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Service Manual



Stereo Integrated DC Amplifier SU-V8

[D], [DG], [EB], [XE], [XSW],
[XGH], [XGF], [XAL], [XA]

SU-V8(K)

[D], [DG], [EB], [XE],
[XSW], [XGH], [XAL], [XA]

* The cabinet, front panel and knob are available in black color and silver types.
The black type model is provided with (K) in the Service Manual.

- * [D] and [DG] 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.
- * [XSW] is available in Switzerland.
- * [XGH] is available in Holland.
- * [XGF] is available in France.
- * [XAL] is available in Australia.
- * [XA] is available in Asia, Latin America, Middle East and Africa.

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TECHNICAL SPECIFICATIONS (DIN 45 500)

Specifications are subject to change without notice for further improvement.

AMPLIFIER SECTION

20 Hz~20 kHz continuous power output both channels driven	2 × 140W (4Ω) 2 × 105W (8Ω)	rated power at 1 kHz	30.008% (4Ω) 0.005% (8Ω)
40 Hz~16 kHz continuous power output both channels driven	2 × 140W (4Ω) 2 × 105W (8Ω)	half power at 20 Hz~20 kHz	0.004% (8Ω)
1 kHz continuous power output both channels driven	2 × 150W (4Ω) 2 × 115W (8Ω)	half power at 1 kHz	0.002% (8Ω)
Total harmonic distortion		-26 dB power at 1 kHz	0.05% (4Ω)
rated power at 20 Hz~20 kHz	0.008% (4Ω) 0.005% (8Ω)	50 mW power at 1 kHz	0.1% (4Ω)
rated power at 40 Hz~16 kHz	0.008% (4Ω) 0.005% (8Ω)	Intermodulation distortion	
		rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.01%
		rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.007%
		Power bandwidth	
		both channels driven, -3 dB	
		(THD 0.03%)	5 Hz~70 kHz (4Ω)
		(THD 0.02%)	5 Hz~70 kHz (8Ω)
		Residual hum and noise (straight DC)	0.4 mV
		Damping factor	30 (4Ω), 60 (8Ω)

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

ADJUSTING INSTRUCTIONS

ENGLISH

● Setting of controls and instruments to be used

- 1. Operation switchstraight DC
- 2. Speaker switchmain
- 3. Sound volume.0 (minimum)
- 4. DC voltmeter (capable to measure 5mV)

No.	Adjustments	DC voltmeter Connections	Adjusting Point	Adjustment Procedure
1	Voltage regulator	Between TP402 and ground	VR401	* Turn voltage regulator semi-fixed resistor VR301 to minimum. (counter-clockwise direction) * Adjust VR401 to 17.5V
2	DC Balance	L channel Between R651 (A) and ground	VR301	* Adjust VR301 to obtain a minimum reading, using the 30mV range on the DC voltmeter (within ± 10mV) * Cut off the jumper wire (J301) if adjustment is not possible.
3		R channel Between R652 (A) and ground	VR302	* Adjust VR302 to obtain a minimum reading, using the 30mV range on the DC voltmeter * Cut off the jumper wire (J302) if adjustment is not possible.
4	Clamp Voltage	L channel Between TP601 and TP603 (minus probe) R channel Between TP602 and TP604 (minus probe)	VR603 (L channel) VR604 (R channel)	* Turn Icq semi-fixed resistors VR601, 602 to minimum. (counter-clockwise direction) * Adjust VR603 (L ch) and VR604 (R ch) to approx. 1mV after ten minutes warm-up time.
5	Icq (Adjustment using a DC voltmeter)	L channel Between TP601 and TP603 (minus probe) R channel between TP602 and TP604 (minus probe)	VR601 (L channel) VR602 (R channel)	* Adjust VR601 (L ch) and VR602 (R ch) to approx. 40mV after ten minutes warm-up time.

● ICQ can be adjusted with oscilloscope and the distortion analyser.

Instruments to be used

- 1. Oscillator (20kHz sine wave)
- 2. Distortion analyser
- 3. Oscilloscope

1st Feed 20kHz sine wave into the TUNER or AUX terminals.

- 2nd Volume control to maximum of this unit.
- 3rd Connect the distortion analyser to the speaker terminals and connect the output from the distortion analyser to the vertical input of the oscilloscope.
- 4th Turn the oscillator attenuator so that the output at the speaker terminal reaches 20V.
- 5th Adjust the ICQ semi-fixed resistors VR601 (left channel), VR602 (right channel) for minimum distortion on the oscilloscope.

EINSTELLUNGSANWEISUNGEN

DEUTSCH

● Einstellung der zu benutzenden Regler und Instrumente

- 1. Betriebsschalter.Gleichstrom (direkt)
- 2. Lautsprecherschalter . . .Hauptlautsprecher ("main")
- 3. Lautstärke "0" (Minimalstellung)
- 4. Gleichstromvoltmeter. . . 5mV Meßbereich erforderlich.

Nr	Einstellungen	Gleichstromvoltmeterverbindungen	Einstellungspunkte	Einstellungsvorgang
1	Spannungsregler	Zwischen TP402 und Masse.	VR401	* Die spannungsregler halbfesteingestellten Widerstände VR301 auf Minimalstellung drehen. (Entgegen dem Uhrzeigersinn) * VR401 auf 17.5V abstimmen.
2	Gleichstrombalance	L-Kanal. Zwischen R651 (A) und Masse.	VR301	* Durch Benutzung des 30mV-Bereiches (innerhalb von ±10mV) des Gleichstromvoltmeters, den regelbaren Widerstand VR301 auf minimalen Wert einstellen. * Wenn eine Einstellung nicht möglich ist, die Schaltader (J301) abtrennen.
3		R-Kanal. Zwischen R652 (A) und Masse.	VR302	* Durch Benutzung des 30mV-Bereiches (innerhalb von ±10mV) des Gleichstromvoltmeters, den regelbaren Widerstand VR302 auf minimalen Wert einstellen. * Wenn eine Einstellung nicht möglich ist, die Schaltader (J302) abtrennen.

4	Klemmspannung	L-Kanal. Zwischen TP601 und TP603 (Minustest) R-Kanal. Zwischen TP602 und TP604 (Minustest)	VR603 (L-Kanal) VR604 (R-Kanal)	* Die Ica halbfesteingestellten Widerstände VR601 und VR602 auf Minimalstellung drehen. (Entgegen dem Uhrzeigersinn) * VR603 (L-Kanal) und VR604 (R-Kanal) auf ungefähr 1mV, nach 10 Minuten Anwärmezeit, einstellen.
5	Ica (Einstellungen mit einem Gleichstromvoltmeter)	L-Kanal. Zwischen TP601 und TP603 (Minustest) R-Kanal. Zwischen TP602 und TP604 (Minustest)	VR601 (L-Kanal) VR602 (R-Kanal)	* VR601 (L-Kanal) und VR602 (R-Kanal) auf ungefähr 40mV, nach 10 Minuten Anwärmezeit, einstellen.

