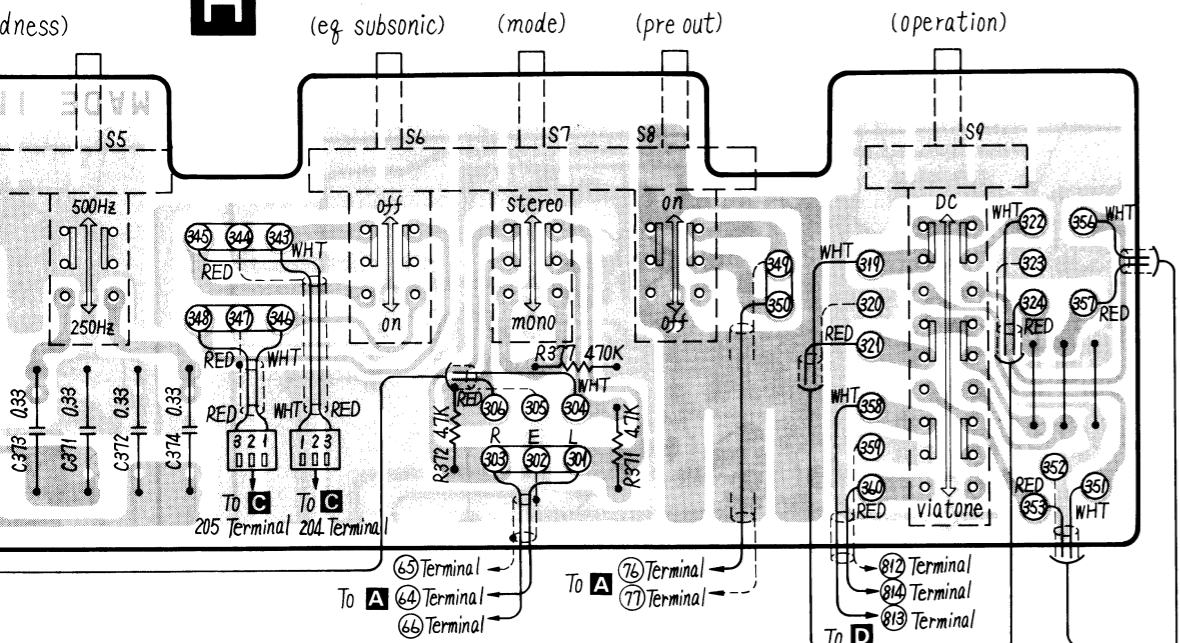


**O**

PRINTED CIRCUIT BOARD

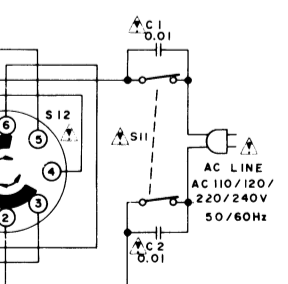
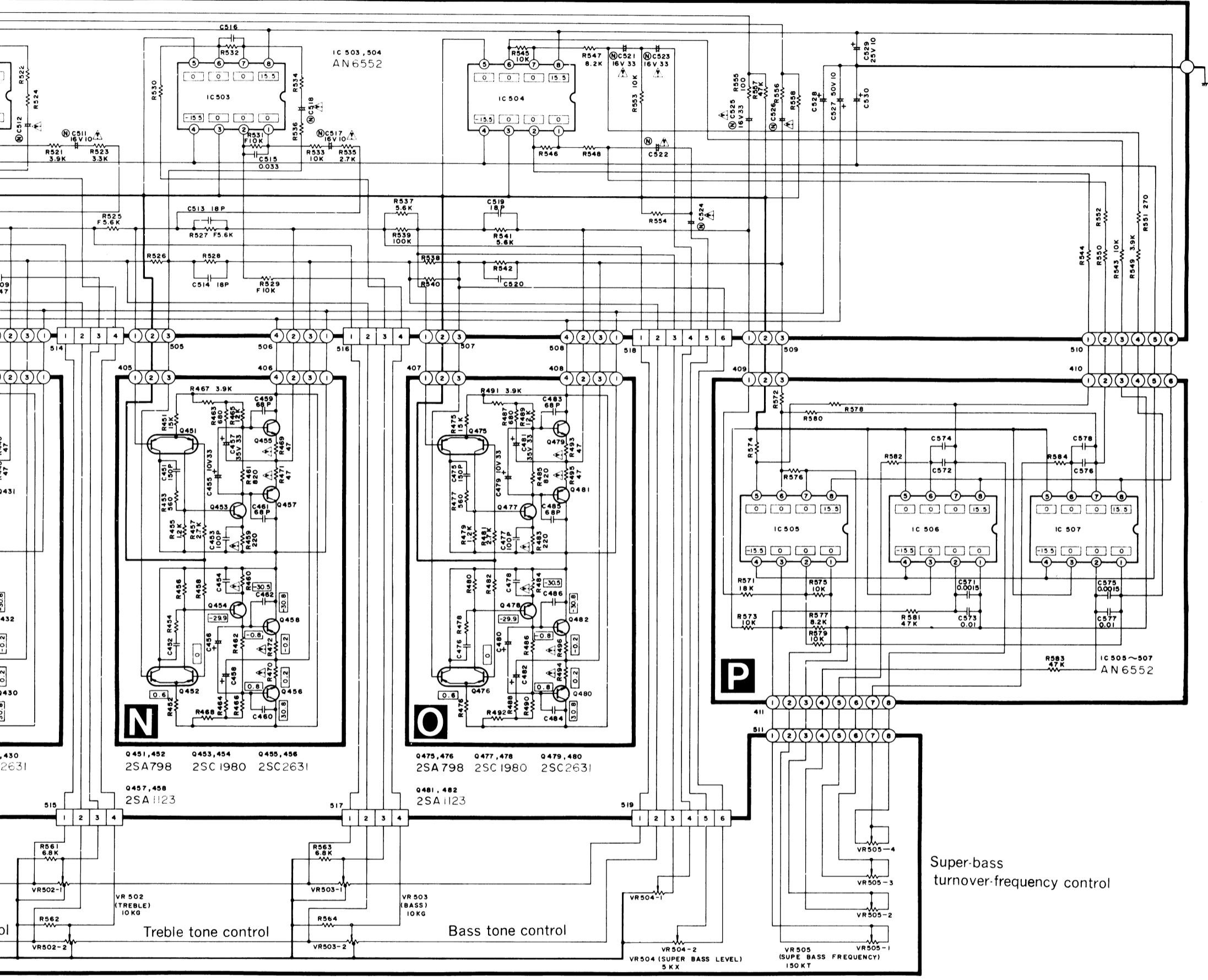
- [H] Operation switches circuit, [I] Volume & Balance control, [J] Muting switch,
- [K] Flat amplifier & Tone control circuits, [Q] Tone control volume





