

167D6

ORDER NO. SD81092040C8

Service Manual

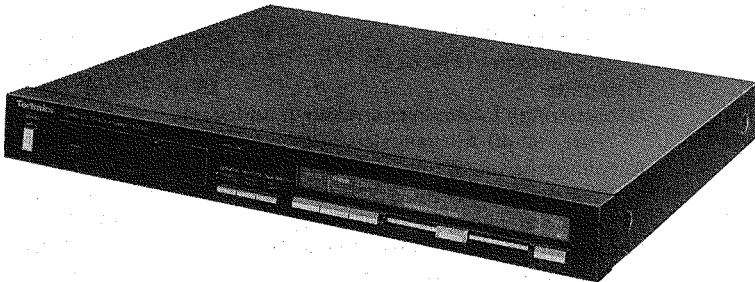
Stereo DC Control Amplifier

67890

AVE

SU-A8(K)

[E],[EG],[EK],[EF],[EH],
[EB],[Ei],[XA],[XL]



* The black type model is provided with (K) in the Service Manual. **SU-A8(K)**
* The colors of this model is black type only.

Areas

- * [E] is available in Scandinavia and Switzerland.
- * [EG] is available in F.R. Germany.
- * [EK] is available in United Kingdom.
- * [EF] is available in France.
- * [EH] is available in Holland.
- * [EB] is available in Belgium.
- * [Ei] is available in Italy.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XL] is available in Australia.

English

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

Total harmonic distortion	
PHONO MM (20 Hz~20 kHz)	0.002%
	(2V output at vol. -20 dB)
PHONO MC (20 Hz~15 kHz)	0.007%
	(2V output at vol. -20 dB)
TUNER, AUX, TAPE (20 Hz~20 kHz)	0.002%
	(2V output at vol. -20 dB)
Input sensitivity and impedance	
PHONO MM	2.5 mV/47kΩ
MC	170μV/220Ω
TUNER, AUX, TAPE	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	
PHONO MM	160 mV
MC	11 mV
S/N (IHF, A)	
rated output	
PHONO MM	77 dB (88 dB, IHF, '66)
MC (250μV)	71 dB (73 dB, IHF, '66)
TUNER, AUX, TAPE	93 dB (102 dB IHF, '66.)
-26 dB output	
PHONO MM	66 dB
MC (250μV)	66 dB
TUNER, AUX, TAPE	70 dB
Frequency response	
PHONO MM	RIAA standard curve ±0.2 dB
MC	RIAA standard curve ±0.5 dB
TUNER, AUX, TAPE	DC~20 kHz, +0 dB, -0.2 dB
	DC~100 kHz, +0 dB, -3 dB

Maximum output voltage

PHONO MM	9V (30 Hz~15 kHz)
PHONO MC	9V (30 Hz~15 kHz)
TUNER, AUX, TAPE	10V (30 Hz~15 kHz)

Tone controls

BASS	50 Hz, +10 dB~ -10 dB
TREBLE	20 kHz, +10 dB~ -10 dB

Subsonic filter

20 Hz, -12 dB/oct.

Loudness control (volume at -30 dB)

50 Hz, +9 dB

Output voltage and impedance

PRE OUT	rated 1V, max. 10V/2Ω
REC OUT	150 mV/600Ω

Channel balance, 250 Hz~6,300 Hz

±1 dB

Channel separation, 1 kHz

50 dB

■ GENERAL

Power consumption	15W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 53 × 365 mm
	(16-15/16" × 2-3/32" × 14-3/8")
Weight	4.8 kg
	(10.6 lb.)

Note:

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

Deutsch

TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

Table with technical specifications in German, including sections for Verstärker, Eingangsempfindlichkeit, and Allgemeine Daten.

Français

CARACTERISTIQUES (Sujet à changement sans preavis.)

Table with technical specifications in French, including sections for Section Amplificateur, Réponse de fréquence, and Divers.

Español

ESPECIFICACIONES (Estas especificaciones están sujetas a cualquier cambio sin previo aviso.)

Table with technical specifications in Spanish, including sections for Sección Amplificador, Respuesta de frecuencia, and General.

CONTENTS

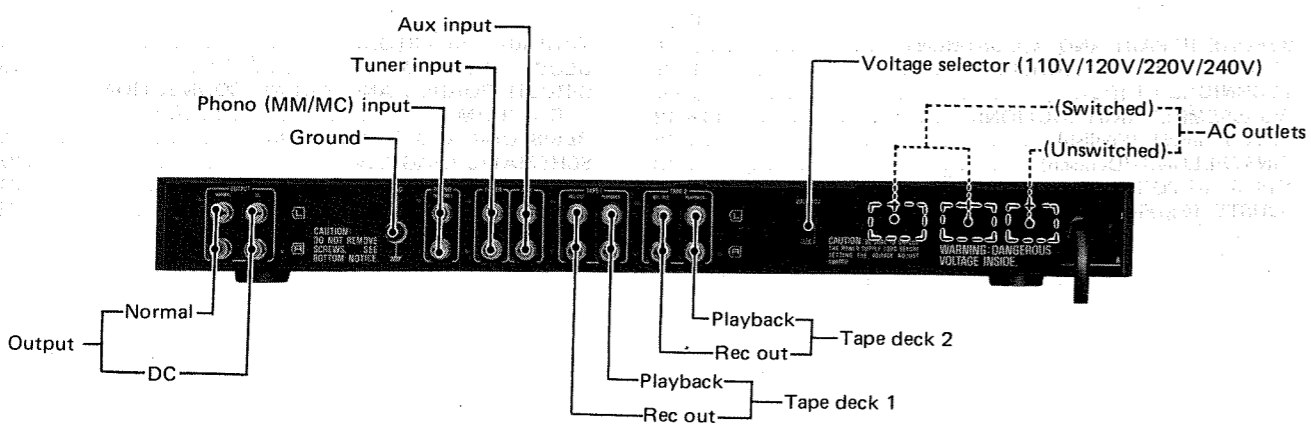
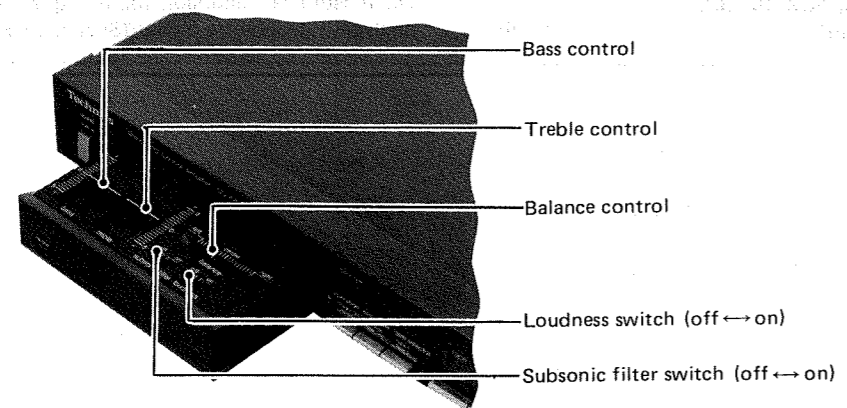
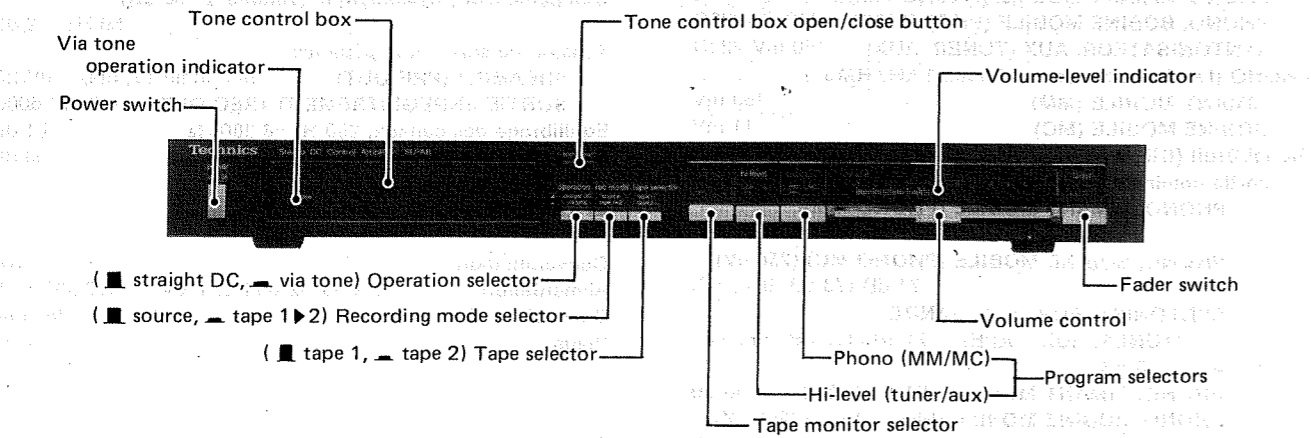
Table listing document sections and their corresponding page numbers.

BEFORE REPAIR AND ADJUSTMENT

Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a voltage regulator to make sure that the current consumed is free of abnormality. The current consumed at 60Hz/50Hz in no-signal mode is shown below with respect to supply voltage 110V/120V/220V/240V.

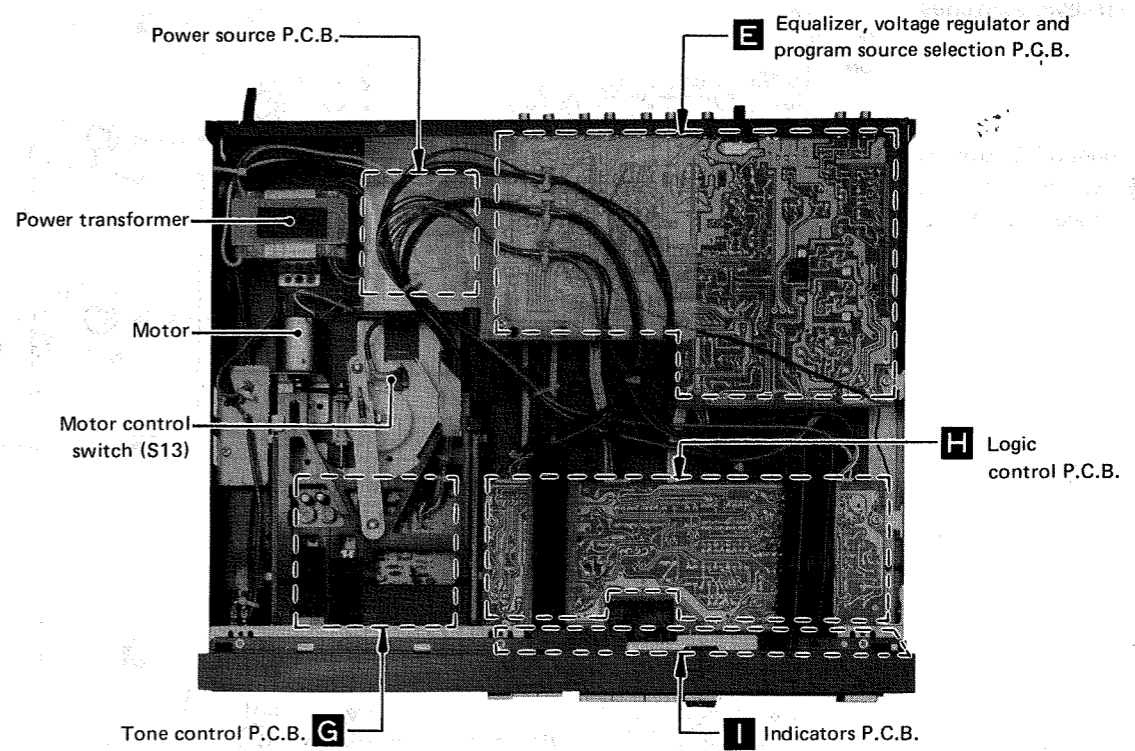
Power supply voltage		AC 110V	AC 120V	AC 220V	AC 240V
Current consumed	50Hz	95 ~ 190 mA	90 ~ 180mA	50 ~ 100 mA	40 ~ 85mA
	60Hz	90 ~ 185mA	85 ~ 170 mA	45 ~ 90 mA	40 ~ 85mA

LOCATION OF CONTROLS

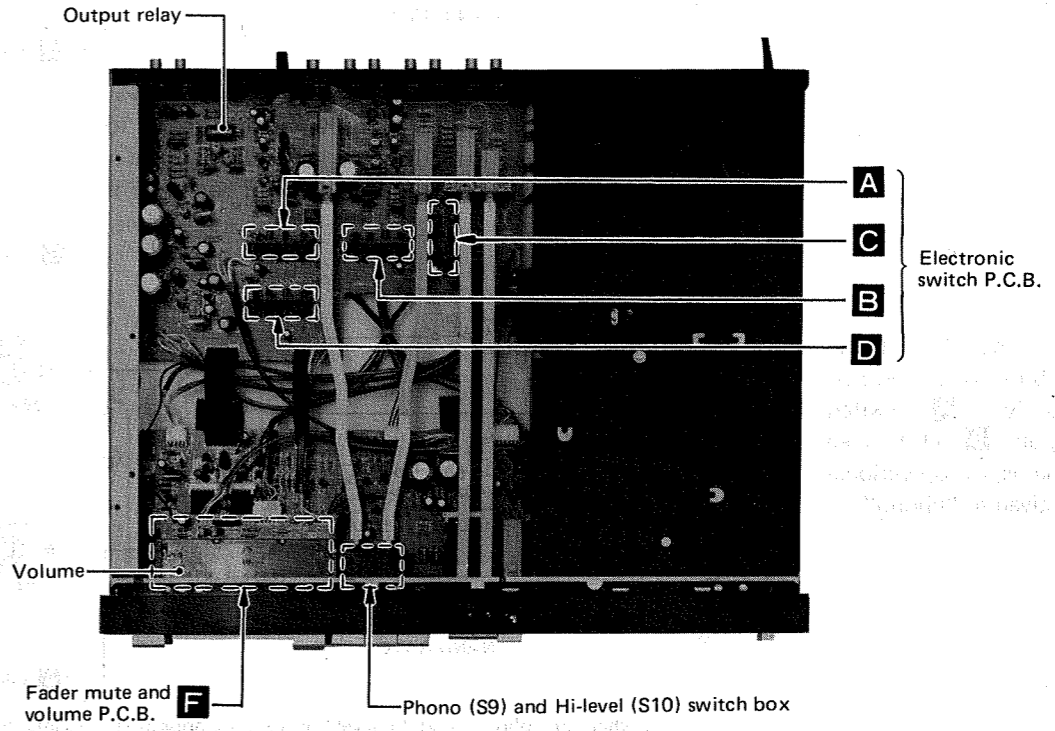


* The product for destination [XA] is equipped with AC outlets.

