

RXB

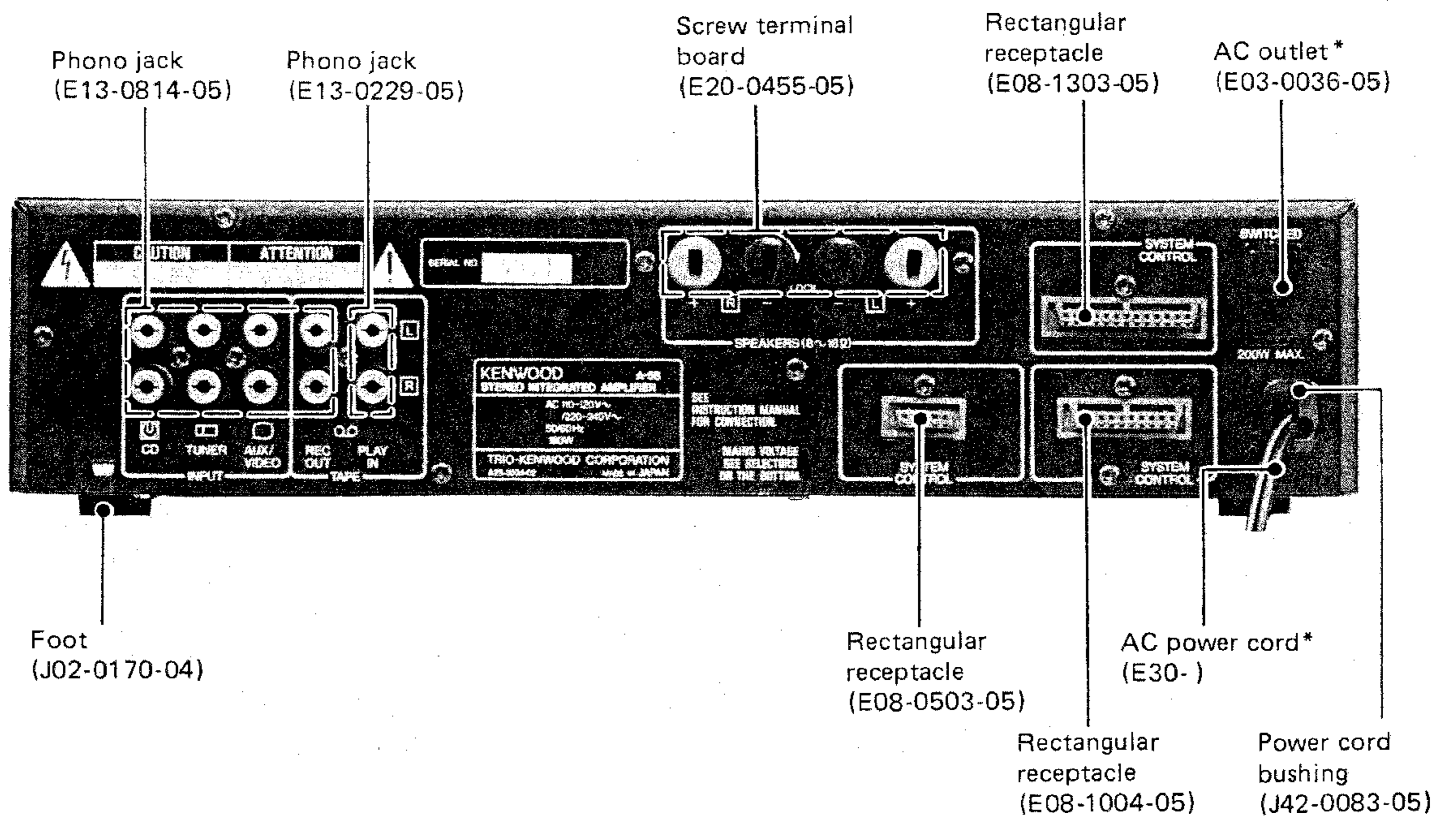
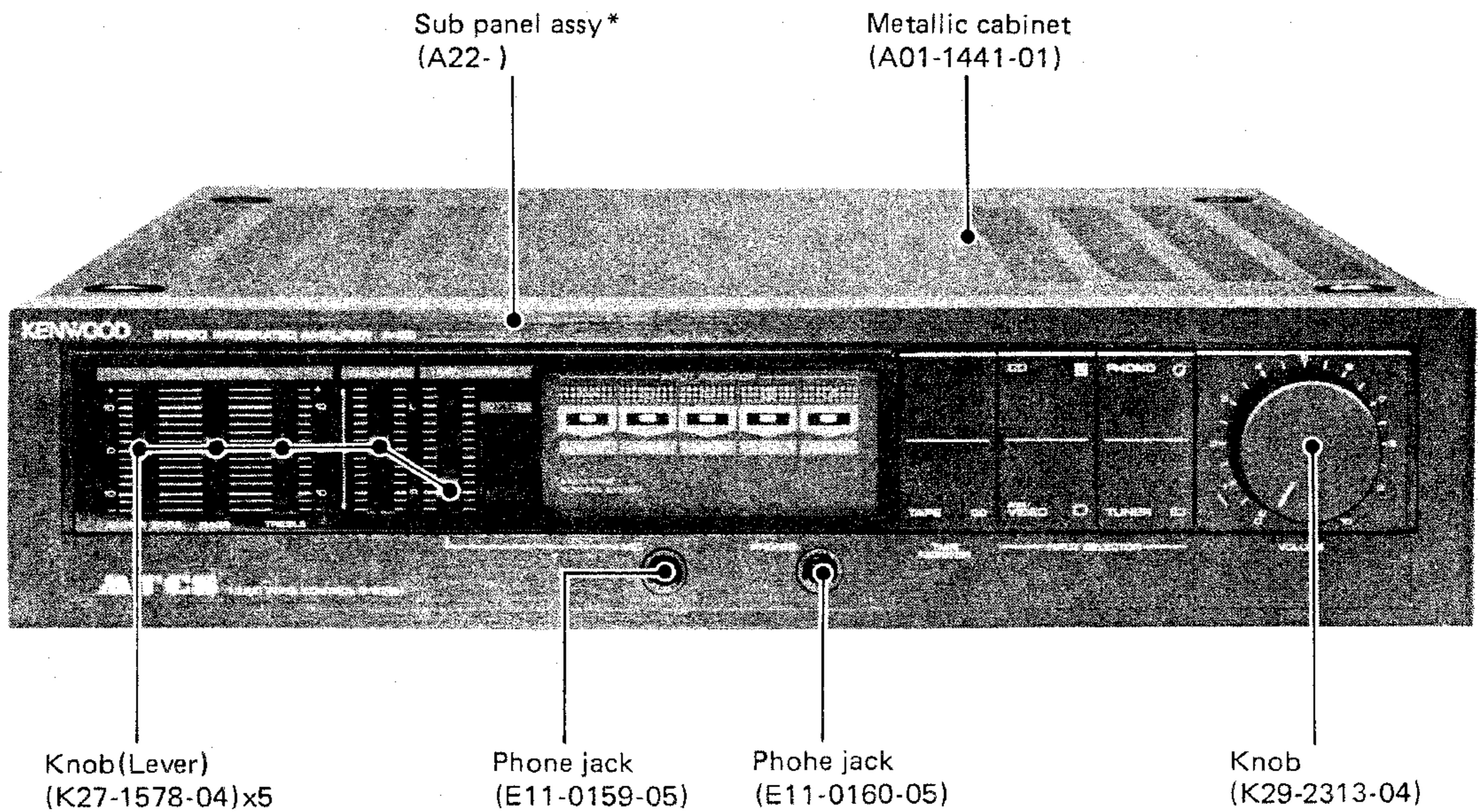
432