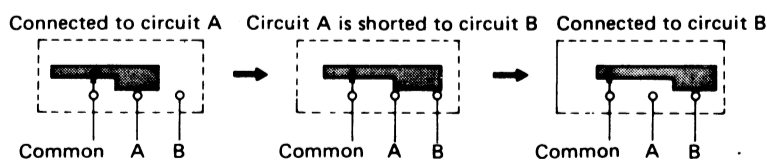
### ■ TERMINAL GUIDE OF TRANSISTORS AND IC'S

<p>SVINJM4559DS</p>	<p>AN6552F</p>
<p>2SK146</p>	<p>2SA794, 2SC1567</p>
<p>SV1μPA68H</p>	<p>2SA978</p>
<p>2SA798</p>	<p>2SA995, 2SC2291</p>
<p>2SA1112, 2SC2592, 2SB750, 2SD836</p>	<p>2SA722, 2SC1328, 2SA777, 2SC1509, 2SA921, 2SC1815, 2SA999L, 2SC1885, 2SA1015, 2SC1980, 2SA1123, 2SC2631</p>

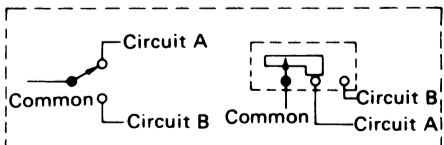


**Shorting Switch**

This unit uses a shorting switch. As illustrated below, the circuit is shorted to the next circuit without being opened. In the circuit diagram, the shaded area represents the common terminal.