Top view



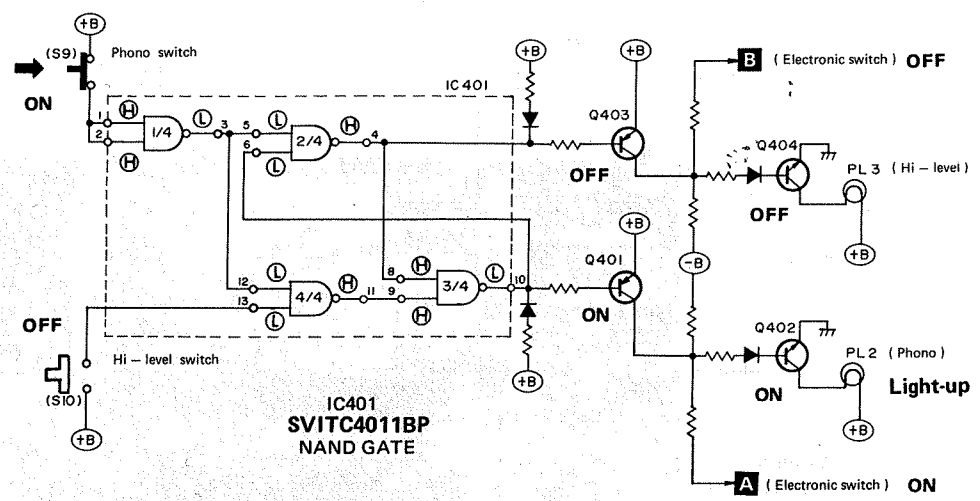
Bottom view



TECHNICAL GUIDE

1. Phono and Hi-level switches

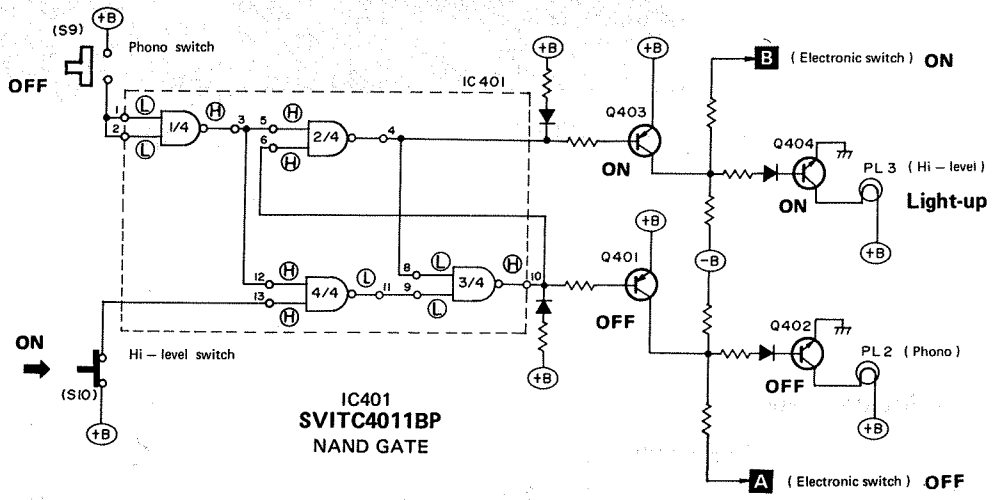
(1) When the "phono" button is pressed, **A** switch turns ON, and **B**, OFF. (See Fig. 1.)



(When the "phono" button is pressed)

Fig. 1

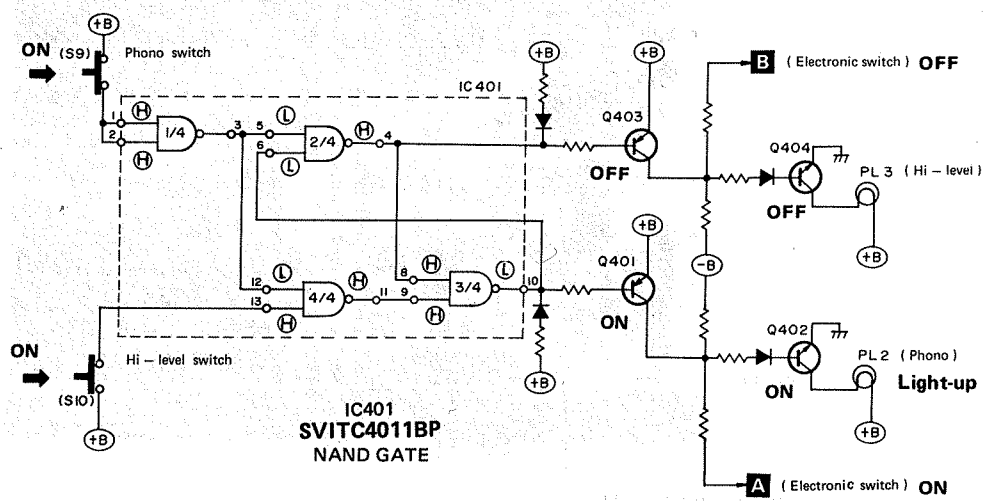
(2) When the "hi-level" button is pressed, **A** switch turns OFF, and **B**, ON. (See Fig. 2.)



(When the "hi-level" button is pressed)

Fig. 2

(3) When the "phono" and the "hi-level" buttons are pressed simultaneously, **A** switch turns ON, and **B**, OFF. (See Fig. 3.) That is, the operational priority is given to "phono".



(When the "phono" and "hi-level" buttons are pressed at the same time, the operational priority is given to the "phono")

Fig. 3

2. Tape monitor and fader switches

- When neither "tape monitor" nor "fader" button is pressed, the circuit is as shown in Fig. 4 where **C** switch is OFF, **D** switch, ON, and FET for muting is not operating. (Since C409 and C410 are sufficiently charged, current **I**₁ and **I**₂ flow in the direction of the arrow.)
- When the button is pressed, input of IC402 momentarily becomes "high", causing current **I**₁ and **I**₂ to flow as shown in Fig. 5. Soon, the current flows in the original direction, but the output of flipflop IC remains as shown in Fig. 5. The time required for directional change of **I**₁ and **I**₂ depends on R420 and C410 (or R419 or C409). This circuit configuration is intended to prevent faulty operation of the electronic switch due to chattering.

3. Muting relay and fader FET circuits

When the power switch is set to ON, no sound is made for a few seconds. This is because the muting circuit is operating. When the muting circuit operates to turn the relay ON, then fader FET turns OFF 2 or 3 seconds later. And then the sound is produced.