• Ica Kann mit einem Oszilloskop und dem Verzerrungsanalyser eingestellt werden.

Zu benutzende Instrumente

1. Schwingungserreger (20kHz sinus)
2. Verzerrungsanalyser
3. Oszilloskop

Erster Schritt: Die 20kHz Sinuswelle in die TUNER-oder AUX-Buchsen eingeben.

Zweiter Schritt: Den Lautstärkereglers dieses Gerätes auf Maximalstellung bringen.

Dritter Schritt: Den Verzerrungsanalyser mit den Lautsprecherklemmen verbinden, und den Ausgang des Verzerrungsanalysers mit dem Vertikaleingang des Oszilloskops verbinden.

Vierter Schritt: Den Eichungsregler des Oszilloskops auf eine Weise regeln, daß der Ausgang der Lautsprecherklemmen auf 20 Volt kommt.

Fünfter Schritt: Den Ica halbeinstellbaren Widerstand VR601 (L-Kanal) und VR602 (R-Kanal), auf minimale Verzerrungsanzeige dem Oszilloskop einstellen.

INSTRUCTIONS DE REGLAGE — FRANÇAIS

• Réglage des commandes et instruments à utiliser

1. Commutateur de marche/arrêt CC direct
2. Commutateur du haut-parleur Principal
3. Volume du son 0 (minimum)
4. Voltmètre CC (pouvant mesurer 5mV)

No	Réglages	Connexions du voltmètre CC	Point de réglage	Procédé de réglage
1	Régulateur de potential	Entre TP402 et la masse	VR401	* Tourner les résistances VR301 semifixes regulateur de potentiel sur le minimum. (à gauche) * Régler les VR401 sur 17.5V.
2	Equilibre CC	Canal gauche Entre R651 (A) et la masse	VR301	* Régler VR301 pour obtenir une lecture minimale, à l'aide de la gamme de 30mV sur le voltmètre CC (avec ±10mV). * Couper le fil volant (J301) si le réglage est impossible.
3		Canal droite Entre R652 (A) et la masse	VR302	* Régler VR302 pour obtenir une lecture minimale, à l'aide de la gamme de 30mV sur le voltmètre CC (avec ±10mV) * Couper le fil volant (J302) si le réglage est impossible.
4	Tension de blocage	Canal G. Entre TP601 et TP603 (sonde au moins) Canal D. Entre TP602 et TP604 (sonde au moins)	VR603 (Canal G) VR604 (Canal D)	* Tourner les résistances VR601, VR602 semifixes Ica sur le minimum. (à gauche) * Régler VR603 (canal gauche) et VR604 (canal droit) sur env. 1mV après 10 minutes de temps de chauffage.
5	Ica (réglage à l'aide d'un voltmètre CC)	Canal G. Entre TP601 et TP603 (sonde au moins) Canal D. Entre TP602 et TP604 (sonde au moins).	VR601 (Canal G) VR602 (Canal D)	* Régler les VR601 (canal gauche) et VR602 (canal droit) sur env. 40mV après 10mn. de préchauffage.

● Icq peut être réglé à l'aide d'un oscilloscope et un analyseur de distorsion.

Instruments à utiliser

1. Oscillateur (onde sinusoïdale de 20kHz)

2. Analyseur de distorsion

3. Oscilloscope

1. Alimenter une onde sinusoïdale de 20kHz aux bornes TUNER et AUX.

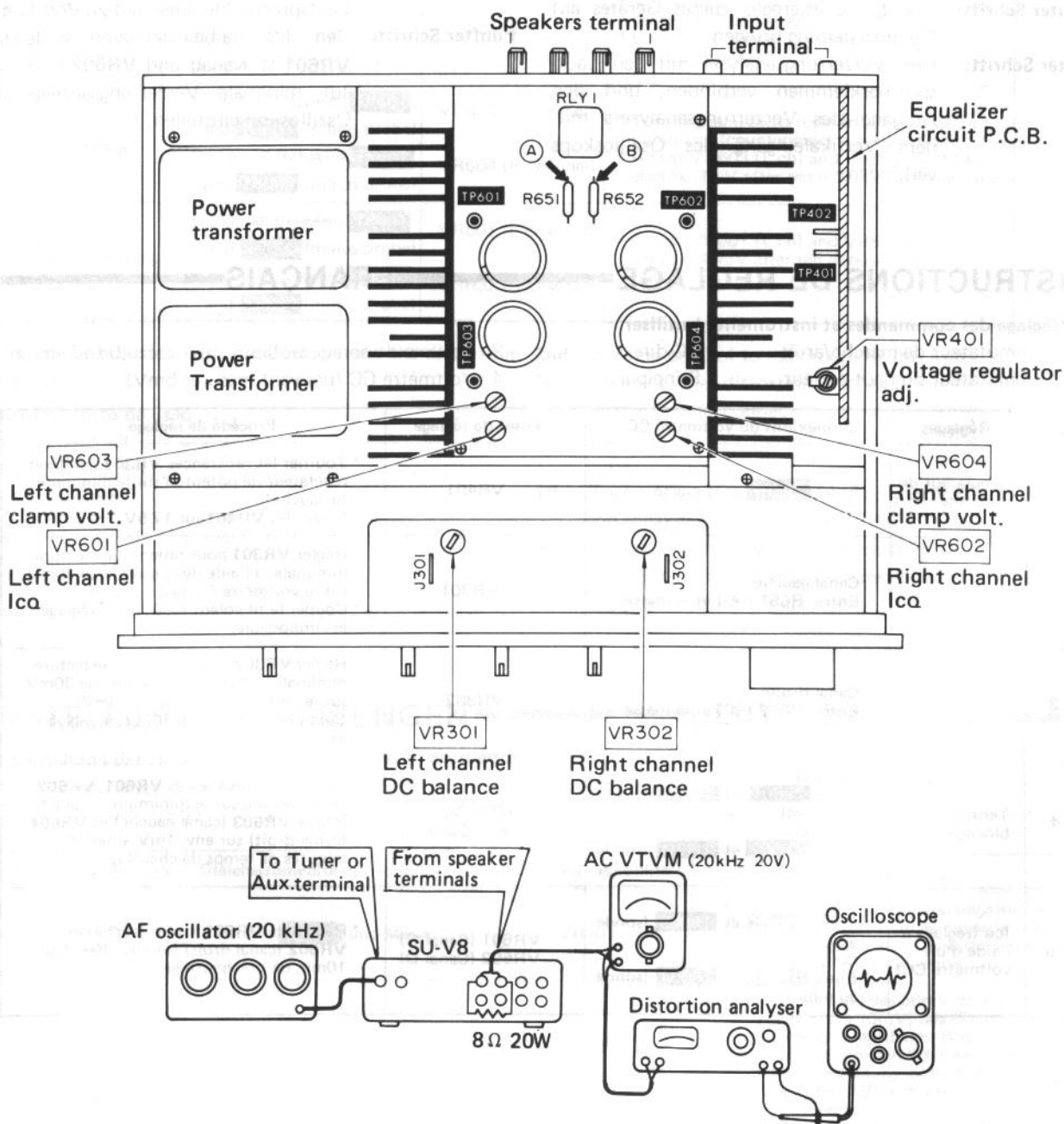
2. Placer la commande de volume, sur le maximum de cet appareil.