A-5S

KENWOOD

STEREO INTEGRATED AMPLIFIER

SERVICE MANUAL



Caution When a repair to MIDI M-3S is requested, be sure to advise the customer to ship together with amplifier A-5S.

* Refer to parts list on page 6.

121

CAUTION/DISASSEMBLY FOR REPAIR

PRECAUTIONS FOR REPAIR

MIDI M-3S has a power supply unit only in amplifier A-5S and power transformers are not incorporated in other sets (tuner, cassette tape deck, etc.). At the occasion of repair to a set that is other than the amplifier, use the power supply unit of amplifier A-5S, and supply power to another set using a system control connection cord.

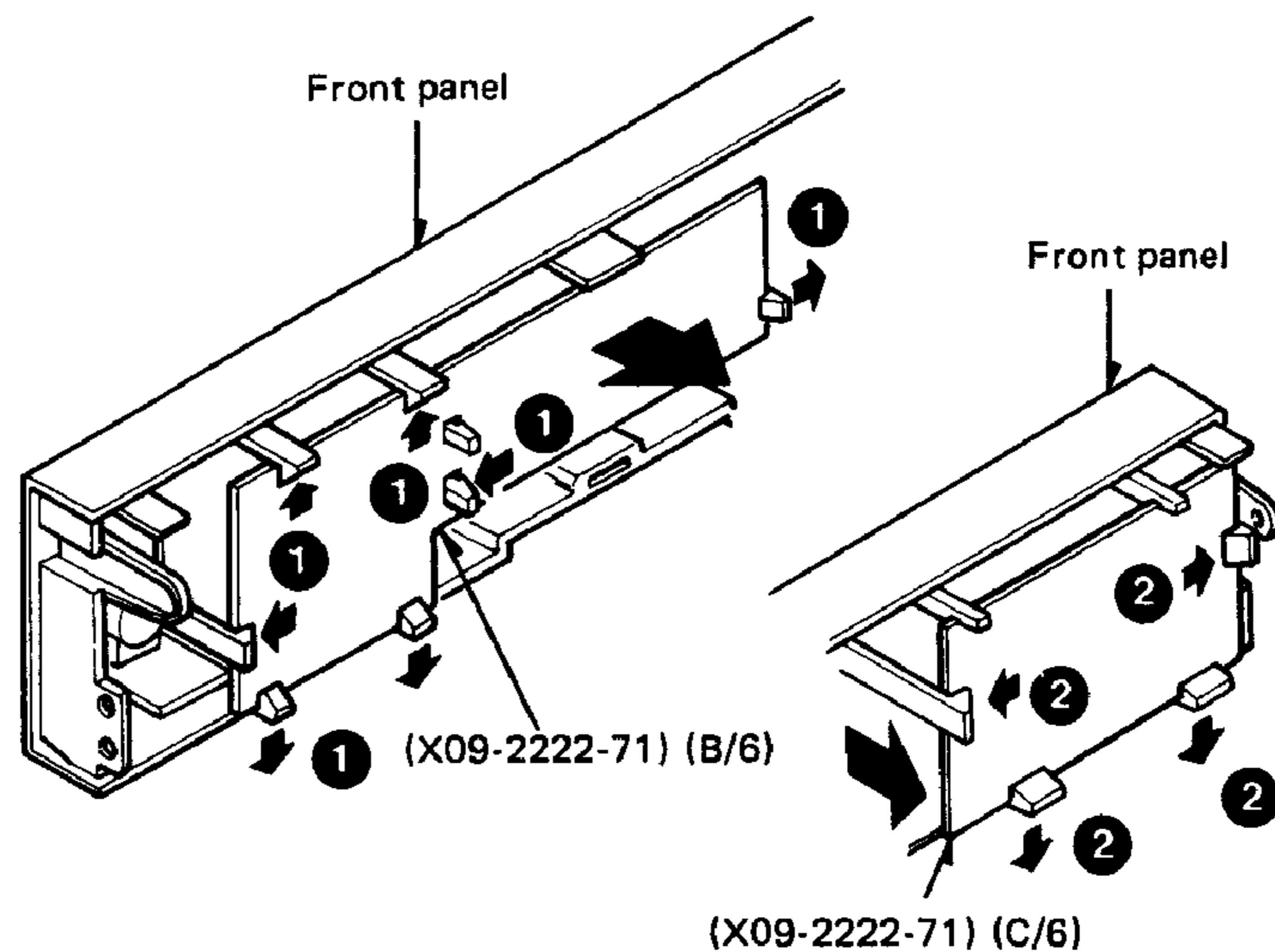
The combination of MIDI M-3S is as follows. When a repair to MIDI M-3S is requested, be sure to advise the customer to ship together with amplifier A-5S.

System name	Amplifier	Tuner	Cassette tape deck	Turntable
MIDI M-3S	A-5S	T-3S/T-3LS	X-3WS	P-3S

DISASSEMBLY FOR REPAIR

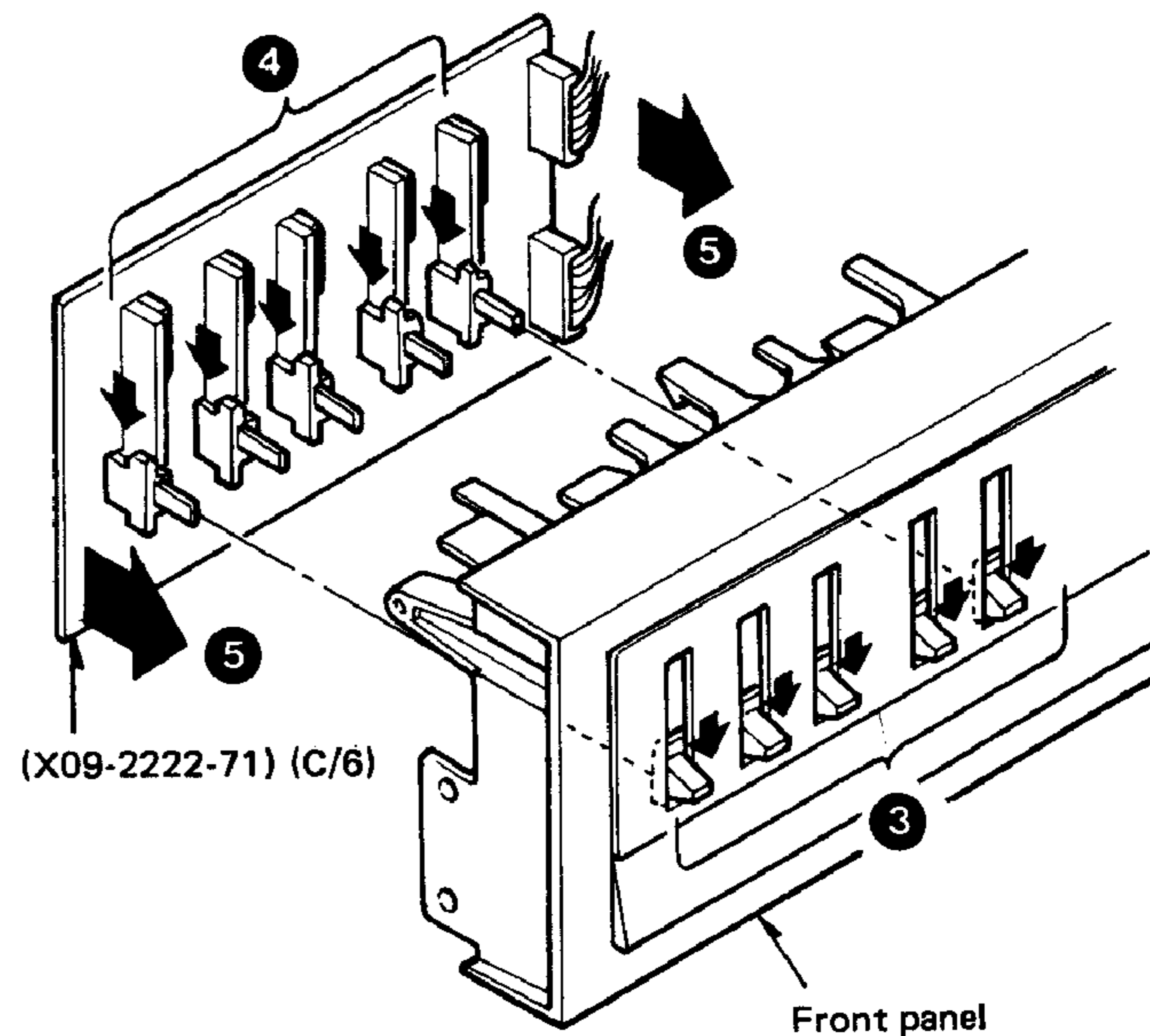
REMOVING THE PC BOARD (X09-2222-71) (B/6)