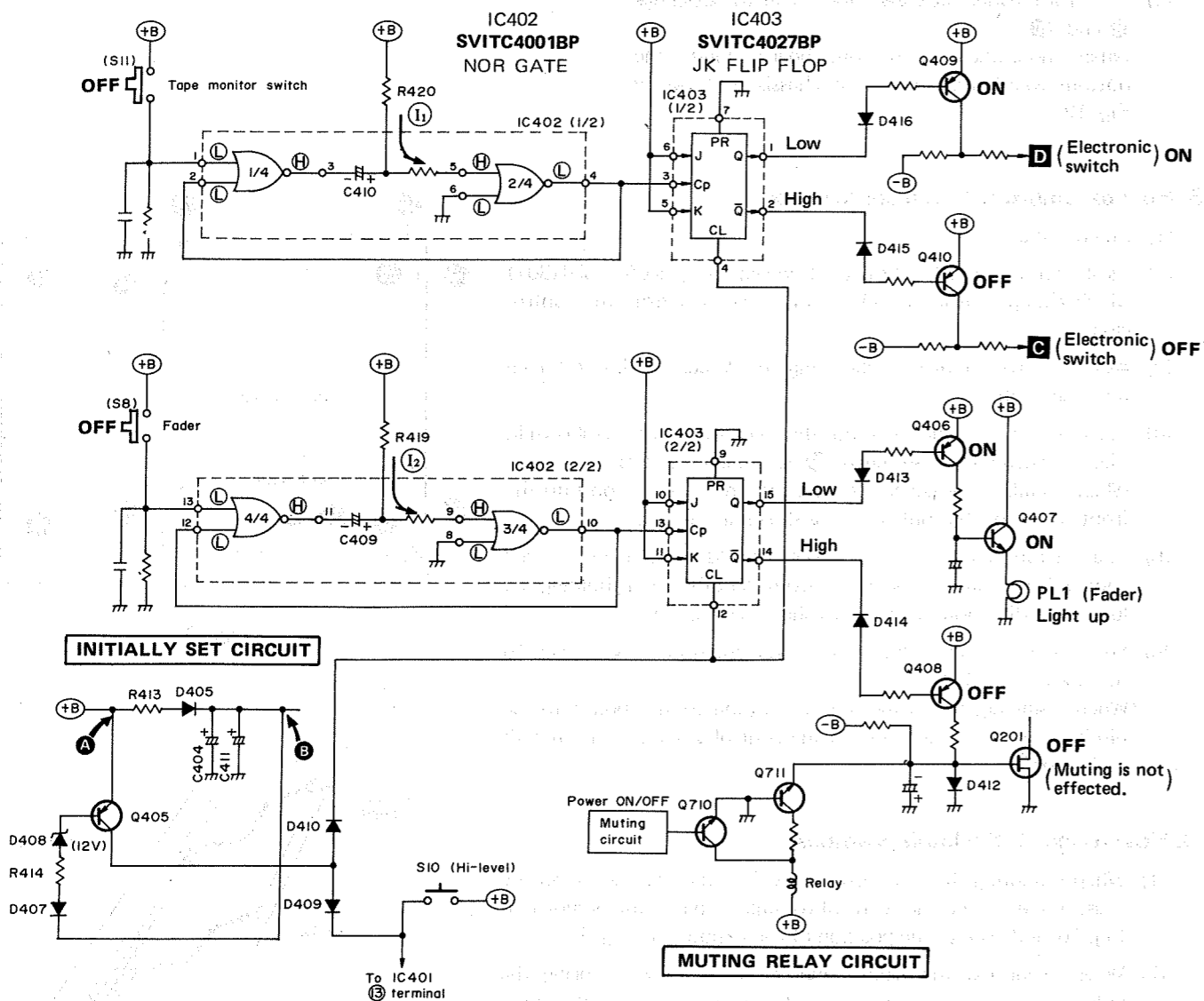


Fig. 4

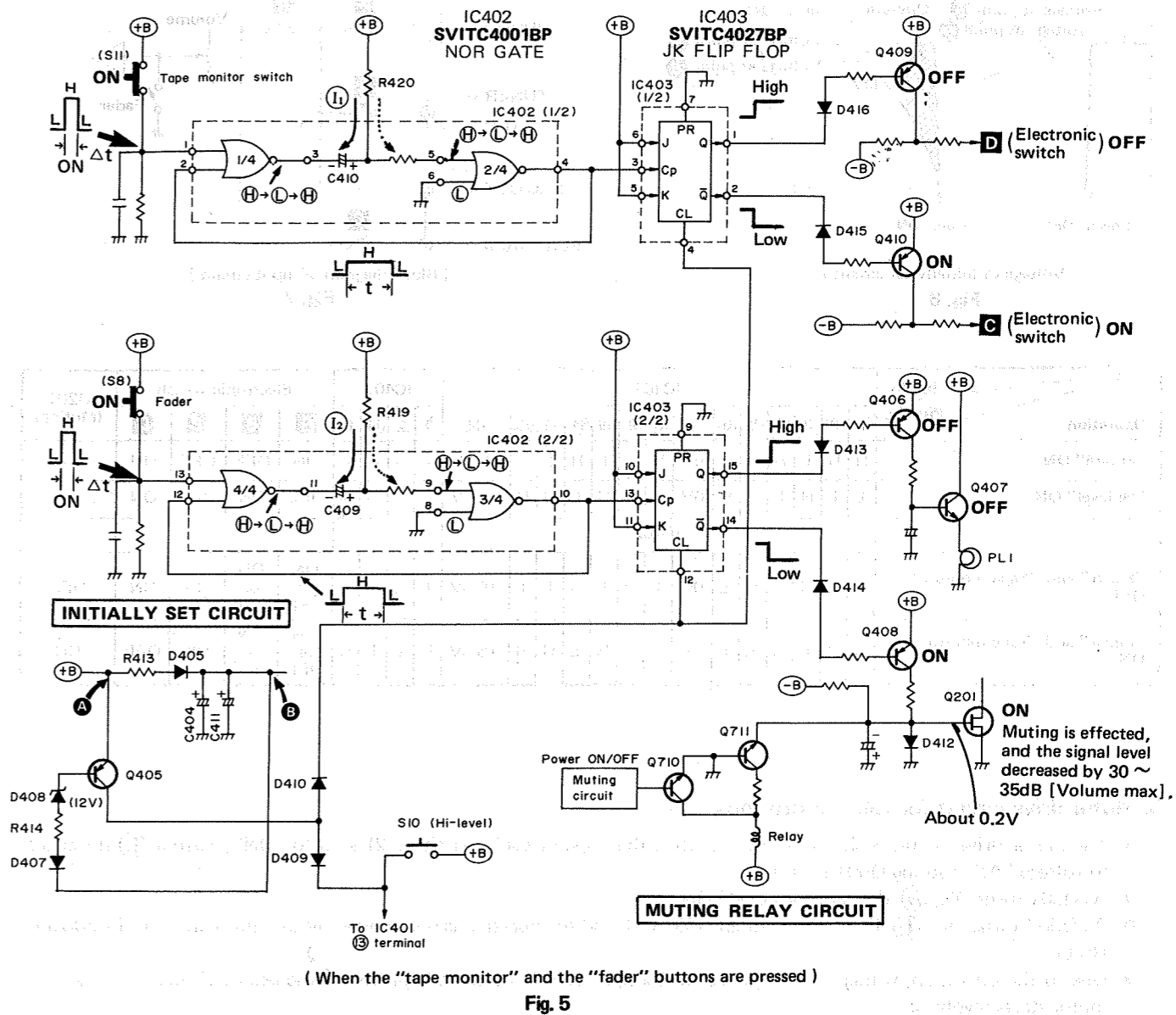
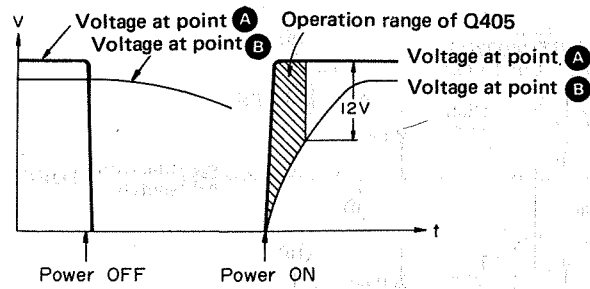


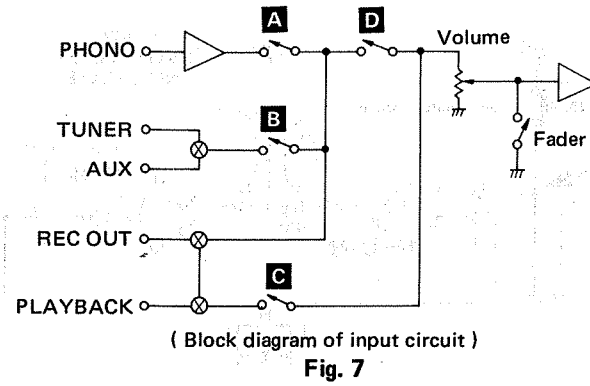
Fig. 5

4. Initially set circuit

- Since the unit uses an electronic switch to change over the input, it is necessary to store the conditions attained just before turning off the power switch. The backup circuit consisting of D405, C404 and C411, shown in Fig. 4, is provided for this purpose. This circuit is able to maintain the condition attained just before turning off the power switch for 3 ~ 5 days. In the case of unattended recording of the Hi-level input of tuner or aux terminal, the Hi-level button is pushed before turning off the power switch. But if back-up power is exhausted as more than a week has passed, then the Hi-level circuit does not function even with the power switch turned ON. In that case, the "initially set circuit" serves to make the Hi-level circuit to function.
- When the power switch turns ON, the voltage immediately rises at point **A** of the "initially set circuit", while it takes time for the rise of voltage at point **B**. During that time, Q405 turns ON, causing the collector potential to increase. The voltage is applied to the Hi-level switch S10, making the circuit the same as shown in Fig. 2. On the other hand, the voltage is also applied to the IC403 clear terminal of the flipflop. When the clear terminal changes to "high", the output becomes "low" regardless of other input, thus making the circuit as shown in Fig. 4.
- The base voltage of Q405 rises as C404 and C411 are charged. Q405 turns OFF when potential difference between points **A** and **B** becomes less than 12.V (Zener voltage of D408).



(Voltage of initially set circuit)
Fig. 6



(Block diagram of input circuit)
Fig. 7

Operation	IC No. Pin No.	IC401														IC403				Electronic switch				Q201 (Muting)
		①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	①	②	④	⑤	A	B	C	D	
"Phono" ON		H	H	L	H	L	L	0V	H	H	L	H	L	L	15.5V	-	-	-	-	ON	OFF	OFF	ON	-
"Hi-level" ON		L	L	H	L	H	H	0V	L	L	H	L	H	H	15.5V	-	-	-	-	OFF	ON	OFF	ON	-
IC402																								
"Fader" and "Tape monitor" OFF		L	L	H	L	H	L	0V	L	H	L	H	L	L	15.5V	L	H	H	L	ON or OFF	ON or OFF	OFF	ON	OFF
"Fader" and "Tape monitor" ON		H	H	L	H	L	L	0V	L	L	H	L	H	H	15.5V	H	L	L	H	ON or OFF	ON or OFF	ON	OFF	ON

5. Motor drive circuit for tone control box

- The motor drive circuit is shown in Fig. 8. When the "open/close" switch (S12) is set to "ON", current (I1) flows due to voltage "Δt", causing Q501 to turn ON.
- As Q501 turns ON, (I2) flows to turn Q502 ON.
- As Q502 turns ON, (I3) flows to maintain Q501 ON, and the duration is determined by the time constant of C503 and R505.
- Due to the operation, voltage "t" is applied to Q503, causing Q503 to be kept ON for the length of time "t". Then the motor starts revolving.
- Before start of motor operation, switch (S13) is OFF as in Fig. 6. When the motor starts operating, S13 is shifted to a state as shown in Fig. 10. Even when Q503 turns OFF, S13 is kept ON so that the motor continues operating.
- When the gear is rotated by half, S13 is shifted back to the original state as in Fig. 9 where the switch is OFF causing the motor to stop.

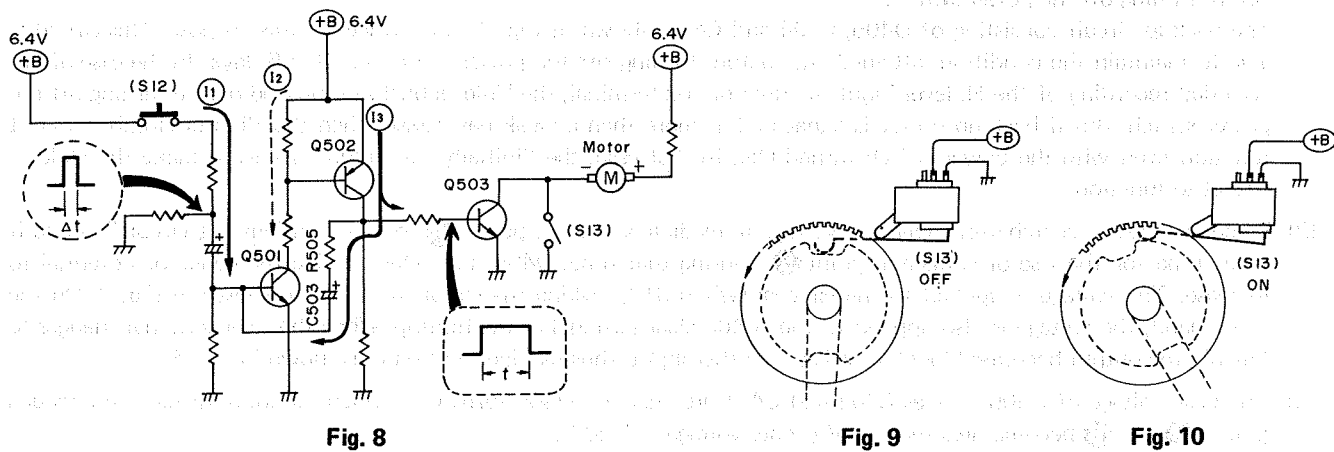


Fig. 8

Fig. 9

Fig. 10

DISASSEMBLY INSTRUCTIONS

1. How to remove the cabinet and front panel

- (Fig. 10)
- (1) Remove the cabinet setscrews ① ~ ④ to remove the cabinet.
 - (2) Remove the front panel setscrews ⑤ ~ ⑩ to remove the front panel.

* Products for Australia are provided with φ3 toothed lock washers for screws ⑧ and ⑩. Also, screw ③ is provided with φ4 toothed lock washer.

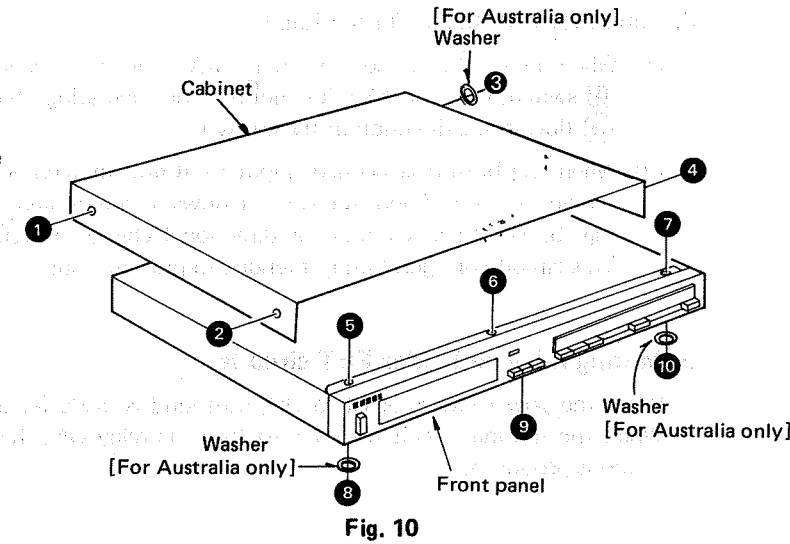


Fig. 10

2. How to remove the bottom board

- (Fig. 11)
- (1) Remove the bottom board setscrews ⑨ ~ ⑬ to remove the bottom board.
 - (2) The front panel setscrews also serve as setscrews ⑭ and ⑮.

*When mounting the bottom board, insert the bottom board front under the chassis as shown in Fig. 12.

3. How to remove the tone control box

- (1) Remove the cabinet.
- (2) As shown in Fig. 13, cut off the lead clasper (Part No. SHR301) which clamps the leads J11, J13 and J14 led from the control circuit.
- (3) As in Fig. 13, remove circlip ring and detach the link rod from the tone control box.
- (4) Turn over the set and draw out the tone control box as shown in Fig. 14. Then remove setscrew ⑯ to detach the cover.
- *When installing the cover, fit the cover front projection into the front groove of the control box as shown in Fig. 14.
- (5) The via tone indicator LED cover is glued to the front of tone control box. Pull out the P.C.B. from the LED cover, holding the lug, in the direction of the arrow shown in Fig. 15.
- (6) Push the lug of tone control box in the direction shown in Fig. 16 to remove the P.C.B.
- *When installing, match the pin of the tone control box with the pin hole of P.C.B. Also, match the control volume position with each knob position.