3. Brancher l'analyseur de distorsion aux bornes du haut-parleur et brancher la sortie de l'analyseur de distorsion à l'entrée verticale de l'oscilloscope.

4. Tourner l'atténuateur de l'oscillateur de telle sorte que la sortie à la borne du haut-parleur, atteigne 20V.

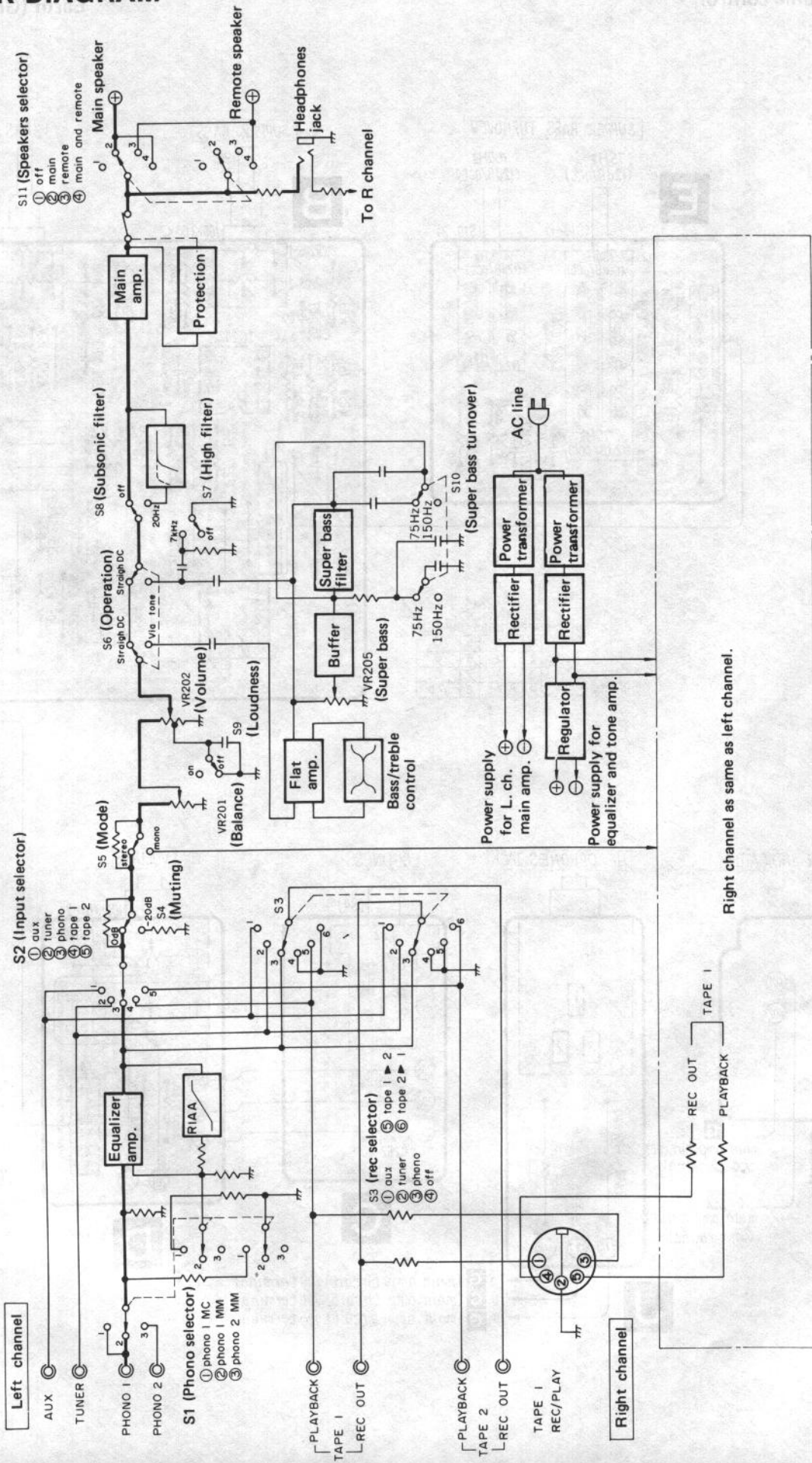
5. Régler les résistances VR601 (canal gauche) et VR602 (canal droit) semi-fixes Icq sur la distorsion minimale de l'oscilloscope.