- Pressing the pawls of the front panel which are securing the PC board in the directions of arrows, remove the PC board (①).



REMOVING AND REINSTALLING THE TONE UNIT (X09-2222-71) (C/6)

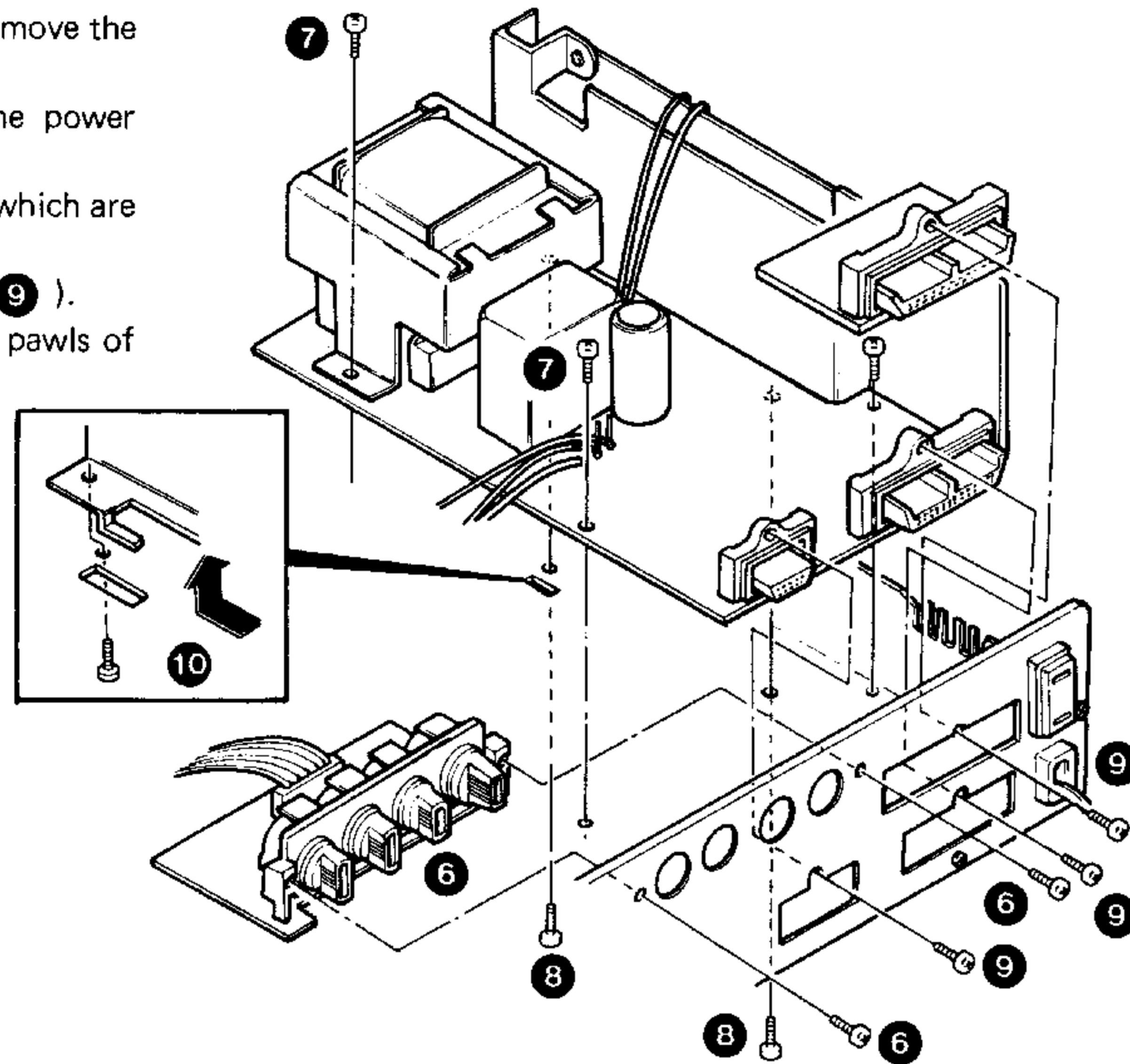
- Pressing the pawls of the front panel which are securing the PC board in the directions of arrows, remove the PC board (②).
 - When reinstalling the PC board, lower each knob on the panel side to the lowest position (③), and move the shaft of each slide variable resistor to the lowest position (④). Press the PC board horizontally from the rear of the panel so that the pawls will catch it (⑤).
- After reinstalling the PC board, confirm that the shafts of all the slide variable resistors are fixed to the knobs.