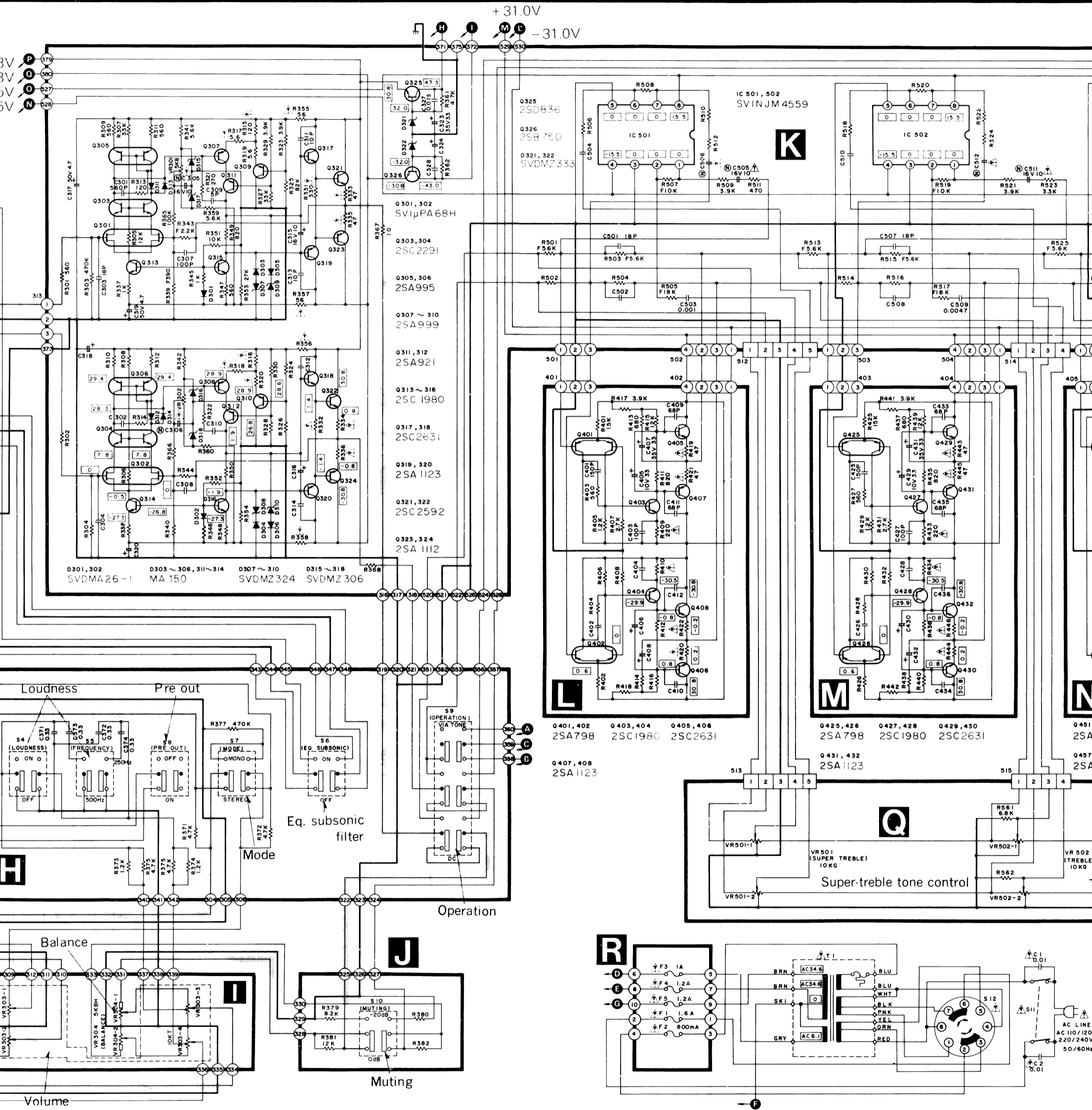


An example of circuit diagram

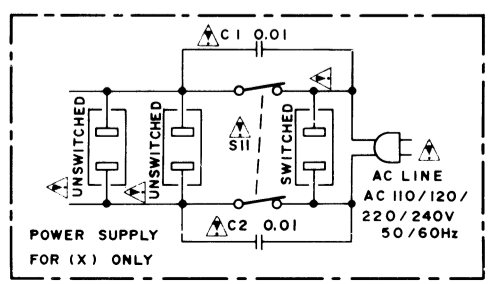
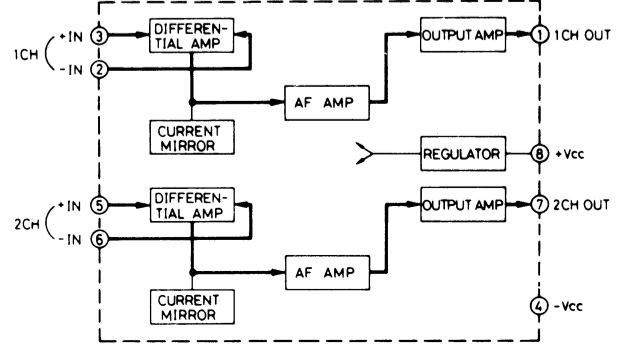


**Notes:**

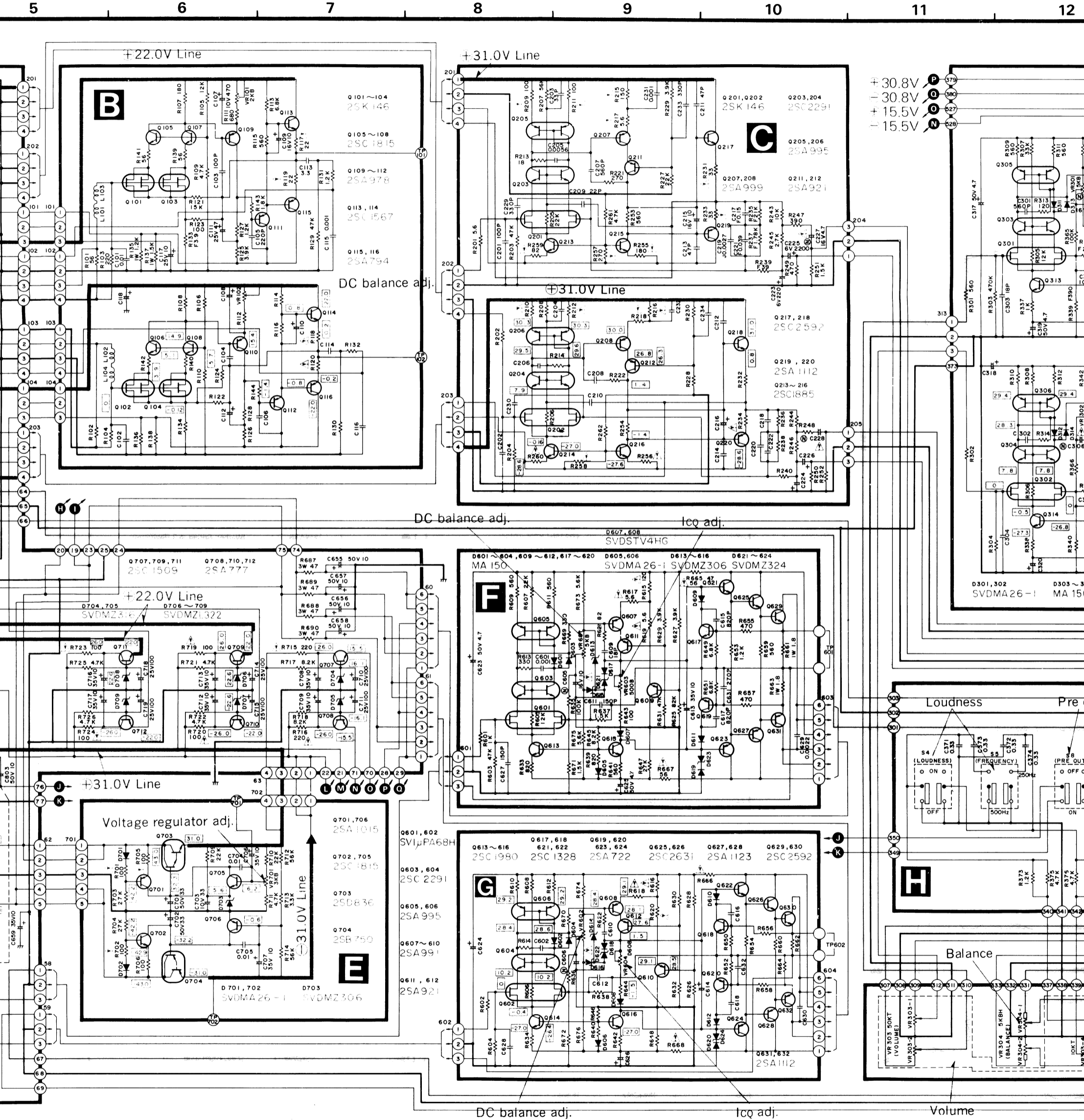
- S1:** Phono selector switch in "phono 1 MM" position.  
① phono 1 MC ↔ ② phono 1MM ↔ ③ phono 2MM
- S2:** Input selector switch in "phono" position.  
① aux ↔ ② tuner ↔ ③ phono ↔ ④ tape 1 ↔ ⑤ tape 2
- S3:** Rec selector switch in "off" position.  
① aux ↔ ② tuner ↔ ③ phono ↔ ④ off ↔ ⑤ tape dubbing 1 ▶ 2 ↔ ⑥ tape dubbing 2 ▶ 1
- S4:** Loudness switch in "off" position.
- S5:** Loudness frequency selector switch in "500 Hz" position.  
500 Hz ↔ 250 Hz
- S6:** Equalizer subsonic-filter switch in "off" position.
- S7:** Mode switch in "stereo" position.  
stereo ↔ mono
- S8:** Pre out switch in "on" position.
- S9:** Operation switch in "DC" position.  
DC ↔ via tone
- S10:** Muting switch in "0 dB" position.
- S11:** Power switch in "on" position.
- S12:** Voltage adjustment switch in "240V" position.
- ⚠ Indicates that only parts specified by the manufacturer be used for safety.
- ⊞ Indicated voltage values are the standare values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- ⊞ Phono signal lines of left channel
- ⊞ Positive (+B) voltage lines.