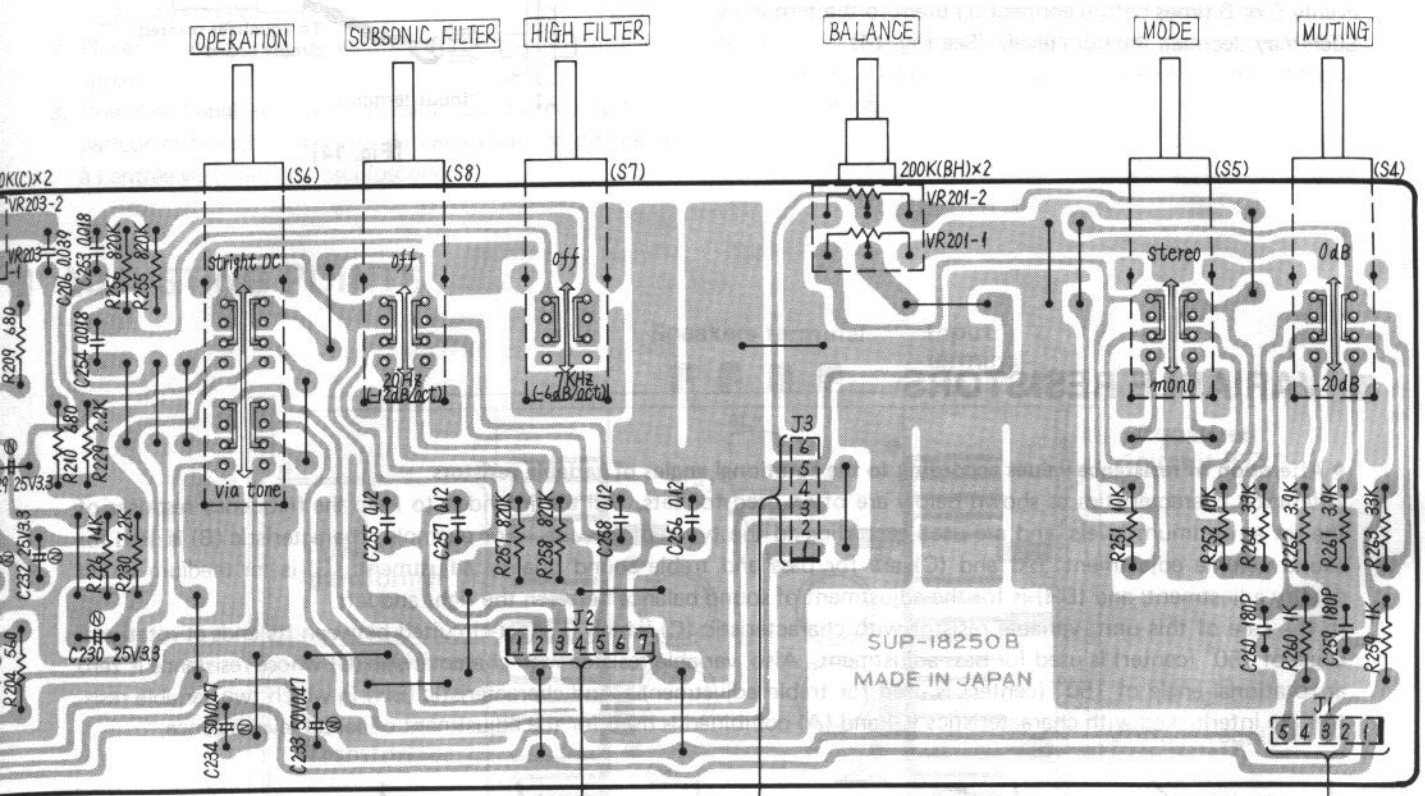
■ ADJUSTING POINTS



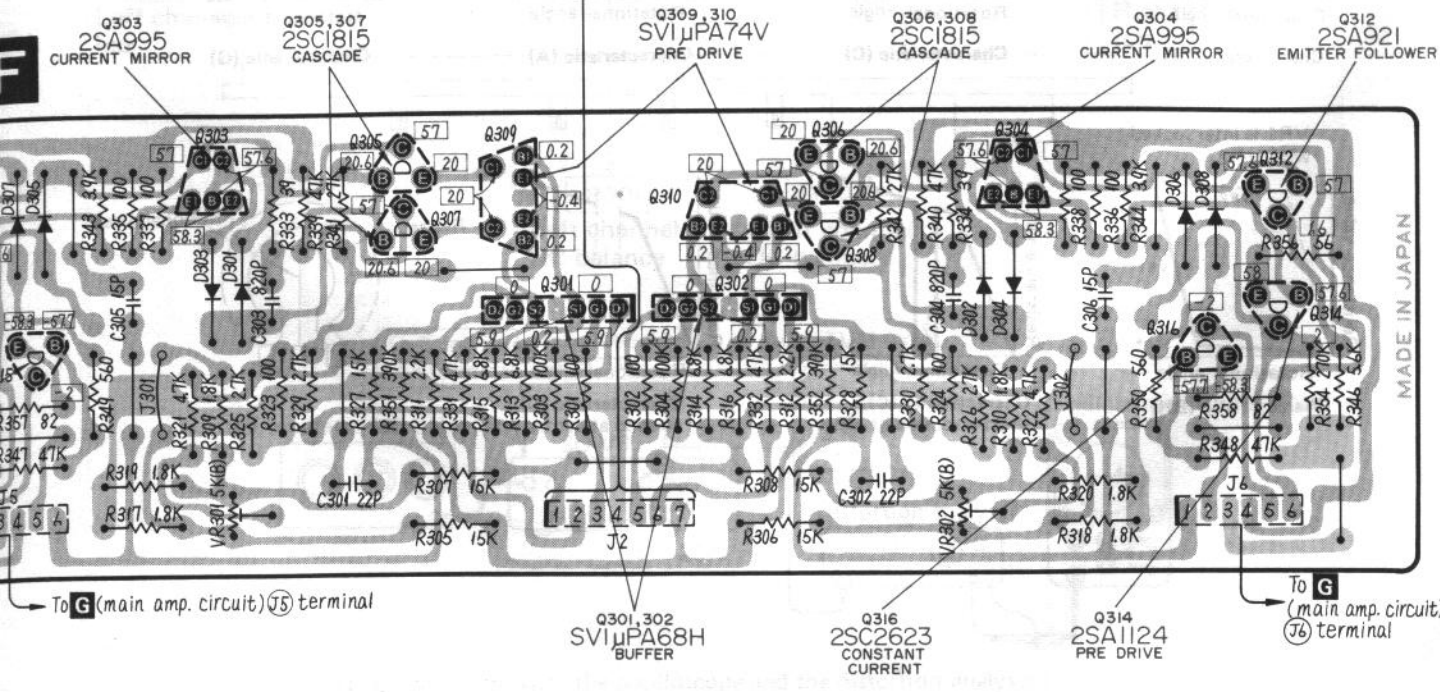
(Icq adjustment with the oscilloscope and the distortion analyser)
 (Icq-Einstellung mit Oszilloskop und Verzerrungsanalyser)
 (Réglage de Icq à l'aide de l'oscilloscope et de l'analyseur de distorsion.)