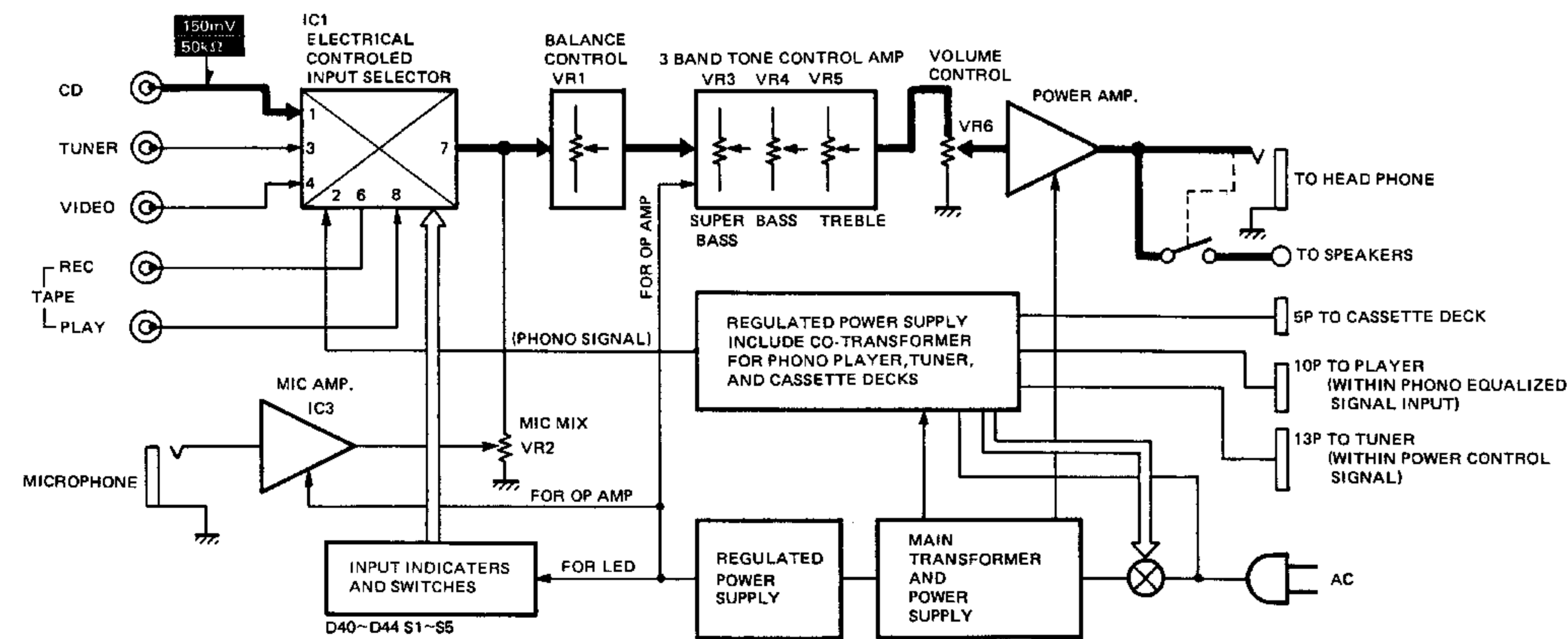
DISASSEMBLY FOR REPAIR/BLOCK LEVEL DIAGRAM

REMOVING THE POWER SUPPLY

1. Remove the two screws from the rear side to remove the speaker terminal unit (6).
2. Remove the two screws from the top of the power supply (7).
3. Remove the two screws from the bottom plate which are securing the radiator panel (8).
4. Remove the three screws from the rear panel (9).
5. Lift the power supply paying attention to the pawls of the radiator panel (10).