**LOCK DIAGRAM OF IC**  
 IC501, 502 (SVINJM4559)  
 IC503 ~ 507 (AN6552)



may be modified at any time with the development of new technology.)



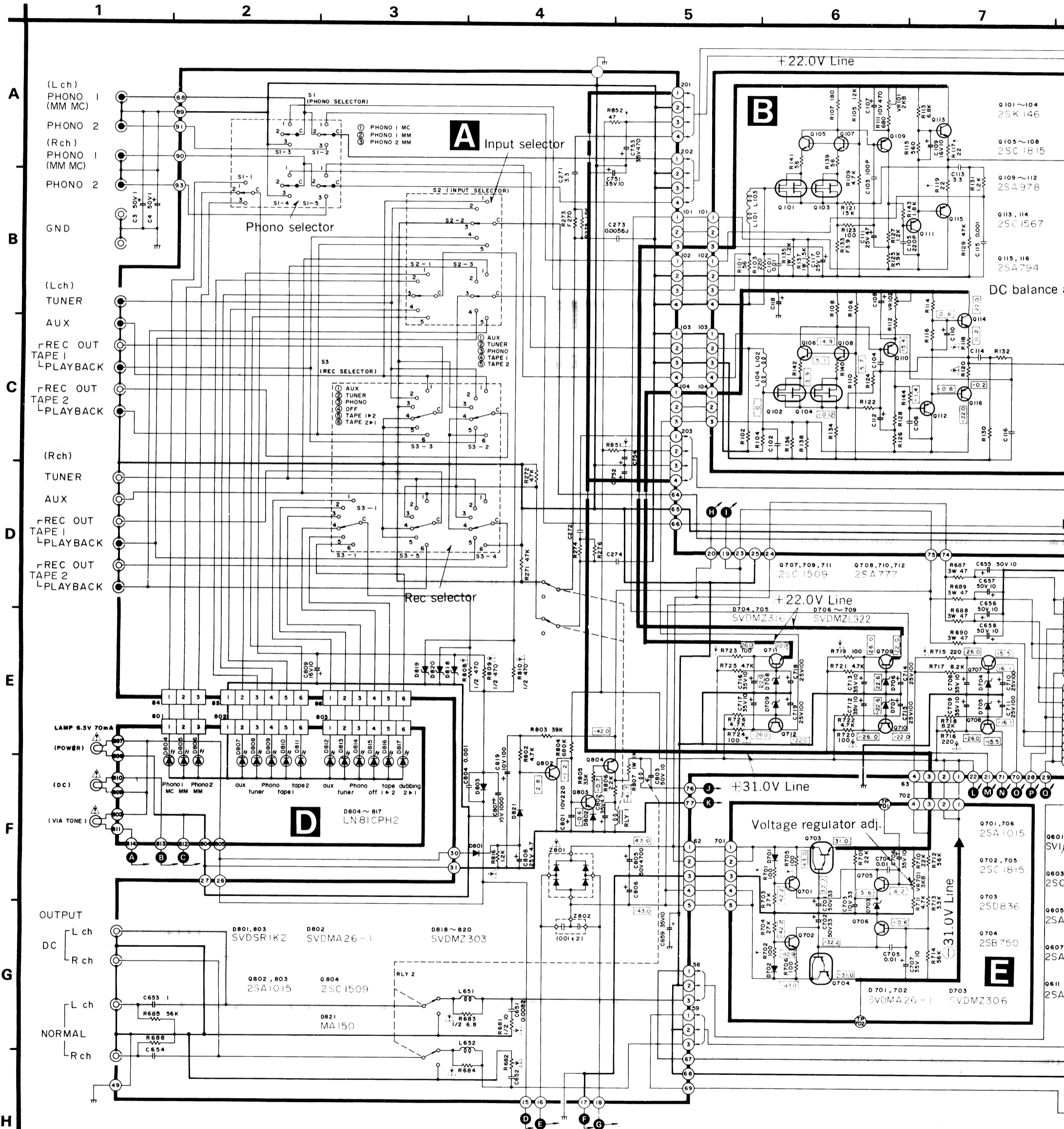
■ BLOCK DIAGRAM OF

IC501, 502 (SVINJM4)  
IC503~507 (AN6552)