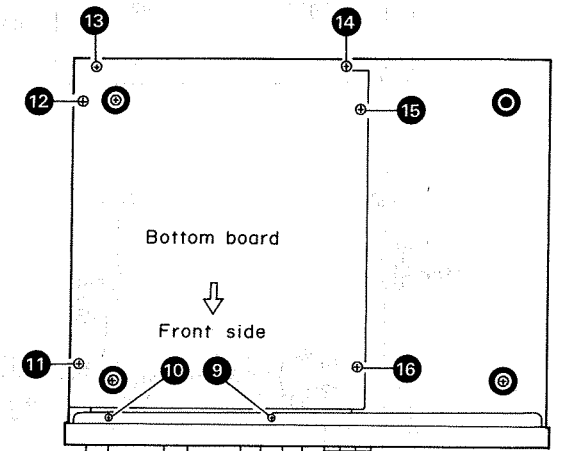


Fig. 11

4. How to match the knob positions

- (1) When mounting the tone control P.C.B. after its removal, set the bass, treble and balance control volume to the positions shown in Fig. 16, and also set the position of each knob as in Fig. 16.
- (2) When mounting the front panel after its removal, bring the volume control (VR201) position to the left or right side end as shown in Fig. 17, and also match the knob attached to the front panel with the volume position.

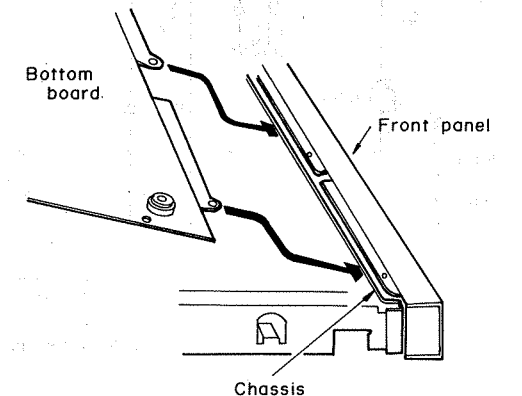


Fig. 12

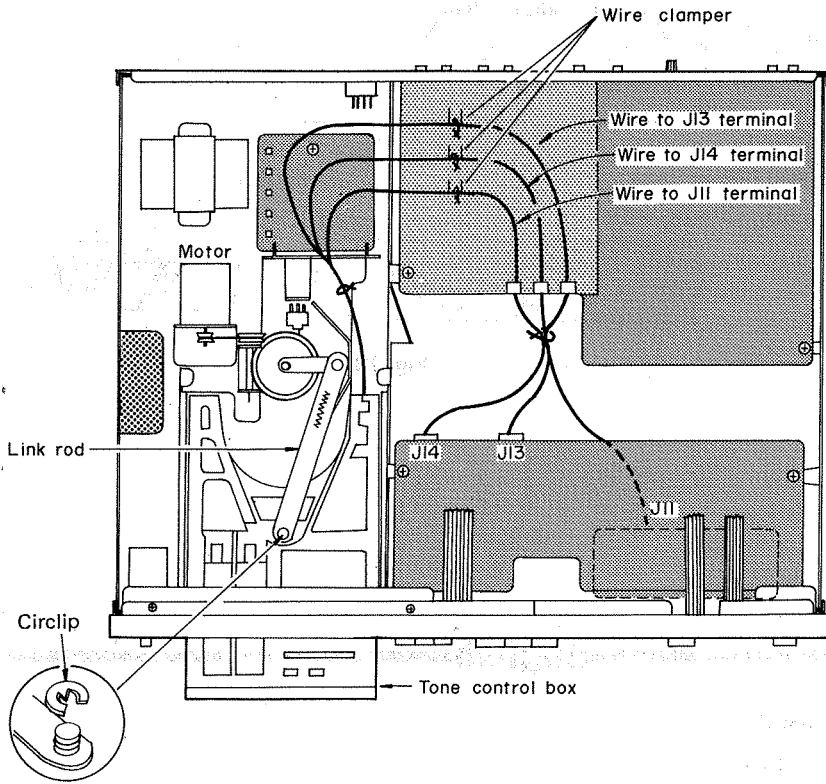


Fig. 13

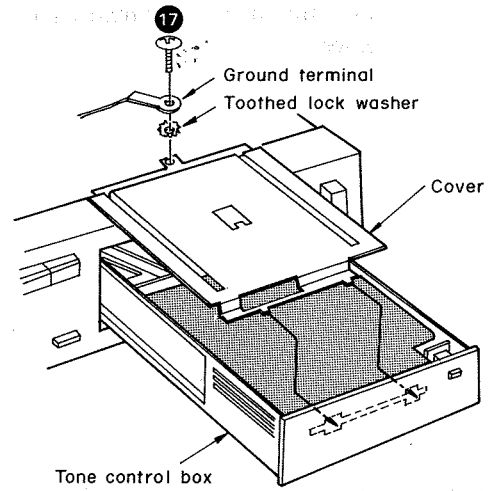


Fig. 14

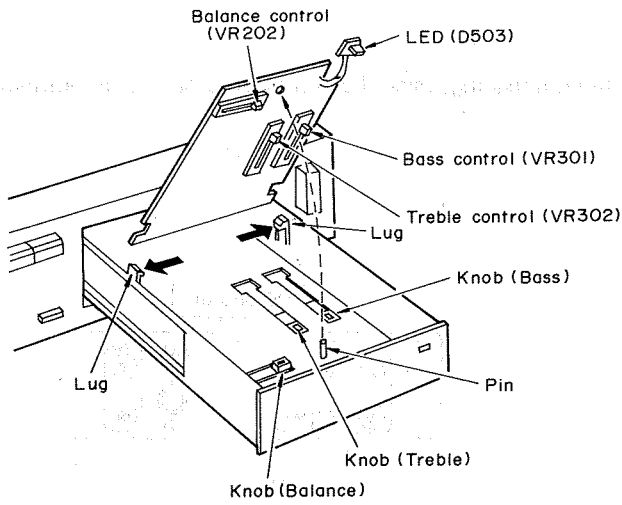


Fig. 16

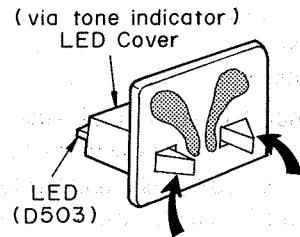


Fig. 15

5. How to remove the switch and button coupling rod

- (1) When removing the coupling rod for the purpose of switch replacement or logic circuit repair, pull the rod as shown in Fig. 17 with the switch depressed and the button most projected (maximum stroke).

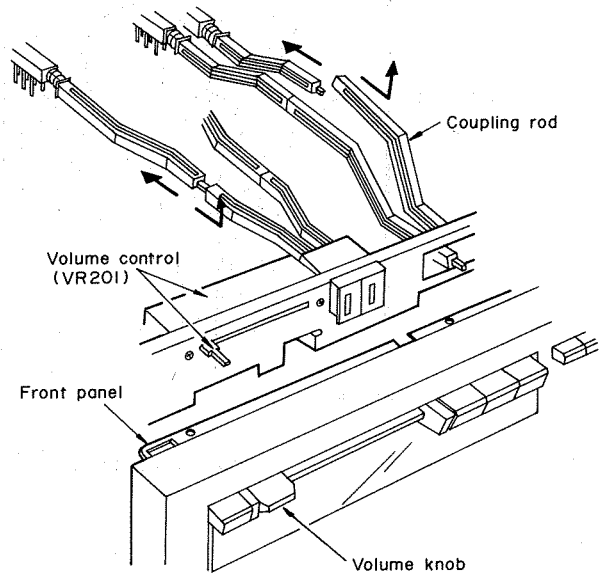


Fig. 17

6. Volume indicator film

- Connect the volume indicator film as shown in Fig. 18.
- When replacing the lamps, first remove the front panel, then remove the volume indicator film and the printed circuit board of lamps.

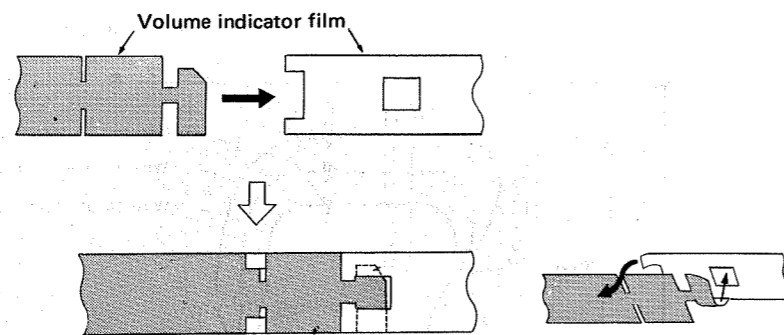


Fig. 18

EINSTELLUNG

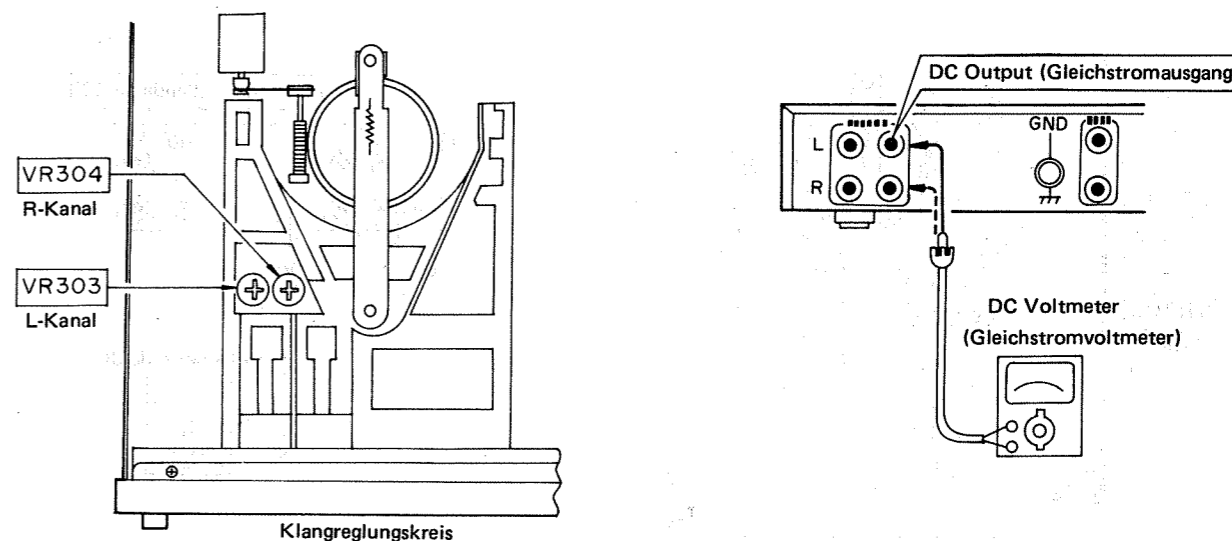
Deutsch

1. Reglerstellungen und zu verwendene Instrumente:

- * Betriebswähler (Operation) Gleichstrom (Straight DC)
- * Programmwähler Phono (MM)
- * Lautstärkeregl. (Volume) Minimalstellung
- * Überblendschalter (Fader) Ausstellung (off)
- * Gleichstromvoltmeter Meßbereich über 10mV

2. Gleichstrom-(DC)-Balanceeinstellung des Klangregelungskreises

- (1) Das Gleichstromvoltmeter an die "DC output"-Buchsen anschließen.
- (2) Die Drehregler VR303 (L-Kanal) und VR304 (R-Kanal) auf Maximalwerte auf dem 10 mV-Bereich des Gleichstromvoltmeters während ungefähr 30 Sekunden nach dem Zuleiten der Stromversorgung des Gerätes einstellen.



ADJUSTMENT

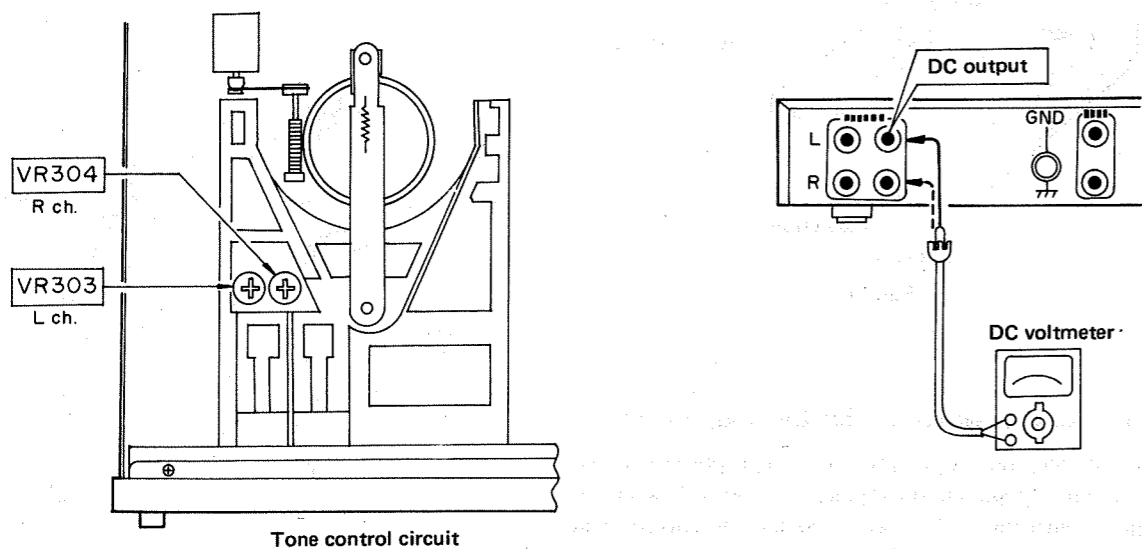
English

1. Setting of controls and instruments to be used.

- * Operation selector straight DC
- * Program selector phono (MM)
- * Volume control minimum
- * Fader switch off
- * DC voltmeter Capable to measure 10mV

2. DC balance adjustment of tone control circuit

- (1) Connect the DC voltmeter to "DC output" terminals.
- (2) Adjust VR303 (L ch.) and VR304 (R ch.) to obtain a minimum reading, using the 10mV range on the DC voltmeter in about 30 seconds after power supply ON.