BLOCK LEVEL DIAGRAM



CIRCUIT DESCRIPTION/ADJUSTMENT/REGLAGE/ABGLEICH

**Description of Components
POWER SUPPLY UNIT (X00-2372-71)**

Components	Application/function	Operation/condition/compatibility
Q1	Power relay drive	Tr switch that allows flow of coil current of relay K1 when ON.
Q2	Error amplification for +16V	Controls Q3, Q4 by reference voltage based on D12.
Q3	+16V constant voltage power supply	Darlington connection with Q4.
Q4	+16V constant voltage power supply	Darlington connection with Q3.
Q5	-16V constant voltage power supply	
IC1	+5V constant voltage power supply	3-terminal regulator, 5V

AUDIO UNIT (X09-2222-71)

Components	Application/function	Operation/condition/compatibility
Q1, Q2	Muting	Controls with IC1. Shorts input unit of main amplifier.
Q3, Q4	For bias current	For Q9~Q12 bias current.
Q5~Q8	Current driver	Main amplifier current amplifier unit.
Q9~Q12	Emitter follower	Main amplifier current amplifier unit.
Q13	+B power supply for A class	
Q16	+16V constant voltage	
IC1	Input selector	Electronic input selection. Used at ±16V.
IC2	Tone control amplifier	Used at ±16V.
IC3	Microphone amplifier	Used at ±16V.

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Set the controls and switches as follows: POWER: ON							
1	IDLE CURRENT	-	Connect a DC voltmeter across CP1 (L) CP2 (R)	VOLUME: 0	R45.49 (L) R46.50 (R)	5mV~40mV	(a)

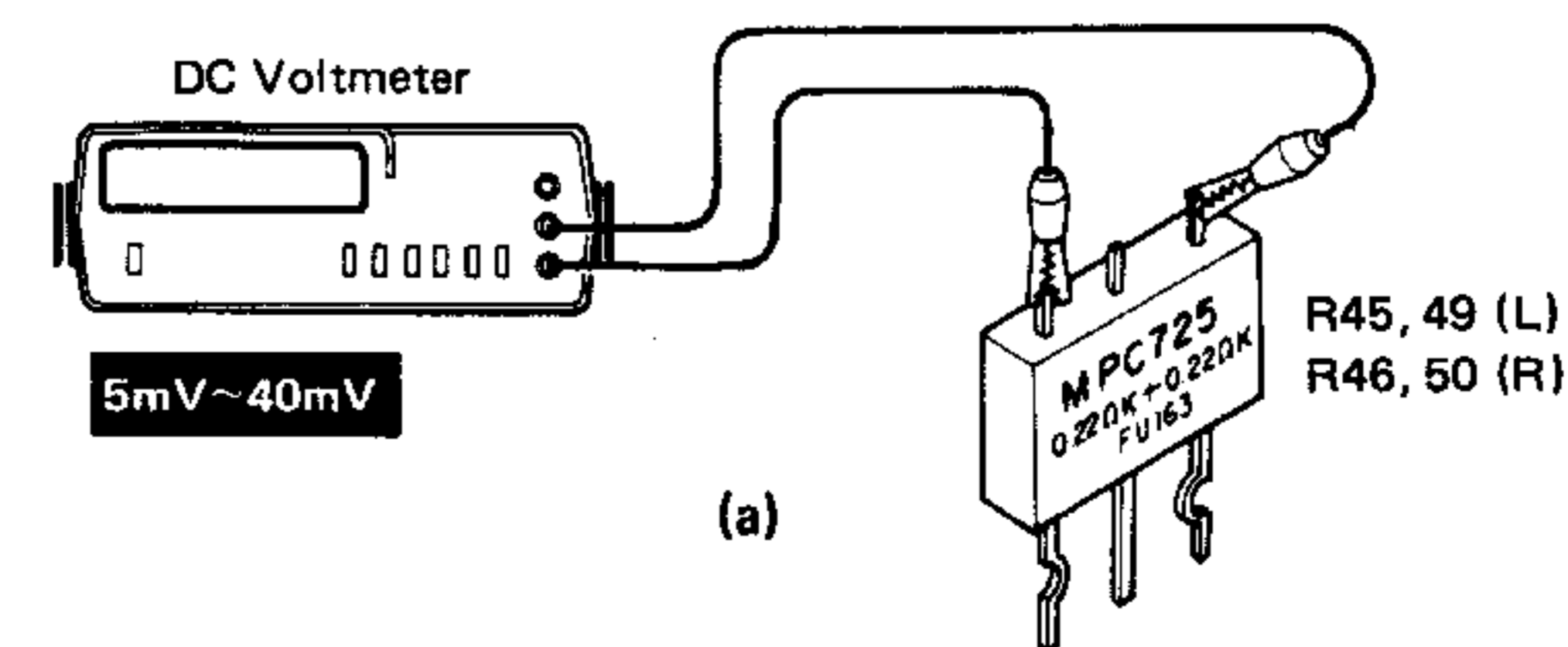
*If meter reads is high, cut resistor R49(R50)
If meter reads is low, cut resistor R45(R46)

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS L'ALIGNEMENT	ALIGNER POUR	FIG.
Reglar les controles et les boutons comme suit: POWER: ON							
1	COURANT DE POLARISATION	-	Connecter un voltmètre de CC sur CP1 (G) CP2 (D)	VOLUME: 0	R45.49 (G) R46.50 (D)	5mV~40mV	(a)