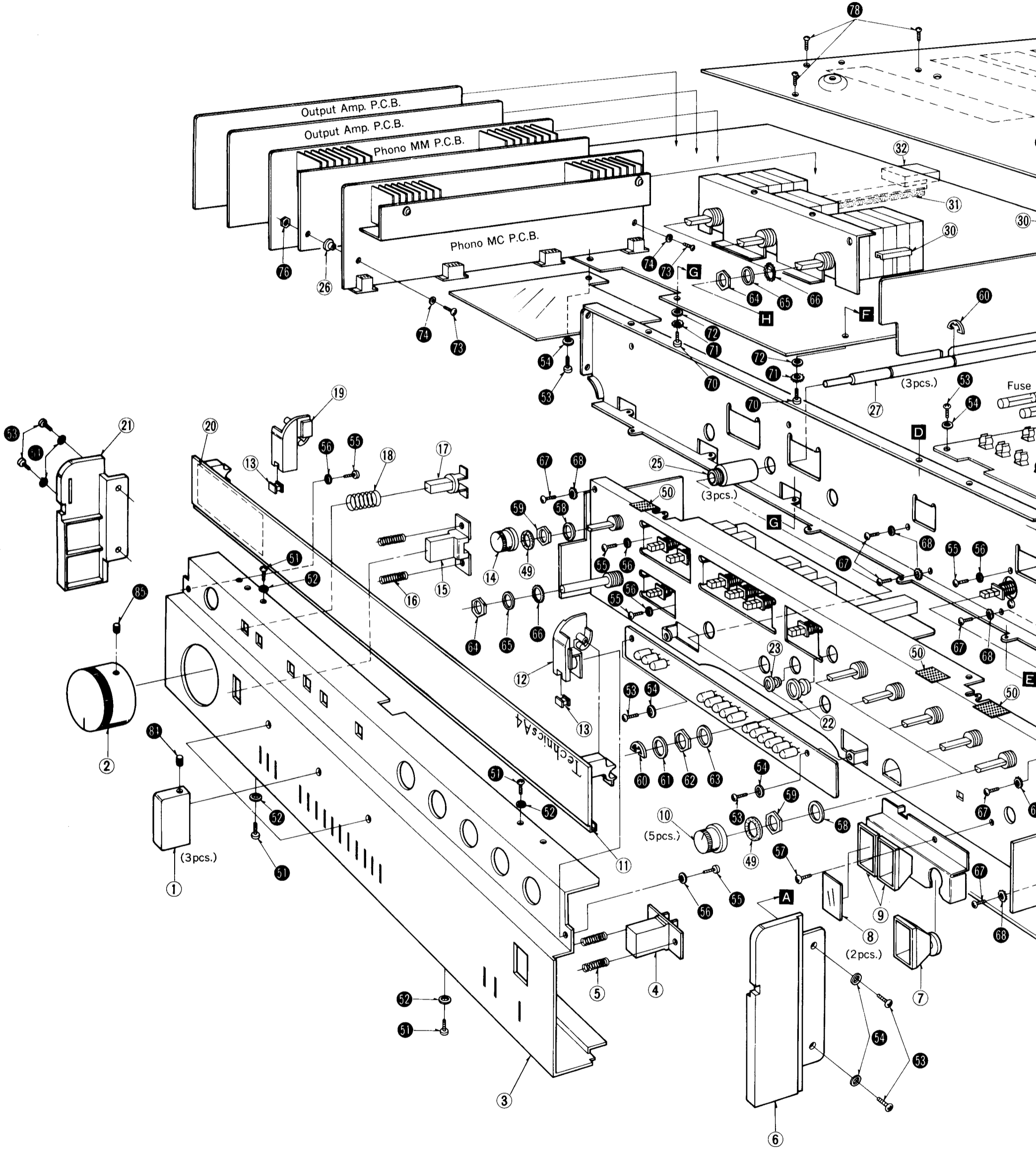


■ SCHEMATIC DIAGRAM..... MODEL **SU-A4K**

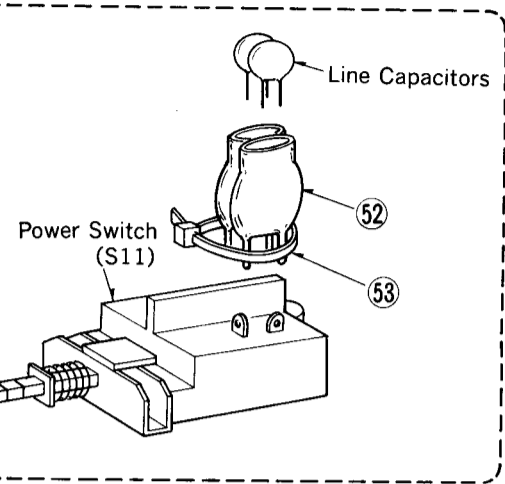
(This schematic diagram may be modified at any time with the development of new technology.)