■ BLOCK DIAGRAM





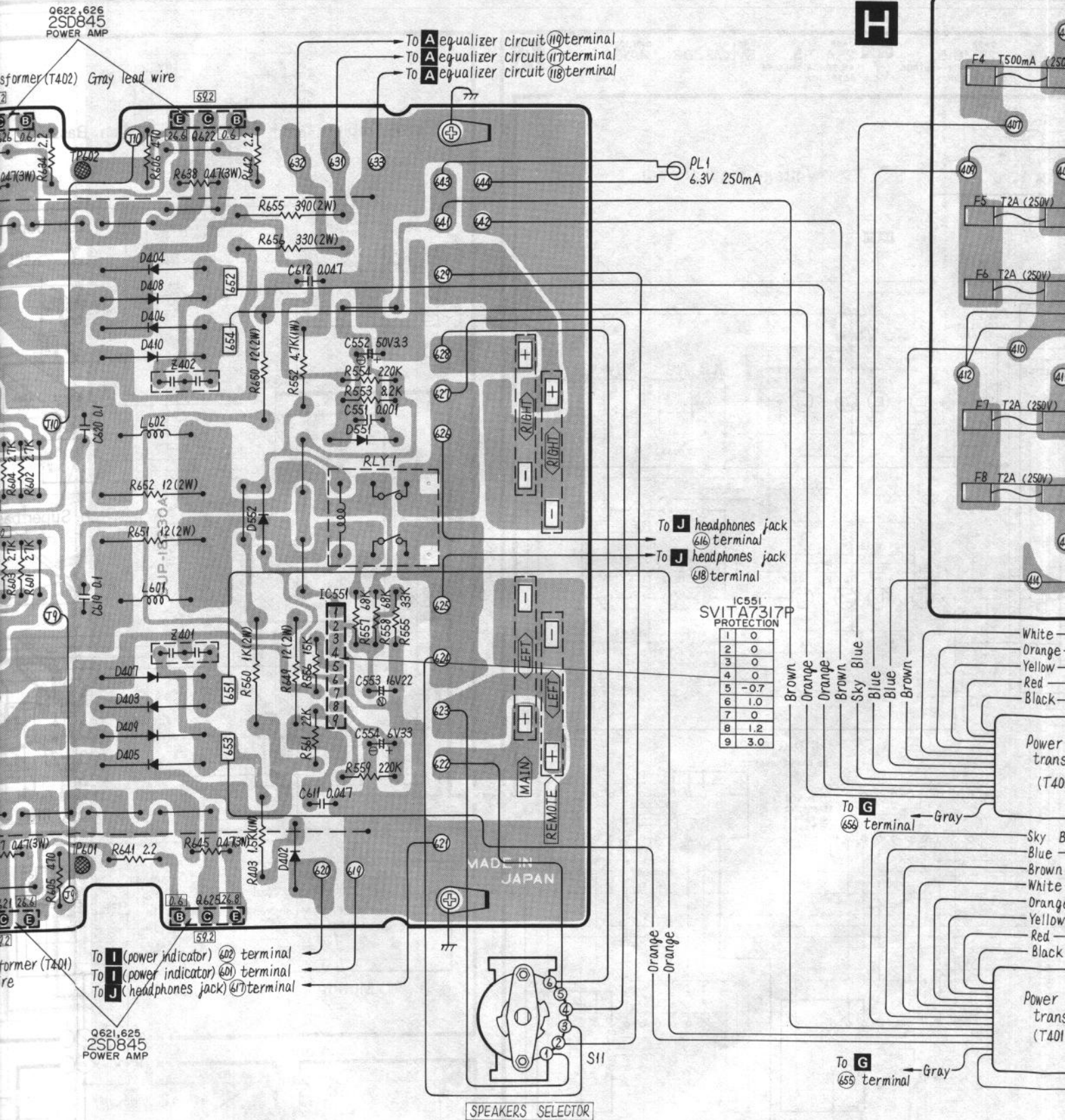
To A (equalizer circuit)
J1 terminal

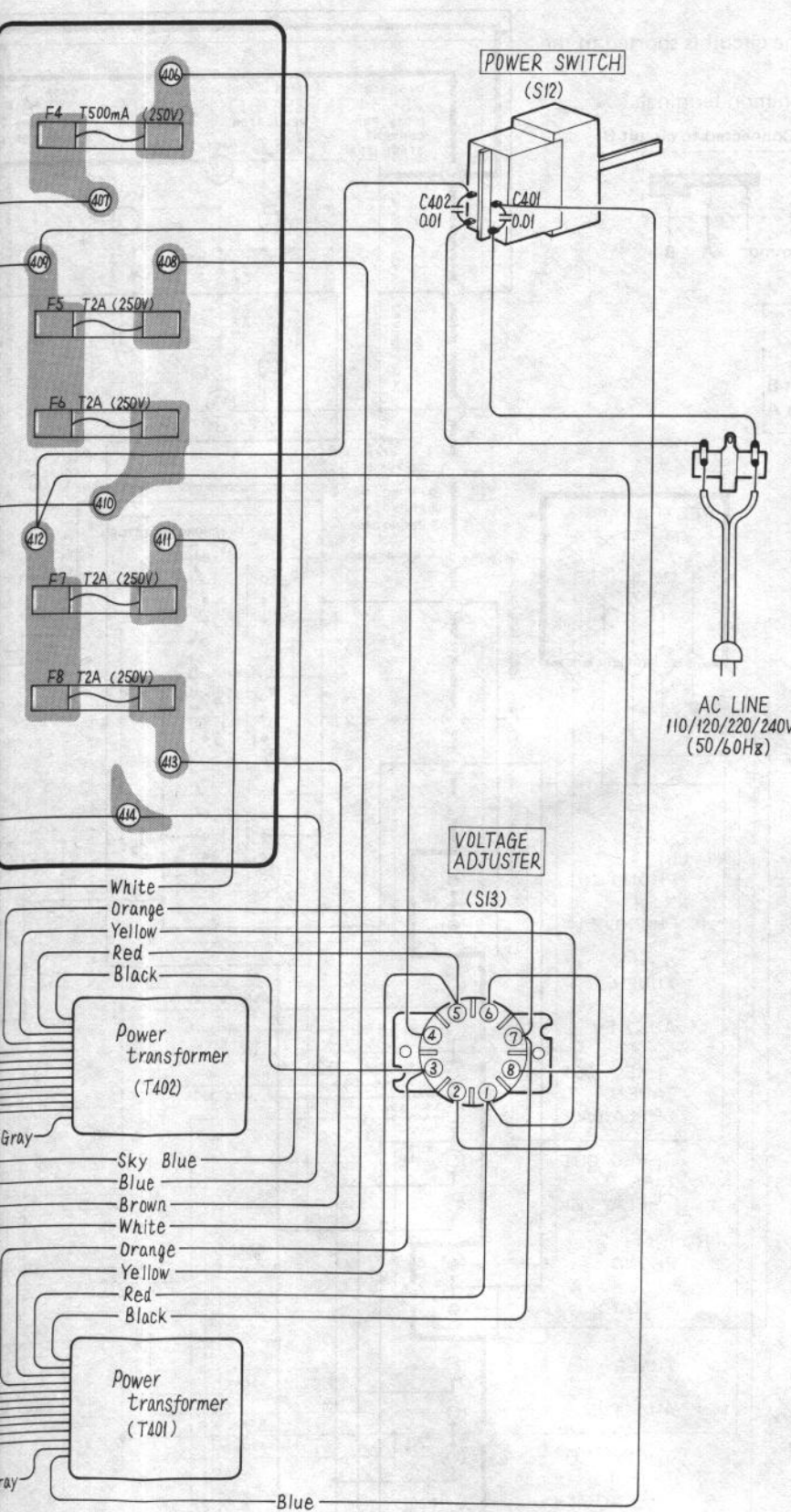


To G (main amp. circuit) J5 terminal

To G (main amp. circuit) J6 terminal

Earth (Ground) Lines





■ TERMINAL GUIDE OF TRANSISTOR AND IC'S

SVINJM4559DS	AN6552
SVITA7317P	2SK170
SVIμPA68H	2SA995N
2SC1815, 2SA921 2SA1124, 2SC2632 2SA1015, 2SC1815 2SC2632, 2SA1124	SVIμPA74V
2SK34	2SC1913, 2SA913
2SD661, 2SB745	2SD845, 2SB755

1

2

3

4

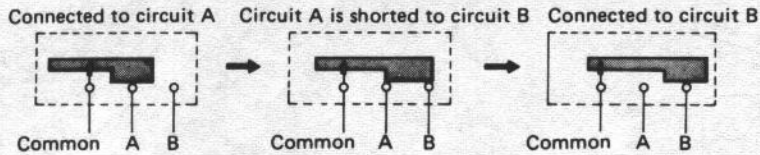
5

Shorting Switch

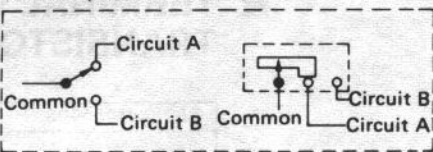
This unit uses a shorting switch. As illustrated below, the circuit is shorted to the next circuit without being opened.

In the circuit diagram, the shaded area represents the common terminal.