MISES AU POINT

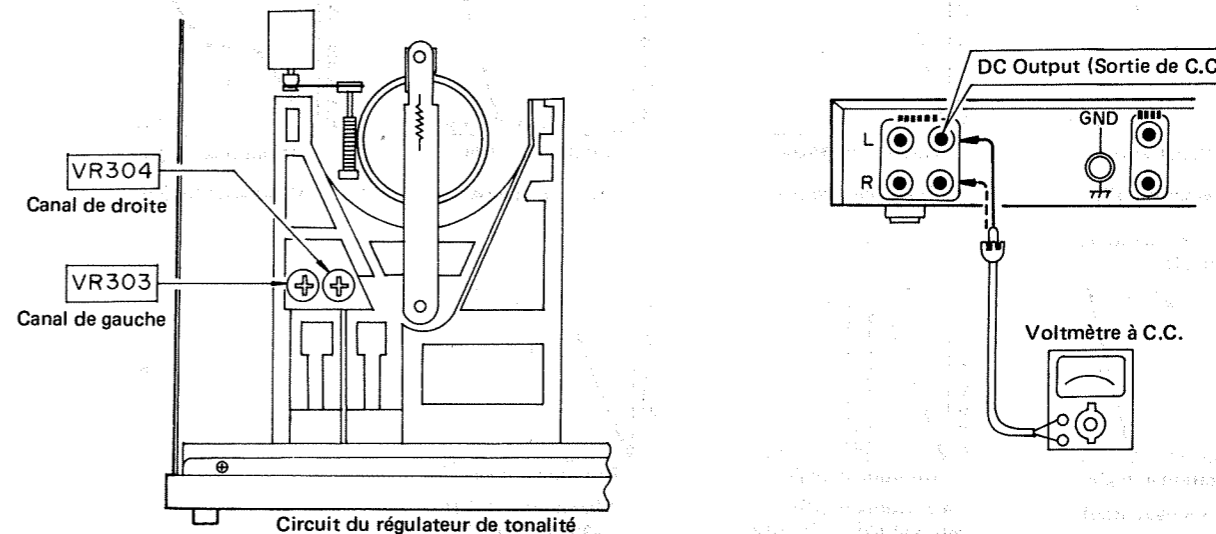
Français

1. Réglage des commandes et des appareils à utiliser.

- * Sélecteur d'opération (Operation) C.C. normal (Straight DC)
- * Sélecteur de programmes phono (MM)
- * Réglage du volume (Volume) minimum
- * Interrupteur d'évanouissement (Fader) hors circuit (off)
- * Voltmètre C.C. Capable de mesurer 10mV

2. Réglage de l'équilibre C.C. du circuit du régulateur de tonalité.

- (1) Brancher le voltmètre à C.C. aux bornes de "sortie C.C."
- (2) Régler VR303 (canal de gauche) et VR304 (canal de droite) pour obtenir une lecture minimale, en utilisant la plage de 10mV sur le voltmètre à C.C., durant à peu près 30 secondes après avoir mis en marche l'alimentation en courant.

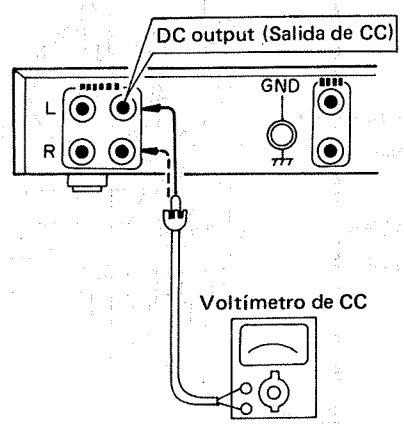
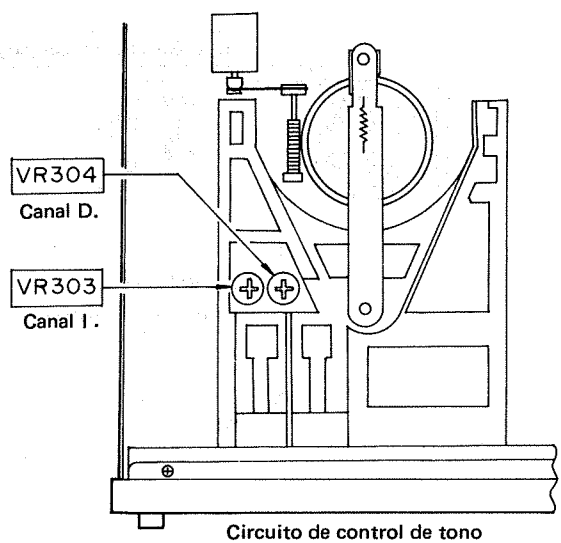


1. Puesta de controles e instrumentos a usarse

- * Selector de operación (Operation) CC recta (Straight DC)
- * Selector de programa Fono (Phono) (MM)
- * Control de volumen (Volume) Mínimo
- * Interruptor desvanecedor (Fader) off (desconectado)
- * Voltímetro de CC Capaz de medir 10mV

2. Ajuste de equilibrio de CC de circuito de control de tono

- (1) Conectar el voltímetro de CC a terminales de "salida de CC"
- (2) Ajustar VR303 (canal I.) y VR304 (canal D.) para obtener una lectura mínima, usando la gama 10mV del voltímetro de CC, durante unos 30 segundos después que la fuente de alimentación está en ON.

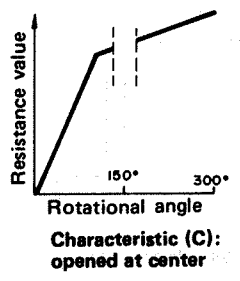
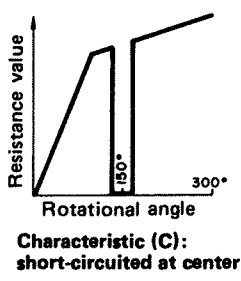
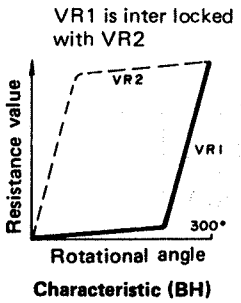
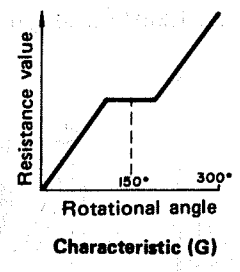
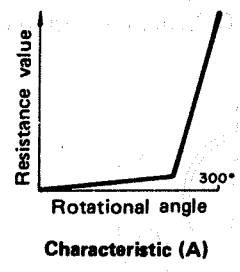
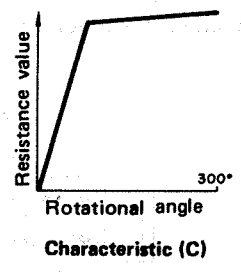
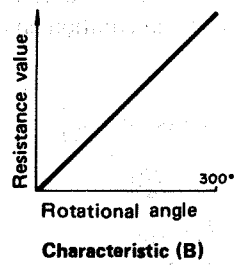


VARIABLE RESISTORS

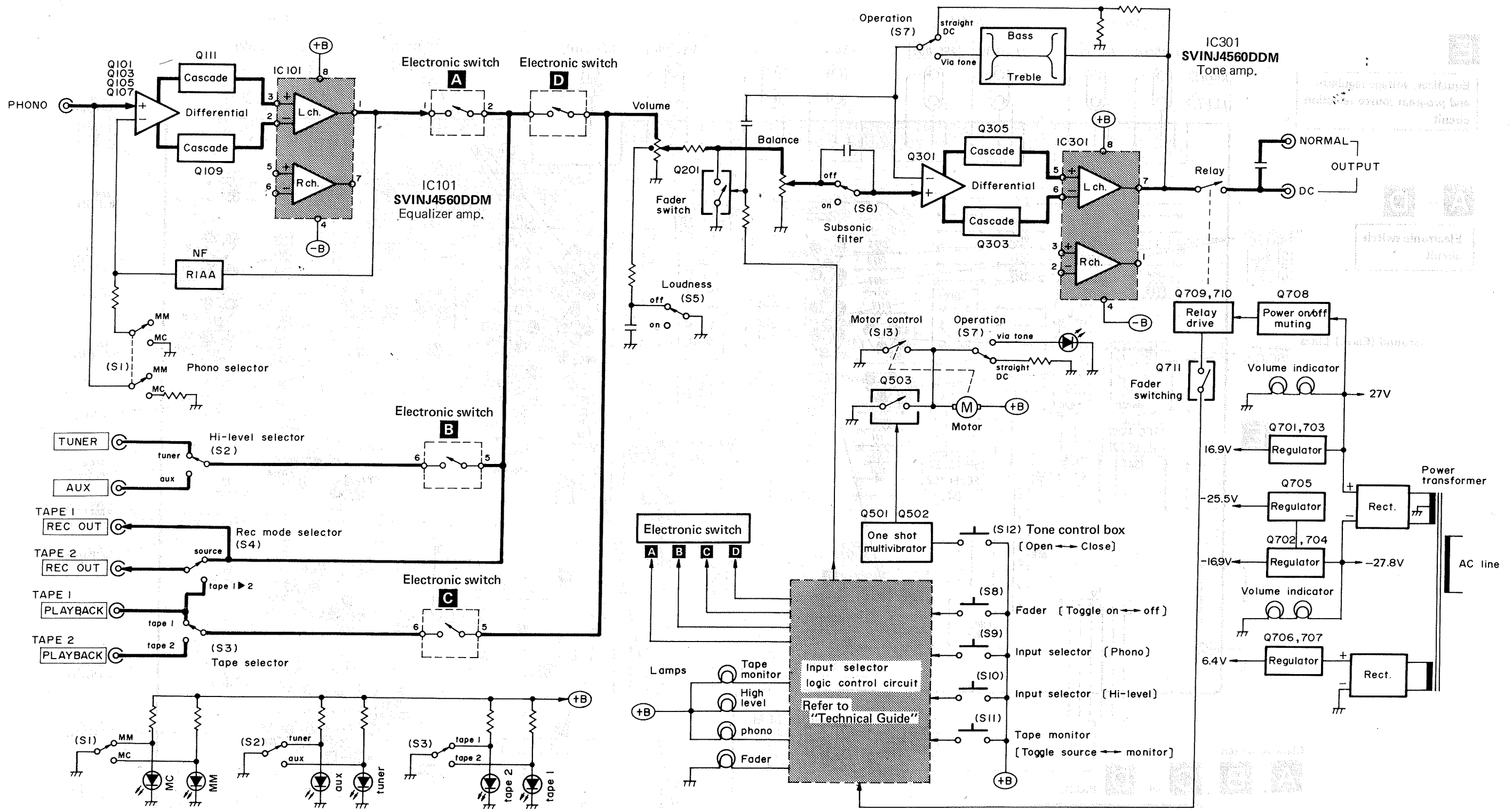
• Alteration of resistance values according to the rotational angles of variable resistors

Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; and (BH) and (G) are for the adjustment of sound balance between the right and left.

In the case of this unit, variable resistor with characteristic (C) which is short-circuited between its ends at center is used for bass adjustment. Also, variable resistor with characteristic (C) whose resistance is open at center is used for treble adjustment. And characteristic (BH) in which two variable resistors are interlocked with characteristics (C) and (A) combined is used for the adjustment of sound level balance.