■ EXPLODED VIEWS

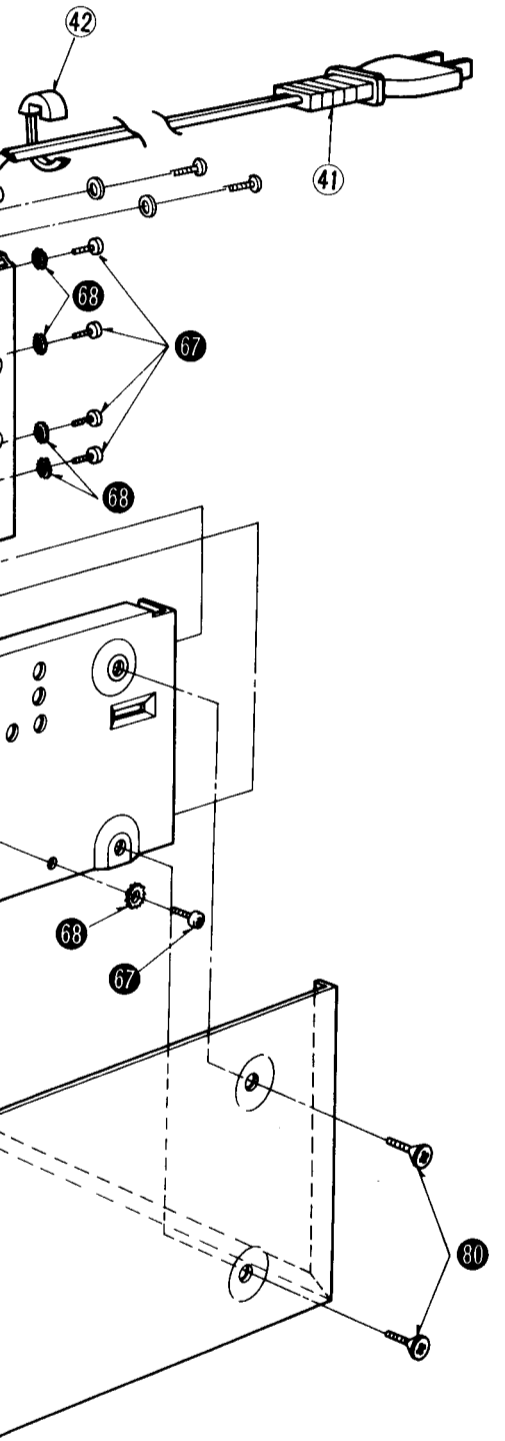






REPLACEMENT PARTS LIST (Cabinet and Chassis Parts)

- Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.  
 2.  $\Delta$  indicates that only parts specified by the manufacturer be used for safety.  
 3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.



Ref. No.	Part No.	Part Name & Description
<b>CABINET and CHASSIS PARTS</b>		
1	SBN903-2	Knob, Phono Selector, Input Selector & Rec Selector
2	SBN905-1	Knob, Volume Control
3	SGWUA4N	Panel, Front Ass'y
4	SBC261	Button, Power Switch
5	SUS193	Spring, Power Switch
6	SGX6791	Ornament, Front Panel
7	SHG1081	Rubber Bracket, Power Indicator
8	SDE249	Filter, Operation Indicator
9	SHG1383-1	Rubber Bracket, Operation Indicator
10	SBN907-1	Knob, Tone Controls
11	SGWUA4KE	Panel, Front Panel (Door)
12	SBH9185	Hinge, Front Panel (Door)
13	SHG1553	Rubber Cushion, Hinge
14	SBN907-1	Knob, Balance Control
15	SBC219-1	Button, Audio Muting Switch
16	SUS159	Spring, Audio Muting Switch
17	SBC263	Button, Push Switches
18	SUS123-2	Spring, Push Switches
19	SBH9187	Hinge, Front Panel (Door)
20	SGK1461-1	Label, Operation
21	SGX6789	Ornament, Front Panel
22	RHR110	Bushing, Lead Wire
23	RHR109	Bushing, Lead Wire
24	SUB43	Coupling Rod, Power Switch
25	SDX265-2	Mounting, Shaft
26	SHR9339	Spacer, Phono MC Amplifier P.C.B.
27	SUB41-1	Shaft, Selector Switches
28	SUB45	Coupler, Selector Switches Shaft
29	SHR401-1	Latch, P.C.B. M'tg
30	SHG1379-3	Rubber Cushion
31	SHG1511-1	Rubber Cushion
32	SHG6013-1	Rubber Cushion
33	SJP1103-1	Pin Plug, Phono Input Terminal
34	SJF2431SA	Terminal, Phono
35	SJF3431-1SA	Terminal, Tape 1 and Tape 2
36	SJF3431SA	Terminal, Tuner and Aux
37	SJF3431A	Terminal, Output
38	RJT204A	Lug, Earth Terminal
39 [E] only	SGP2170-2A	Rear Panel
39 [XA] only	SGP2170-3A	Rear Panel
39 [Other Areas]	SGPUA4KG	Rear Panel
40	SKCUA4N	Cabinet
41 [Other Areas]	$\Delta$ SJA88	AC Cord, Power Source
41 [XE] only	$\Delta$ QFC1205M	AC Cord, Power Source
41 [XA] only	$\Delta$ SJA121	AC Cord, Power Source
42 [XE] only	SHR129	Bushing, AC Cord
42 [Other Areas]	SHR127	Bushing, AC Cord
43	SMX371	Sheet, Shield
44	SNEA204-1S	Terminal, Earth (GND)
45	SNE4017-1	Terminal, Earth (GND)
46	SNTA421-1	Washer, Earth Terminal
47	SKU8290-1	Bottom Board
48	SKL247	Foot
49	SHG1567	Cover, Volume
50	SHR5039	Spacer, Volume Cover
51	SJR205	Terminal, 2 Pin (Except [XA])
52	SMXA65	Cover, Line Capacitors
53	SHR301	Clamper, Wire
54 [XA] only	$\Delta$ SJSJA66-2	Socket, AC Outlets