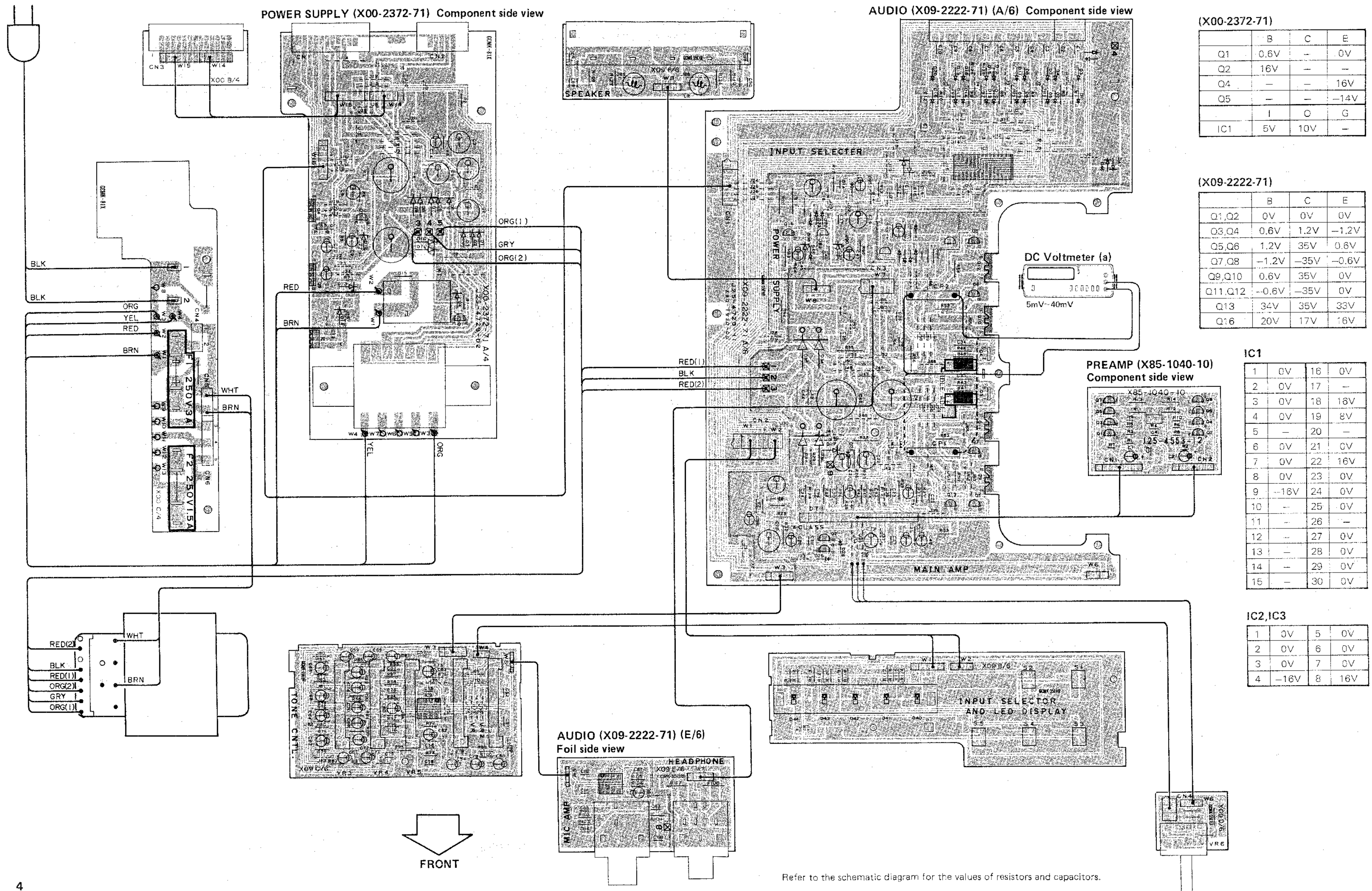
ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VORSTÄRKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
Die Regler und Knöpfe wird folgt einstellen: POWER: ON							
1	LEERLAUFSTROM	-	Einen Gleichspannungsmesser über CP1 (L) CP2 (R) anschließen	VOLUME: 0	R45.49 (L) R46.50 (R)	5mV~40mV	(a)



A-5S A-5S

PC BOARD



(X00-2372-71)

	B	C	E
Q1	0.6V	-	0V
Q2	16V	-	-
Q4	-	-	16V
Q5	-	-	-14V
	I	O	G
IC1	5V	10V	-

(X09-2222-71)