BLOCK DIAGRAM



Notes:

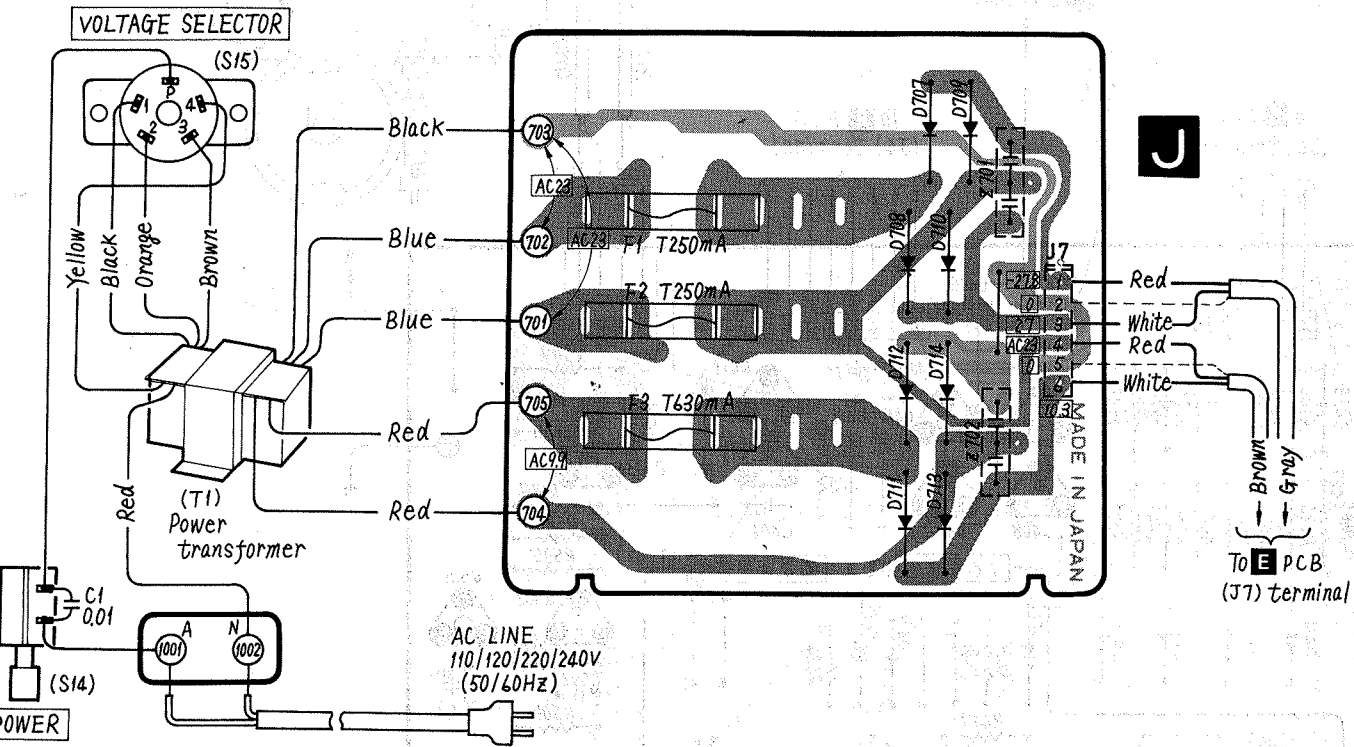
* When the input switch on the tape monitor switch is slightly pressed, voltage is applied to each of the electronic switches **A**, **B**, **C** and **D** (analog switch using FET) from the logic control circuit, thus forming a circuit in accordance with the instruction.

Electronic switch	A	B	C	D
Button				
"Phono" is pushed.	ON	OFF	OFF	ON
"Hi-level" is pushed.	OFF	ON	OFF	ON
"Tape monitor" is pushed.	ON or OFF	OFF or ON	ON	OFF

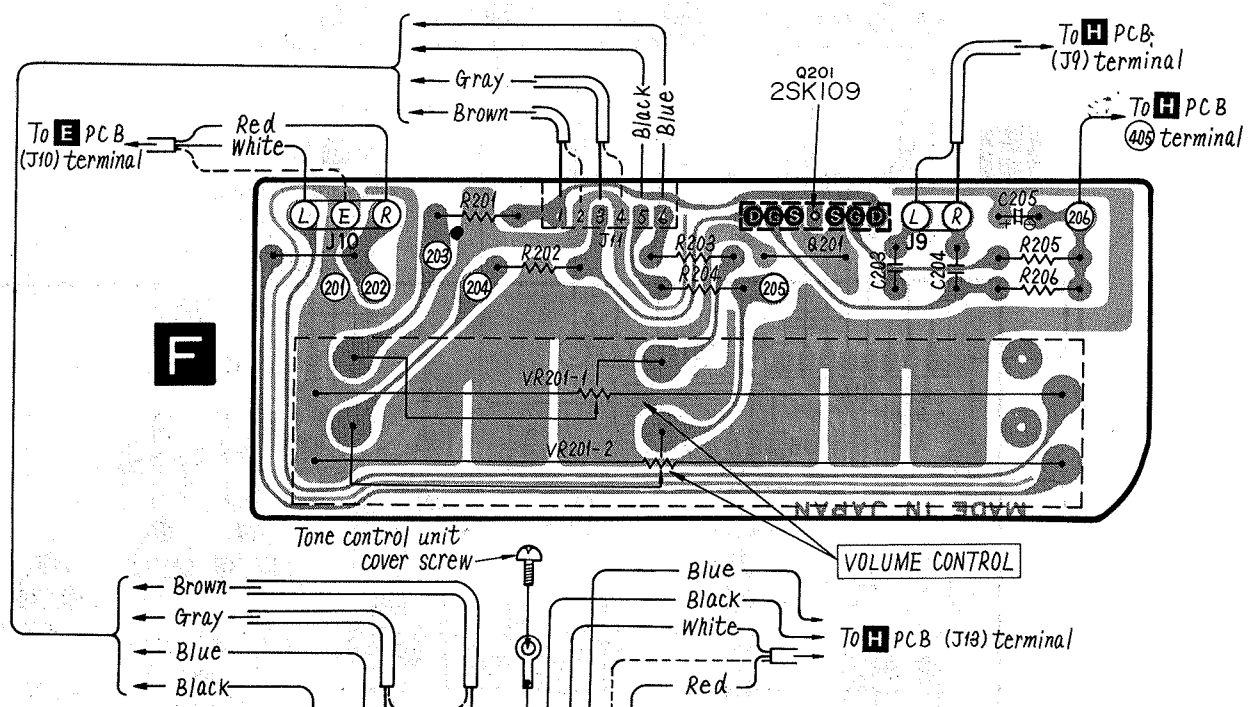
* Input selector switch buttons (S9, S1 and S10, S2) are of double-action mechanism. For example, when the "phono" button is slightly pushed, S9 turns ON and the electronic switch is operated by the logic control circuit. When the button is further pressed, S1 is switched from MM to MC (or from MC to MM).

* For the function of the logic control circuit, refer to the "Technical Guide" on page 6.

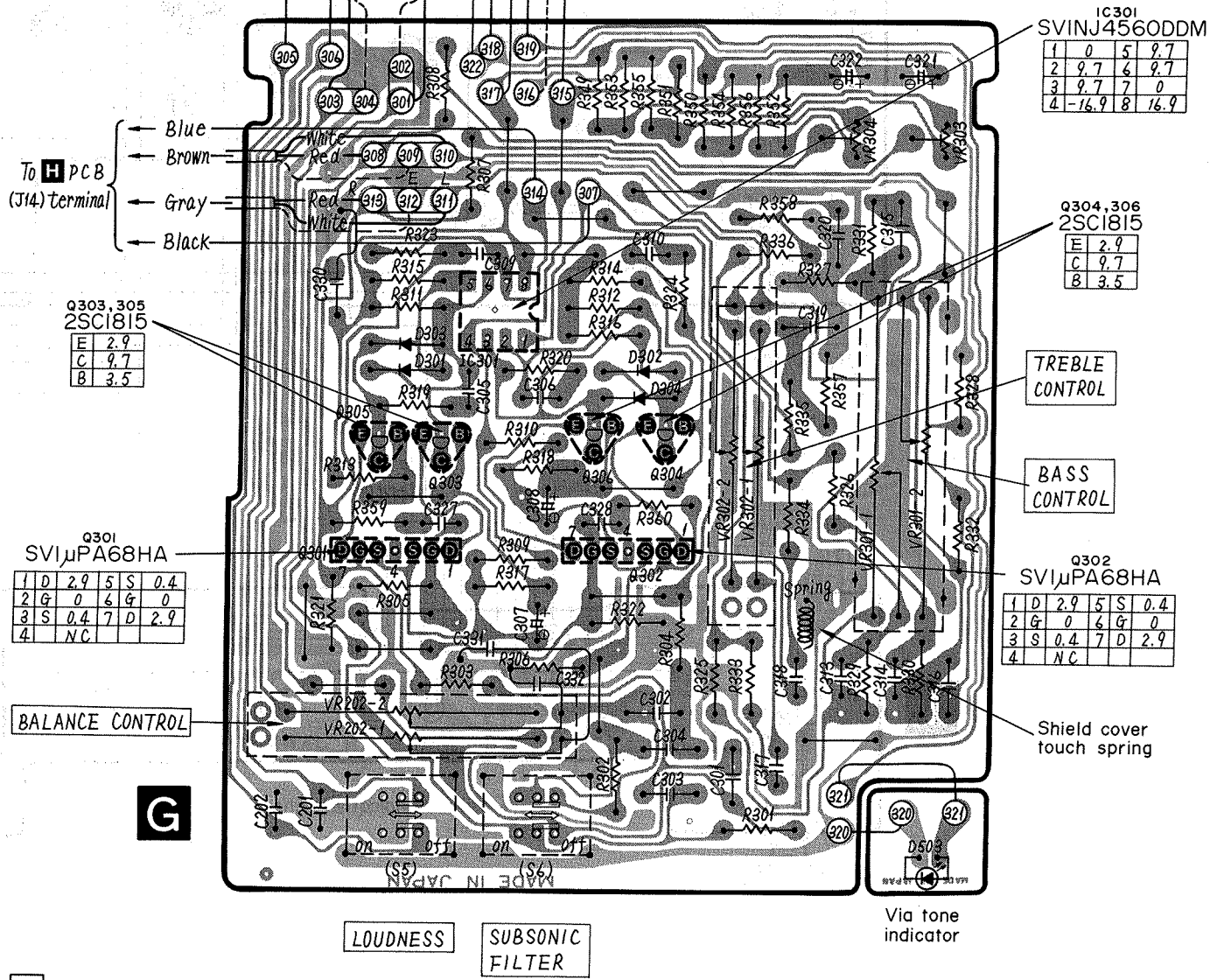
J Power source circuit



F Fader muting and volume control circuit



G Tone control circuit



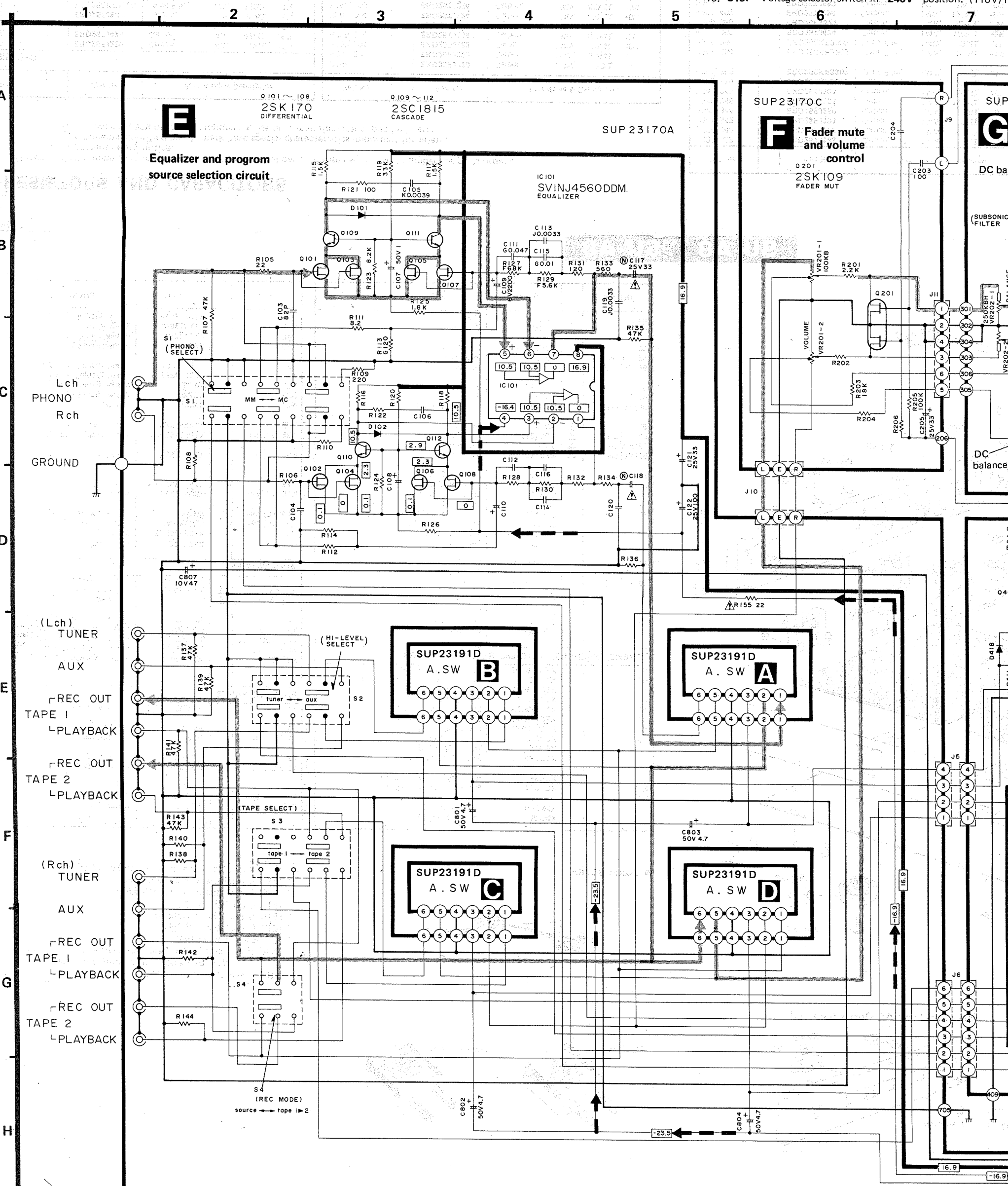
• Terminal guide of diodes, transistors and IC's