Ref. No.	Part No.	Part Name & Description
<b>SCREWS, NUTS and WASHERS</b>		
①	XSN3+8BVS	Screw, $\oplus$ 3 + 8 (Front Panel)
②	XWA3B	Washer, Spring, $\phi$ 3 (Front Panel)
③	XTV3+8BFZ	Screw, $\oplus$ 3 + 8
④	XWG3FZ	Washer, Plain, $\phi$ 3
⑤	XSN3+6S	Screw, $\oplus$ 3 + 6 (Switches)
⑥	XWA3B	Washer, Spring, $\phi$ 3 (Switches)
⑦	XTB3+8BFZ	Screw, Tapping, $\oplus$ 3 + 8
⑧	XWA8B	Washer, Spring, $\phi$ 8
⑨	XNS8	Nut, M8
⑩	XUC5FT	Circlip
⑪	SNE81	Washer
⑫	XNS9	Nut, M9
⑬	SNE31	Washer
⑭	XNS8	Nut, M8
⑮	XWA8B	Washer, Spring, $\phi$ 8
⑯	XWC8B	Washer, Toothed Lock, $\phi$ 8
⑰	XTB3+8BFZ	Screw, Tapping, $\oplus$ 3 + 8
⑱	XWC3B	Washer, Toothed Lock, $\phi$ 3
⑲	SNW429-1	Washer
⑳	XTB3+8BFN	Screw, Tapping, $\oplus$ 3 + 8
㉑	XWC3B	Washer, Toothed Lock $\phi$ 3
㉒	XWG3FN	Washer, Plain, $\phi$ 3
㉓	XSN3+10S	Screw, $\oplus$ 3 + 10
㉔	XWA3B	Washer, Spring, $\phi$ 3
㉕	XWG3FZ	Washer, Plain, $\phi$ 3
㉖	XNG3ES	Nut, M3
㉗	XXAS3K5S	Screw, (Coupler)
㉘	XTB3+8BFZ	Screw, Tapping, $\oplus$ 3 + 8
㉙	XTB3+10BFZ	Screw, Tapping, $\oplus$ 3 + 10
㉚	XSS5+12F1S	Screw, $\oplus$ 5 + 12 (Cabinet)
㉛	XWC4B	Washer, Toothed Lock, $\phi$ 4
㉜	XNG4ES	Nut, M4 (Earth Terminal)
㉝	XTB4+8BFZ	Screw, Tapping, $\oplus$ 4 + 8
㉞	XXE3D5FZ	Screw, (Selector Knob)
㉟	XXE4D5FZ	Screw, (Volume Control Knob)
<b>ACCESSOIRES</b>		
A1	SJP2237-1	Cord, Stereo Pin-Type Connection
A2 [XA] only	$\Delta$ RJP74-1	Plug Adaptor, AC Power
A3 [XA] only	$\Delta$ RJP75	Plug Adaptor, AC Power
<b>PACKING PARTS</b>		
P1	SPP661	Polyethylene Bag
P2	SPE313	Pad, Front Panel (Door)
P3	SPE315	Pad, AC Cord
P4	SPJ15	Polyethylene Bag (AD Plug)
P5	SPS2567-1	Pad, Left Side
P6	SPS2569-1	Pad, Right Side
P7	SPS2813	Pad, Top Side
P8	SPG2699	Carton Box
P8 [XGF] only	SPG2689	Carton Box
P9	SQF10567	Instructions Book, Printed Matter
P9 [XA] only	SQF10575	Instructions Book, Printed Matter

Areas

- \* [E] and [EG] are available in Scandinavia and European except Belgium, United Kingdom, Switzerland, Holland and France.
- \* [EB] is available in Belgium.
- \* [XE] is available in United Kingdom.
- \* [XGH] is available in Holland.
- \* [XGF] is available in France.
- \* [XA] is available in Asia, Latin America, Middle East and Africa.