A



An example of circuit diagram



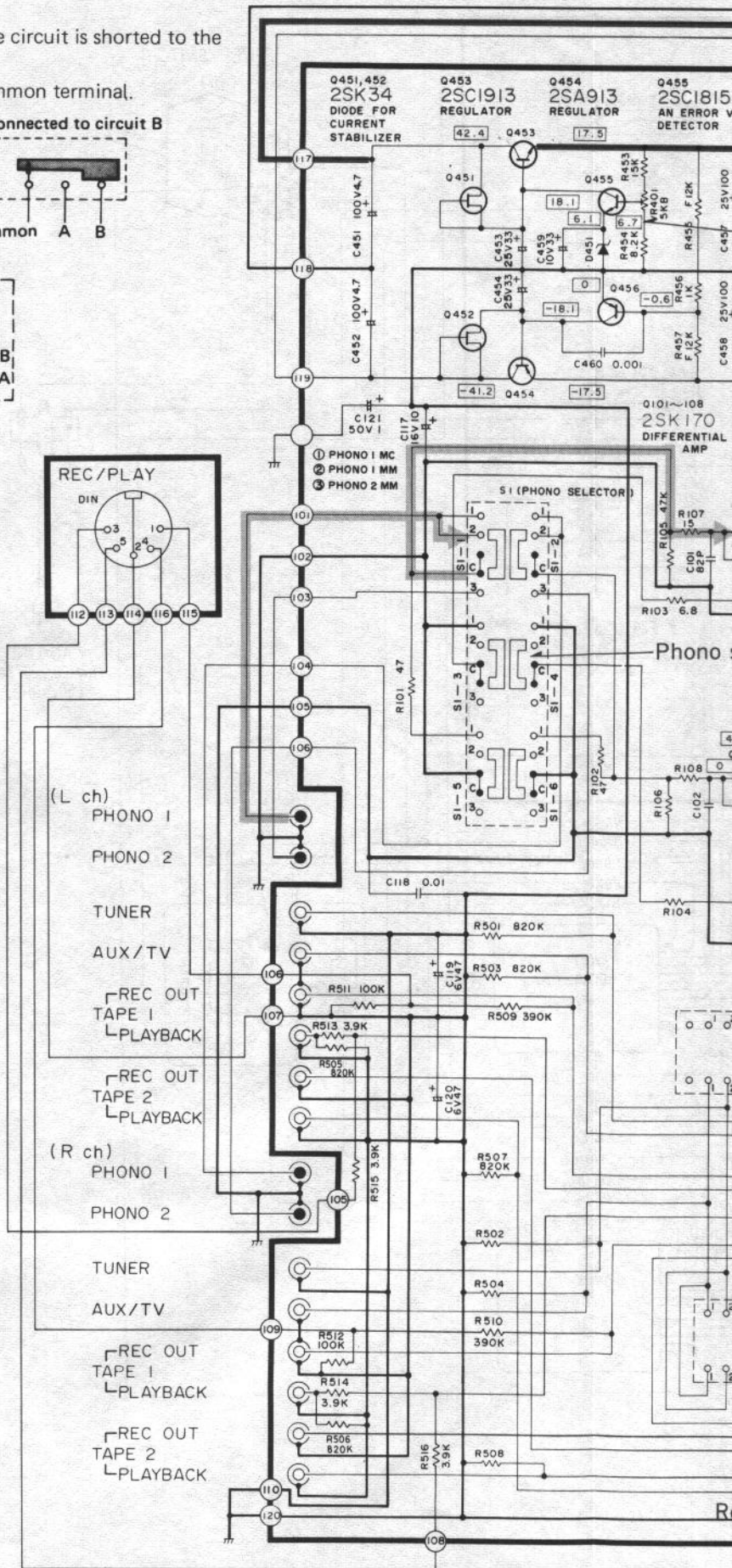
B