<p>2SA1015, 2SC1815</p> <p>E C B</p>	<p>2SK170, 2SK301</p> <p>Drain Gate Source</p>	<p>2SK246</p> <p>Source Gate Drain</p>	<p>2SK109</p> <p>D1 G1 S1 N C S2 G2 D2</p>
<p>2SC1983</p> <p>B C E</p>	<p>SVITC4011BP SVITC4001BP</p> <p>8 9 10 11 12 13 14 7 6 5 4 3 2 1</p>	<p>SVINJ4560DDM</p> <p>7 6 5 1 2 3 4</p>	<p>SVIμPA68HA</p> <p>D1 G1 S1 S2 G2 D2</p>
<p>2SB750, 2SD836</p> <p>B C E</p>	<p>SVITC4027BP</p> <p>16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1</p>	<p>LN424YP LN217RP</p> <p>A K</p>	<p>D1: Drain 1 G1: Gate 1 S1: Source 1</p> <p>D2: Drain 2 G2: Gate 2 S2: Source 2</p>

SCHEMATIC DIAGRAM MODEL SU-A8

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

- Notes:**
1. **S1:** Phono cartridge (MM/MC) selector switch in "MM" position.
 2. **S2:** Hi-level (tuner/aux) selector switch in "tuner" position.
 3. **S3:** Tape (tape 1/tape 2) selector switch in "tape 1" position.
 4. **S4:** Recording mode (source/tape dubbing 1 ▶ 2) selector switch in "off" position.
 5. **S5:** Loudness switch in "off" position.
 6. **S6:** Subsonic filter switch in "off" position.
 7. **S7:** Operation (straight DC/via tone) selector switch in "st" position.
 8. **S8:** Fader switch (toggle on/off).
 9. **S9:** Input selector "phono" switch.
 10. **S10:** Input selector "hi-level" switch.
 11. **S11:** Tape monitor switch. (toggle source/monitor).
 12. **S12:** Tone control box "open/close" switch.
 13. **S13:** Motor control switch in "off" position.
 14. **S14:** Power source switch in "on" position.
 15. **S15:** Voltage selector switch in "240V" position. (110V/1

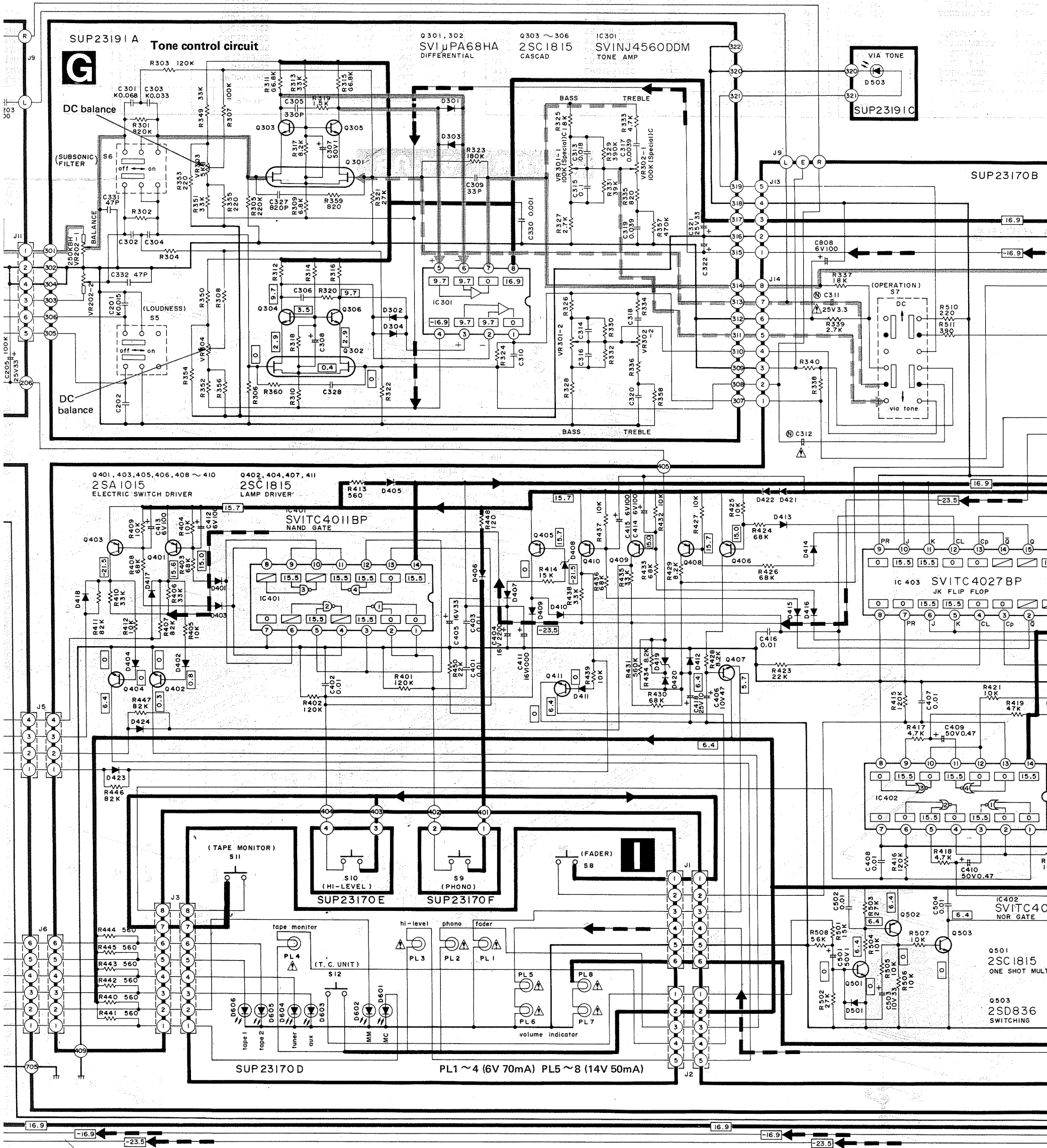


switch in "MM" position.
 in "tuner" position.
 in "tape 1" position.
 ing 1 ▶ 2) selector switch in "source" position.

16. Same circuit is used for both L (left) and R (right) channels. For the resistance and capacity of R channel (lower of schematic diagram), refer to L channel. For the voltage value, refer to R channel.
17. Indicated voltage value are the standard values for the DC electronic circuit tester 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.
18. The value in () is of voltage when electronic switch circuit is OFF.
19. The terminal voltage of IC shown by \square is H (+Vcc) or L (0V) depending upon the switch position selected. (Refer to Technical Guide).
20. The circuits and printed circuit board used for electronic switches **A**, **B**, **C** and **D** are identical to one another.
21. \rightarrow Phono signal lines of left channel.
22. \rightarrow Positive (+B) voltage lines.
23. \rightarrow Negative (-B) voltage lines.
24. Important safety notice:
 Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

e/monitor)
 itch.
 tion.
 on.
 position. (110V/120V/220V/240V)

7 8 9 10 11 12 13



taken as standard. There-
circuit tester.

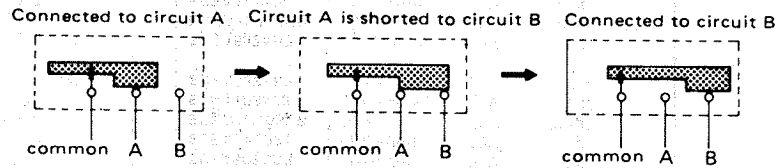
position selected. (Refer to
another.