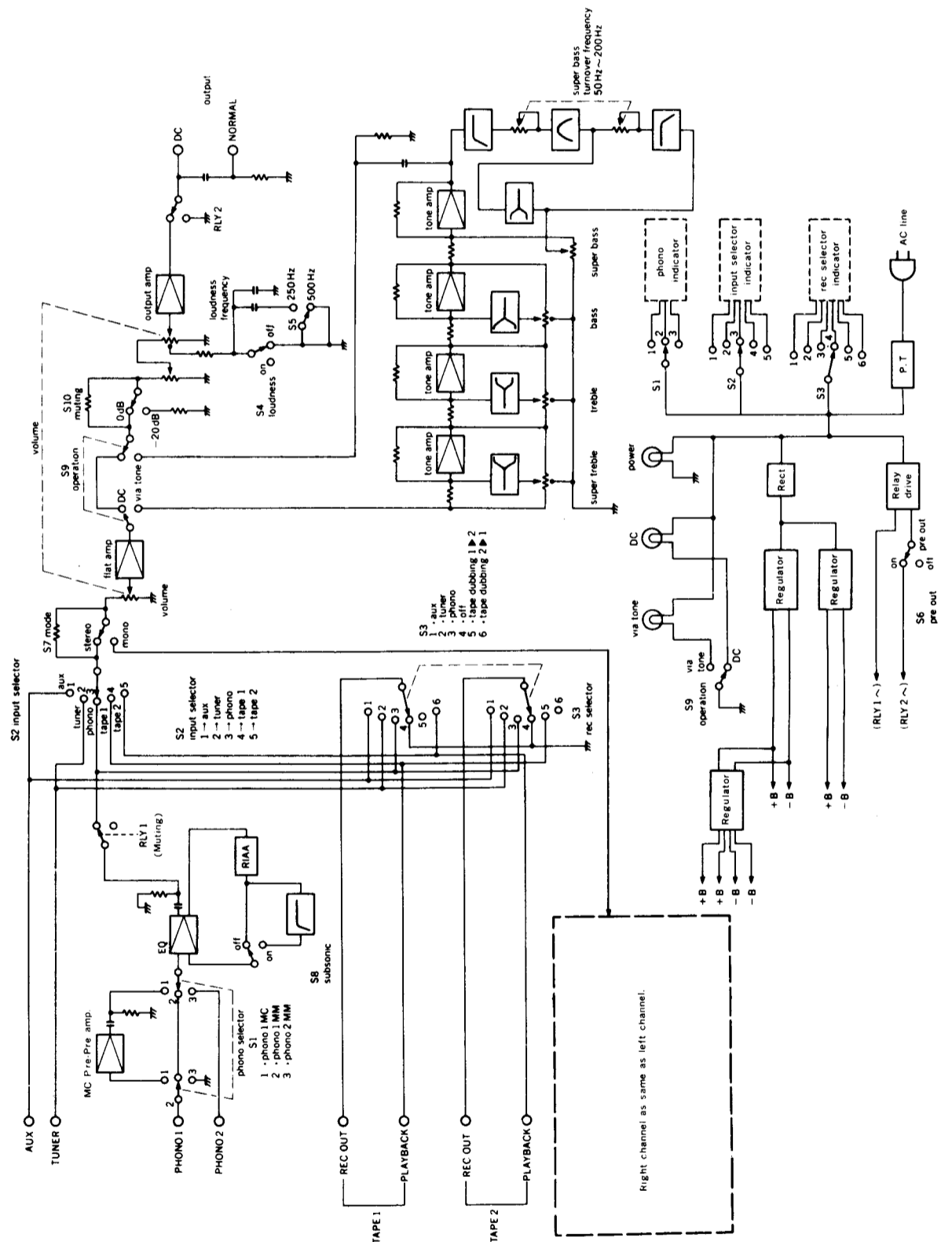
# SU-A4K SU-A4K

## Cabinet and Chassis Parts)

Please use this part number for parts orders.  
 Part number to be used for safety.  
 Part area. Parts without these indications can be

## ■ BLOCK DIAGRAM

Ref. No.	Part No.	Part Name & Description
<b>SCREWS, NUTS and WASHERS</b>		
①	XSN3+8BVS	Screw, ⊕ 3 + 8 (Front Panel)
②	XWA3B	Washer, Spring, φ 3 (Front Panel)
③	XTV3+8BFZ	Screw, ⊕ 3 + 8
④	XWG3FZ	Washer, Plain, φ 3
⑤	XSN3+6S	Screw, ⊕ 3 + 6 (Switches)
⑥	XWA3B	Washer, Spring, φ 3 (Switches)
⑦	XTB3+8BFZ	Screw, Tapping, ⊕ 3 + 8
⑧	XWA8B	Washer, Spring, φ 8
⑨	XNSB	Nut, M8
⑩	XUC5FT	Circlip
⑪	SNE81	Washer
⑫	XNS9	Nut, M9
⑬	SNE31	Washer
⑭	XNS8	Nut, M8
⑮	XWA8B	Washer, Spring, φ 8
⑯	XWC8B	Washer, Toothed Lock, φ 8
⑰	XTB3+8BFZ	Screw, Tapping, ⊕ 3 + 8
⑱	XWC3B	Washer, Toothed Lock, φ 3
⑲	SNW429-1	Washer
⑳	XTB3+8BFN	Screw, Tapping, ⊕ 3 + 8
㉑	XWC3B	Washer, Toothed Lock φ 3
㉒	XWG3FN	Washer, Plain, φ 3
㉓	XSN3+10S	Screw, ⊕ 3 + 10
㉔	XWA3B	Washer, Spring, φ 3
㉕	XWG3FZ	Washer, Plain, φ 3
㉖	XNG3ES	Nut, M3
㉗	XXAS3K5S	Screw, (Coupler)
㉘	XTB3+8BFZ	Screw, Tapping, ⊕ 3 + 8
㉙	XTB3+10BFZ	Screw, Tapping, ⊕ 3 + 10
㉚	XSS5+12F1S	Screw, ⊕ 5 + 12 (Cabinet)
㉛	XWC4B	Washer, Toothed Lock, φ 4
㉜	XNG4ES	Nut, M4 (Earth Terminal)
㉝	XTB4+8BFZ	Screw, Tapping, ⊕ 4 + 8
㉞	XXE3D5FZ	Screw, (Selector Knob)
㉟	XXE4D5FZ	Screw, (Volume Control Knob)
<b>ACCESSOIRES</b>		
A1	SJP2237-1	Cord, Stereo Pin-Type Connection
A2 [XA] only	RJP74-1	Plug Adaptor, AC Power
A3 [XA] only	RJP75	Plug Adaptor, AC Power
<b>PACKING PARTS</b>		
P1	SPP661	Polyethylene Bag
P2	SPE313	Pad, Front Panel (Door)
P3	SPE315	Pad, AC Cord
P4	SPJ15	Polyethylene Bag (AD Plug)
P5	SPS2567-1	Pad, Left Side
P6	SPS2569-1	Pad, Right Side
P7	SPS2813	Pad, Top Side
P8	SPG2699	Carton Box
P8 [XGF] only	SPG2689	Carton Box
P9	SQF10567	Instructions Book, Printed Matter
P9 [XA] only	SQF10575	Instructions Book, Printed Matter



**FXE PPHU „FOXEL”**  
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