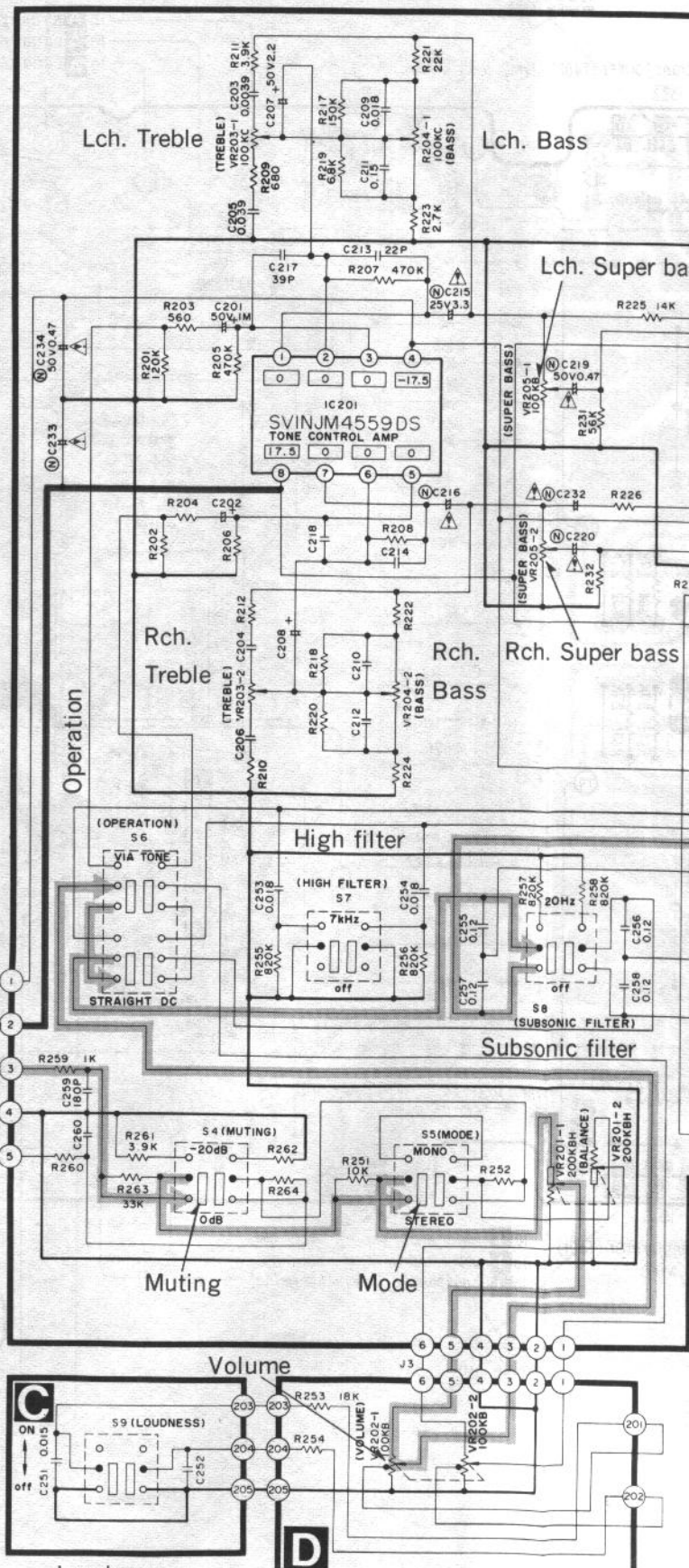
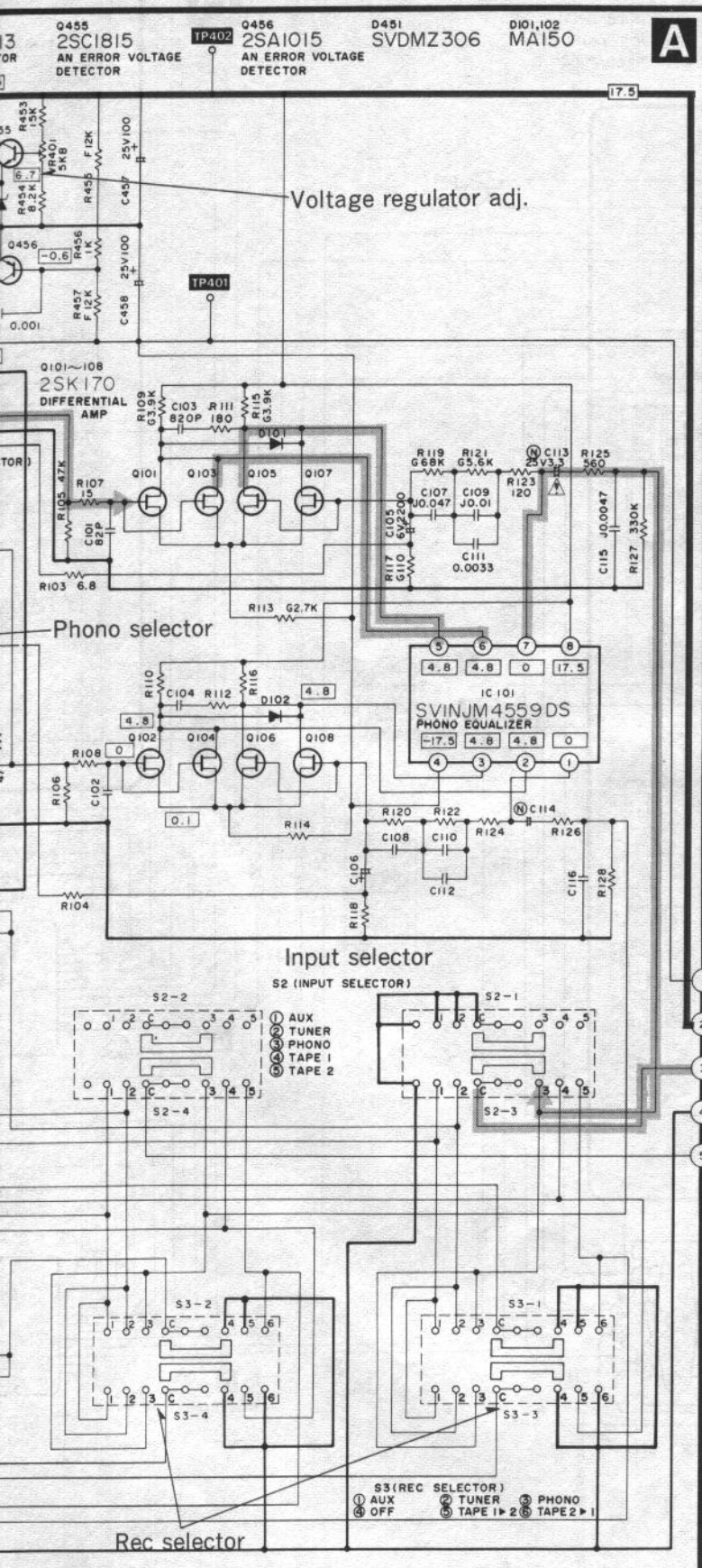
C