ing any of these com-

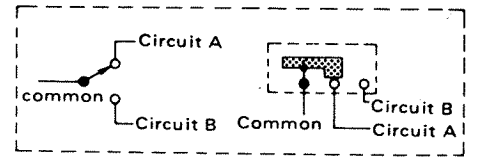
• Shorting Switch

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



12

13

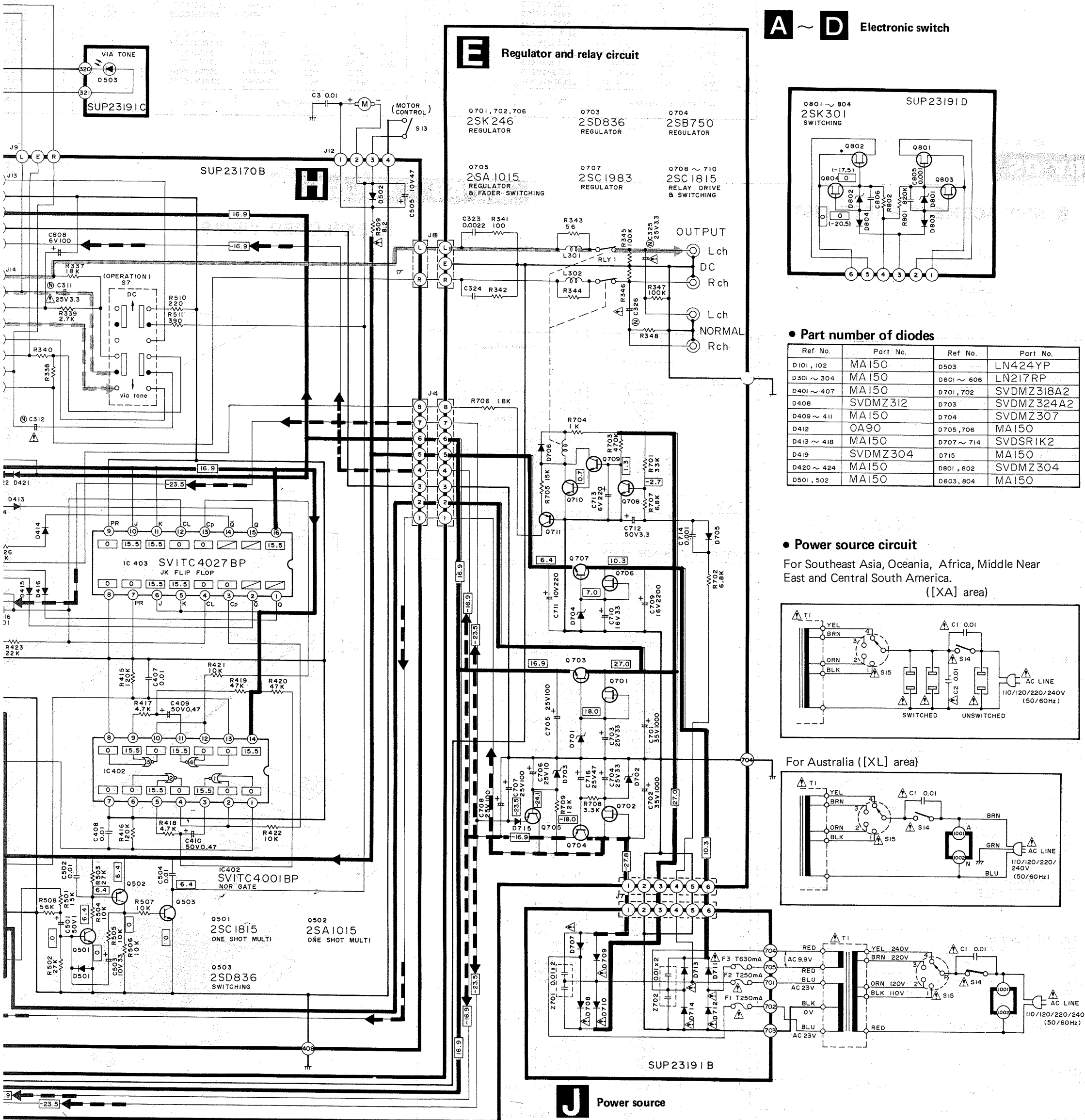
14

15

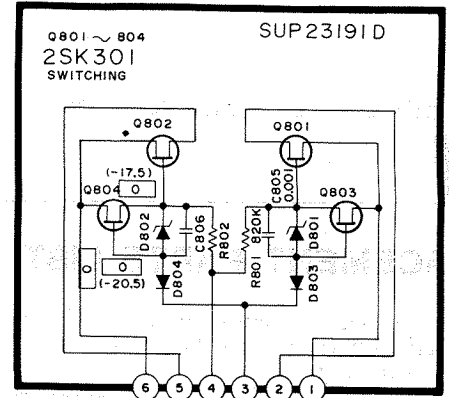
16

17

18



A ~ D Electronic switch

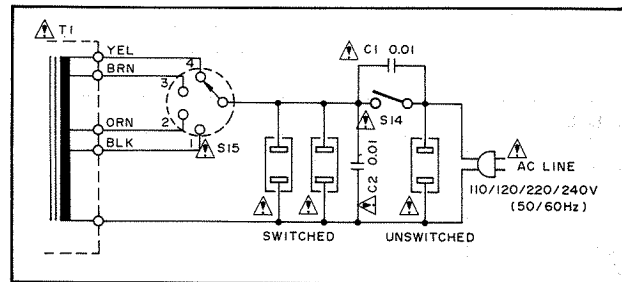


• Part number of diodes

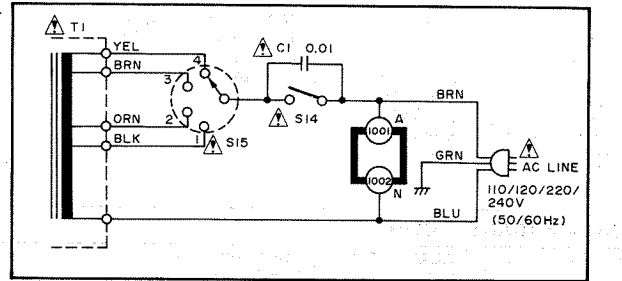
Ref. No.	Part No.	Ref. No.	Part No.
D101, 102	MA150	D503	LN424YP
D301 ~ 304	MA150	D601 ~ 606	LN217RP
D401 ~ 407	MA150	D701, 702	SVDMZ318A2
D408	SVDMZ312	D703	SVDMZ324A2
D409 ~ 411	MA150	D704	SVDMZ307
D412	0A90	D705, 706	MA150
D413 ~ 418	MA150	D707 ~ 714	SVDSRIK2
D419	SVDMZ304	D715	MA150
D420 ~ 424	MA150	D801, 802	SVDMZ304
D501, 502	MA150	D803, 804	MA150

• Power source circuit

For Southeast Asia, Oceania, Africa, Middle Near East and Central South America. ([XA] area)



For Australia ([XL] area)



Ref. No.	Part No.	Part Name & Description
C416	ECKD1H103ZF	Ceramic, 50V, 0.01 μ F, $\pm 8\%$
C418	ECEA1HS100	Electrolytic, 50V, 10 μ F, $\pm 10\%$
C501	ECEA5021	Ceramic, 50V, 1 μ F, $\pm 8\%$
C502	ECKD1H103ZF	Ceramic, 50V, 0.01 μ F, $\pm 8\%$
C503	ECEA1CS330	Electrolytic, 16V, 33 μ F, $\pm 10\%$
C504	ECKD1H103ZF	Ceramic, 50V, 1 μ F, $\pm 8\%$
C505	ECEA1A470	Ceramic, 10V, 0.01 μ F, $\pm 8\%$
C701, 702	ECEA1VS102	Electrolytic, 35V, 1000 μ F, $\pm 10\%$
C703, 704	ECEA1VS330	Electrolytic, 35V, 33 μ F, $\pm 10\%$
C705	ECEA1ES101	Electrolytic, 25V, 100 μ F, $\pm 10\%$
C706	ECEA1HS100	Electrolytic, 50V, 10 μ F, $\pm 10\%$
C707, 708	ECEA1ES101	Electrolytic, 25V, 100 μ F, $\pm 10\%$
C709	ECEA1CS222	Electrolytic, 16V, 220 μ F, $\pm 10\%$
C710	ECEA1CS330	Electrolytic, 16V, 33 μ F, $\pm 10\%$
C711	ECEA1AS221	Electrolytic, 10V, 220 μ F, $\pm 10\%$
C712	ECEA5023R3	Electrolytic, 50V, 3.3 μ F, $\pm 10\%$
C713	ECKD1H102KB	Ceramic, 50V, 0.001 μ F, $\pm 10\%$
C714	ECEA1ES470	Electrolytic, 25V, 47 μ F, $\pm 10\%$
C801, 802	ECEA5024R7	Electrolytic, 50V, 4.7 μ F, $\pm 10\%$
C803, 804	ECEA5024R7	Electrolytic, 50V, 4.7 μ F, $\pm 10\%$
C(805, 806)x4	ECKD1H102KB	Ceramic, 50V, 0.001 μ F, $\pm 10\%$
C807	ECEA1A470	Electrolytic, 10V, 47 μ F, $\pm 10\%$
C808	ECEA1AS101	Electrolytic, 10V, 100 μ F, $\pm 10\%$

Ref. No.	Part No.	Part Name & Description
204	ECCD1H101K	Ceramic, 50V, 100 μ F, $\pm 10\%$
202	ECEA1VS30K	Polyester, 125V, 33 μ F, $\pm 10\%$
204	ECEA1VS30K	Polyester, 35V, 33 μ F, $\pm 10\%$
302	ECEA1VS30K	Polyester, 125V, 0.068 μ F, $\pm 10\%$
304	ECCD1H331KB	Polyester, 125V, 0.033 μ F, $\pm 10\%$
308	ECEA50M1R	Electrolytic, 50V, 330 μ F, $\pm 10\%$
310	ECCD1H330K	Ceramic, 50V, 33 μ F, $\pm 10\%$
312	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3 μ F, $\pm 10\%$
314	ECCM1H183JZ	Polyester, 50V, 0.018 μ F, $\pm 5\%$
316	ECEA1104KN	Polyester, 125V, 0.1 μ F, $\pm 10\%$
318	ECCM1H222JZ	Polyester, 50V, 0.0039 μ F, $\pm 5\%$
320	ECEA1393KN	Polyester, 125V, 0.0039 μ F, $\pm 5\%$
322	ECEA1VS330	Electrolytic, 35V, 33 μ F, $\pm 10\%$
324	ECCM1H222JZ	Polyester, 50V, 0.0022 μ F, $\pm 5\%$
326	ECEA1EN3R3S	Non-Polar Electrolytic, 25V, 3.3 μ F, $\pm 10\%$
328	ECCD1H821KB	Ceramic, 50V, 820 μ F, $\pm 10\%$
332	ECCD1H102ZF	Ceramic, 50V, 0.001 μ F, $\pm 8\%$
332	ECCD1H470K	Ceramic, 50V, 47 μ F, $\pm 10\%$
402	ECCD1H103ZF	Ceramic, 50V, 0.01 μ F, $\pm 8\%$
402	ECCD1H103ZF	Ceramic, 50V, 0.01 μ F, $\pm 8\%$
408	ECEA1CS330	Electrolytic, 16V, 2200 μ F, $\pm 10\%$
410	ECEA1CS222	Electrolytic, 16V, 2200 μ F, $\pm 10\%$
413	ECEA1CS102	Electrolytic, 16V, 1000 μ F, $\pm 10\%$
415	ECEA1AS101	Electrolytic, 10V, 100 μ F, $\pm 10\%$

SU-A8

SU-A8 SU-A8

REPLACEMENT PARTS LIST

- Notes:**
- Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
 - Important safety notice:
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

- Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

EXPLODED VIEWS

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC101, 301 IC401 IC402 IC403	SVINJ4560DDM SVITC4011BP SVITC4001BP SVITC4027BP	IC, Equalizer, Tone Amplifier IC, NAND Gate IC, NOR Gate IC, JK Flip Flop
TRANSISTORS		
Q101~108 Q109~112 402, 404, 407 411, 501, 708 709, 710 Q201 Q301, 302 Q303~306 Q401, 403, 405 406, 408, 409 410, 502, 705, 711 Q503, 703 Q701, 702, 706 Q704 Q707 Q(801~804)x4	2SK170-GR 2SC1815-Y 2SK109-D SVIUPA68HA 2SC1815-Y 2SA1015-Y 2SD836-Q 2SK246-Y 2SB750-R 2SC1983 2SK301-S	Transistor, Differential Amp. [FET] Transistor, Cascade, Lamp & Relay Drive, One Shot Multi Transistor, Fader Muting [FET] Transistor, Differential Amp. [FET] Transistor, Cascad Transistor, Switching, One Shot Multi & Regulator Transistor, Switching & Regulator Transistor, Regulator [FET] Transistor, Regulator Transistor, Regulator Transistor, Switching [FET]
DIODES		
D101, 102, 301~304, 401~407, 409~411, 413~418, 420~424, 501, 502, 705, 706, 715 D408 D412 D419 D503 D601~606 D701, 702 D703 D704 D707~714 D(801, 802)x4 D(803, 804)x4	MA162A SVDZM312 20A90 SVDZM304 LN424YP LN217RP SVDZM318A2 SVDZM324A2 SVDZM307B Δ SVDSR1K2 SVDZM304B MA162A	Diode, Switching Diode, 12V Zener Diode Diode, 4V Zener Light Emitting Diode, Yellow Light Emitting Diode, Red Diode, 18V Zener Diode, 24V Zener Diode, 7V Zener Rectifier Diode, 4V Zener Diode
COILS and TRANSFORMER		
L301, 302 T1	Δ RLQX1013-D SLT5J159-W	Coil, Choke Transformer, Power Source
VARIABLE RESISTORS		
VR201 VR202 VR301 VR302 VR303, 304	EVBJG1C16B15 EVBK08C06252 EVBJF1C06530 EVBK07C06C15 EVMHIGA00B53	Volume Control, 100k Ω (B) Balance Control, 250k Ω (BH) Bass Control, 100k Ω (C) (center short) Treble Control, 100k Ω (C) (center open) DC Balance Adjustment, 5k Ω (B)
COMPONENT COMBINATIONS		
Z701, 702	SXRFS203ZSM	Component Combination, 0.01 μ F (x2)
RELAY		
RLY1	SSY9	Relay, Output Muting
LAMPS		
PL1~4 PL5~8	Δ XAMR95Q23 Δ XAMR85S15	Lamp, Input Select Indicator, 70mA (6V) Lamp, Volume Indicator, 50mA (14V)

Ref. No.	Part No.	Part Name & Description
SWITCHES		
S1 S2, 7 S3, 4 S5, 6 S8~12	SSH1015 SSH1017 SSH2025 SSS61 SSG9	Switch, Phono Selector (MM \leftrightarrow MC) Switch, Hi-Level Selector, Operation Switch, Tape Selector, Rec Mode Switch, Loudness, Subsonic Filter Switch, Fader, Input, Tape Monitor and Tone Control Switch, Motor Control (Micro Switch) Switch, Power Source
S13 S14 S15	SSE33 Δ ESB90259S Δ ESE3787	Switch, Voltage Adjust
FUSES		
F1, 2 F3	Δ XBA2C025TRO Δ XBA2C06TRO	Fuse, T250mA (250V) Fuse, T630mA (250V)
CABINET and CHASSIS PARTS		
1 2 3 4 5 6 7 8 8-1 9	SBD39-1 SYEUABKM-1 SMP313 SUS253 SHR5139-1 SKUUA8KM-1 SJT231 SGWUA8KE [SHG6063-1] SBC415	Button, Bass, Treble Control Panel Ass'y Holder, LED Spring Spacer, Switch (S5.6) Bottom Cover Terminal Front Panel Ass'y Spacer, Front Panel Ass'y Button, Open/Close
10 11 12 13 14 15 16 17 18 19	SUS207 SBC417-1 SUS209 SBD43 SHR5149 SGXUABKE SMX537 SMX265 SBC337 SBC413	Spring, Button Button, Tape and Fader Switch Spring, Button Knob, Volume Control Spacer, Knob Front Sub Panel Ass'y Shield Cover Spacer, Shield Cover Button, Power Switch Button, Operation, Rec Mode and Tape Selector
20 21 22 23 24 25 26 27 28 29	SHS3149-1 SMP315 SBC419-1 SHP9361 SHR9565-1 SDU91 SUM31 SMZ303 SHG6209 SHG6207	Sheet Holder, LED Button, Hi-Level and Phono Selector Switch Spacer, Lamp Slider, Film Film, Volume Control Bracket, Film Reflector Plate Spacer Spacer, Button
30 31 32 33 34 35[XL] only 36 37 38 39	SHR9561-1 SUS245 SHR9563-1 SKC710B SUA2810-1 RJT202B SUB77 RDS4090A SUB79 SDG9003	Slider Spring, Slider Case, Slider Cabinet Cover Bottom Cover Terminal Link Rod Spring, Operation Lever Bracket, Operation Lever Gear, Operation
40 41 42 43 44 45[EK, XL] only 46 47 48 49	SFUMCUA8KM SFUM172-52 SXE971-2 SDR27 SHR9567 SUV473 SUB69 SUB71 SUB73 SMX519	Cam Ass'y Rubber, Cam Ass'y Bracket, Bottom Plate Roller Slider Cover, Voltage Adjust Switch Coupling Rod Coupling Rod Coupling Rod Spacer, Micro Switch
50 51 52	SHG6183 SMN1797 SFGBC10-01	Rubber Spacer, Motor Bracket, Motor Holder Belt