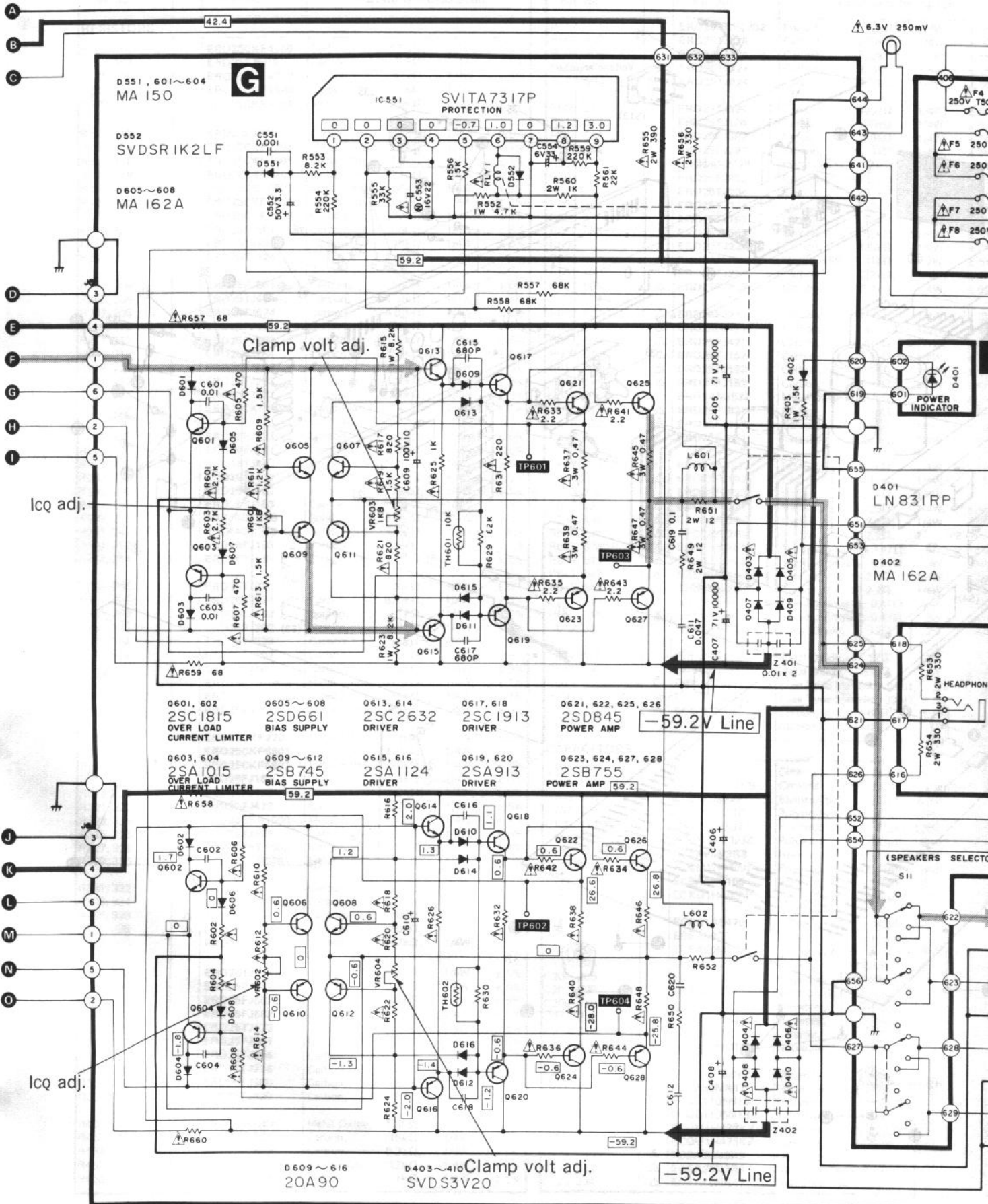
D

E

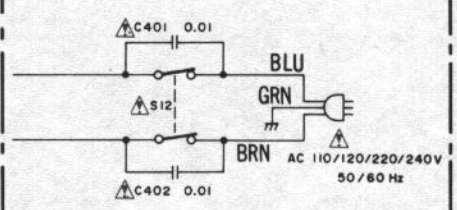
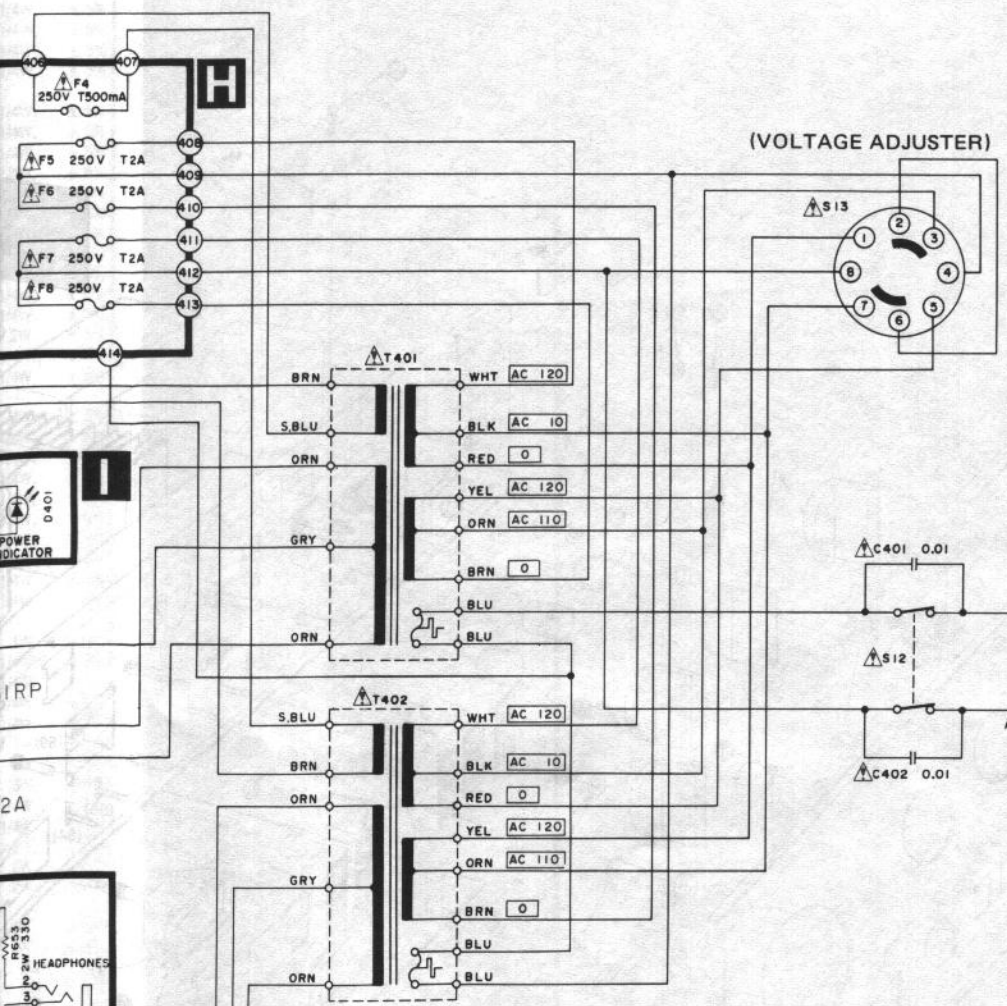
F



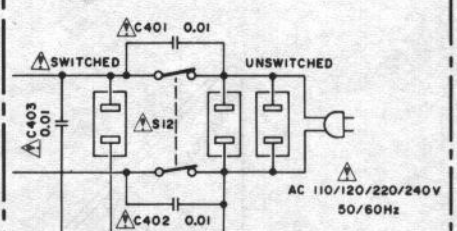




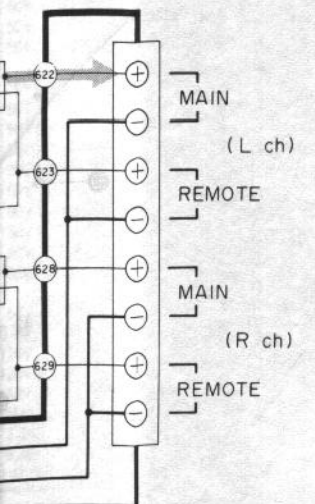
• Power source circuits for [XAL] and [XA]



[XAL] Available in Australia



[XA] . Available in Asia, Latin America, Middle East and Africa



Notes:

1. **S1:** Phono selector switch in "phono 1 MM" position.
① phono 1 MC ↔ ② phono 1 MM ↔ ③ phono 2 MM
2. **S2:** Input selector switch in "phono" position.
① aux ↔ ② tuner ↔ ③ phono ↔ ④ tape 1 ↔ ⑤ tape 2
3. **S3:** Rec selector switch in "phono" position.
① aux ↔ ② tuner ↔ ③ phono ↔ ④ off ↔ ⑤ tape dubbing 1 ▶ 2 ↔
⑥ tape dubbing 2 ▶ 1
4. **S4:** Muting switch in "0 dB" position.
5. **S5:** Mode switch in "stereo" position.
stereo ↔ mono
6. **S6:** Operation switch in "straight DC" position.
Straight DC ↔ via tone
7. **S7:** High filter switch in "off" position.
8. **S8:** Subsonic filter switch in "off" position.
9. **S9:** Loudness switch in "off" position.
10. **S10-1, 10-2:** Super bass turnover switch in "75Hz (12dB/oct)" position.
75Hz (12dB/oct) ↔ 150Hz (12dB/oct)
11. **S11:** Speakers selector switch in "main" position.
12. **S12:** Power switch in "on" position.
13. **S13:** Voltage adjustment switch in "240V" position.
240V ↔ 220V ↔ 110V ↔ 120V
14. Indicates that only parts specified by the manufacturer be used for safety.
15. Indicated voltage values are the standard 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.
16. Phono signal lines of left channel
17. Positive (+B) voltage lines.