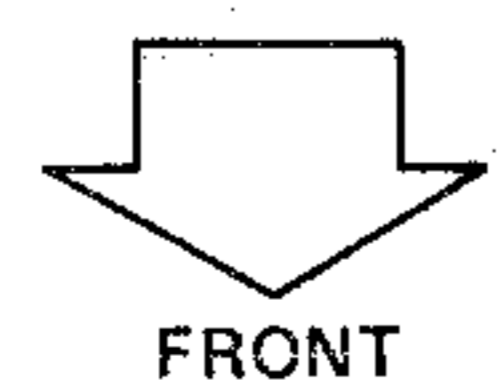
	B	C	E
Q1,Q2	0V	0V	0V
Q3,Q4	0.6V	1.2V	-1.2V
Q5,Q6	1.2V	35V	0.6V
Q7,Q8	-1.2V	-35V	-0.6V
Q9,Q10	0.6V	35V	0V
Q11,Q12	-0.6V	-35V	0V
Q13	34V	35V	33V
Q16	20V	17V	16V

IC1

	B	C	E
1	0V	16	0V
2	0V	17	-
3	0V	18	16V
4	0V	19	8V
5	-	20	-
6	0V	21	0V
7	0V	22	16V
8	0V	23	0V
9	-16V	24	0V
10	-	25	0V
11	-	26	-
12	-	27	0V
13	-	28	0V
14	-	29	0V
15	-	30	0V

IC2,IC3

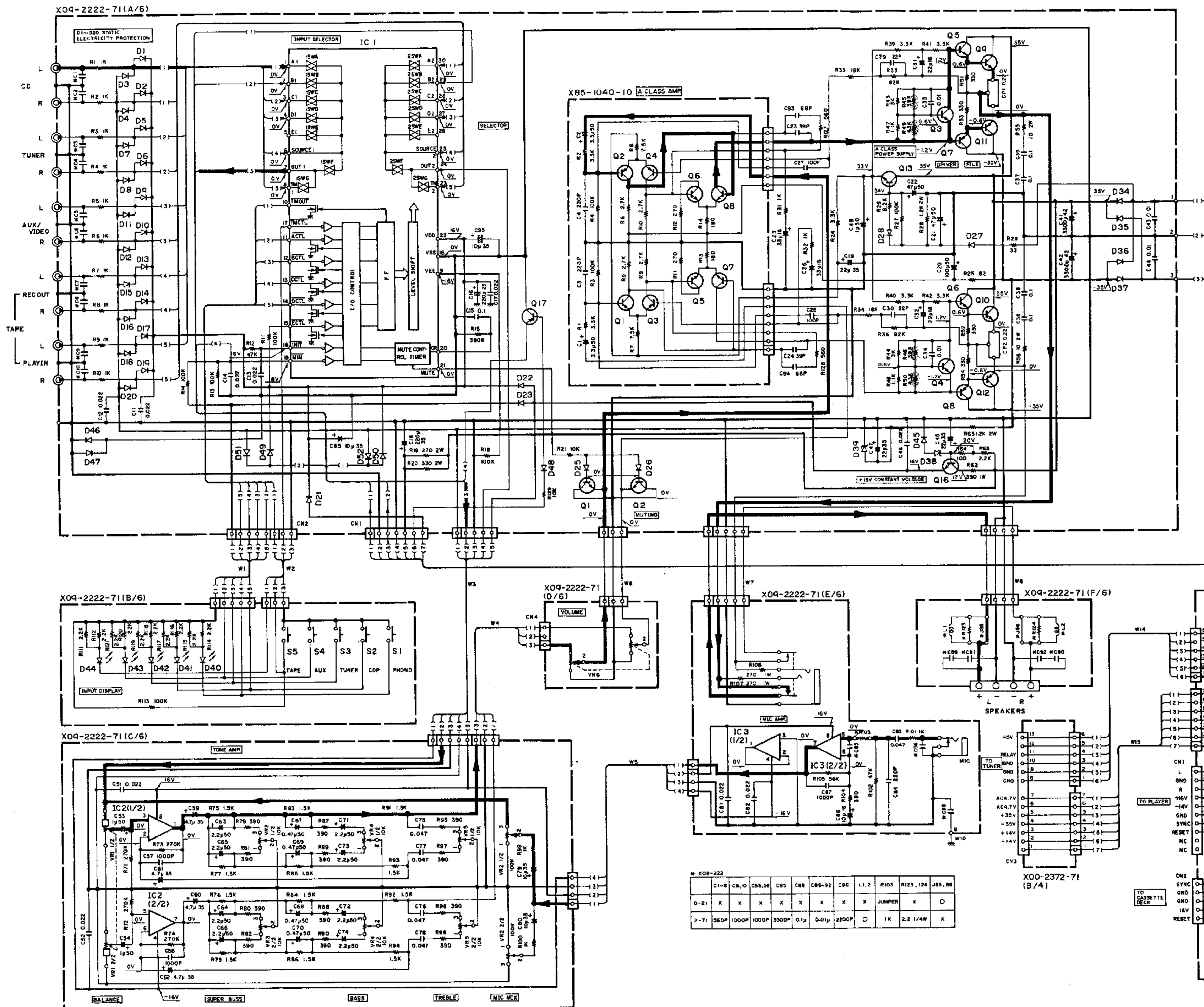
	B	C	E
1	0V	5	0V
2	0V	6	0V
3	0V	7	0V
4	-16V	8	16V



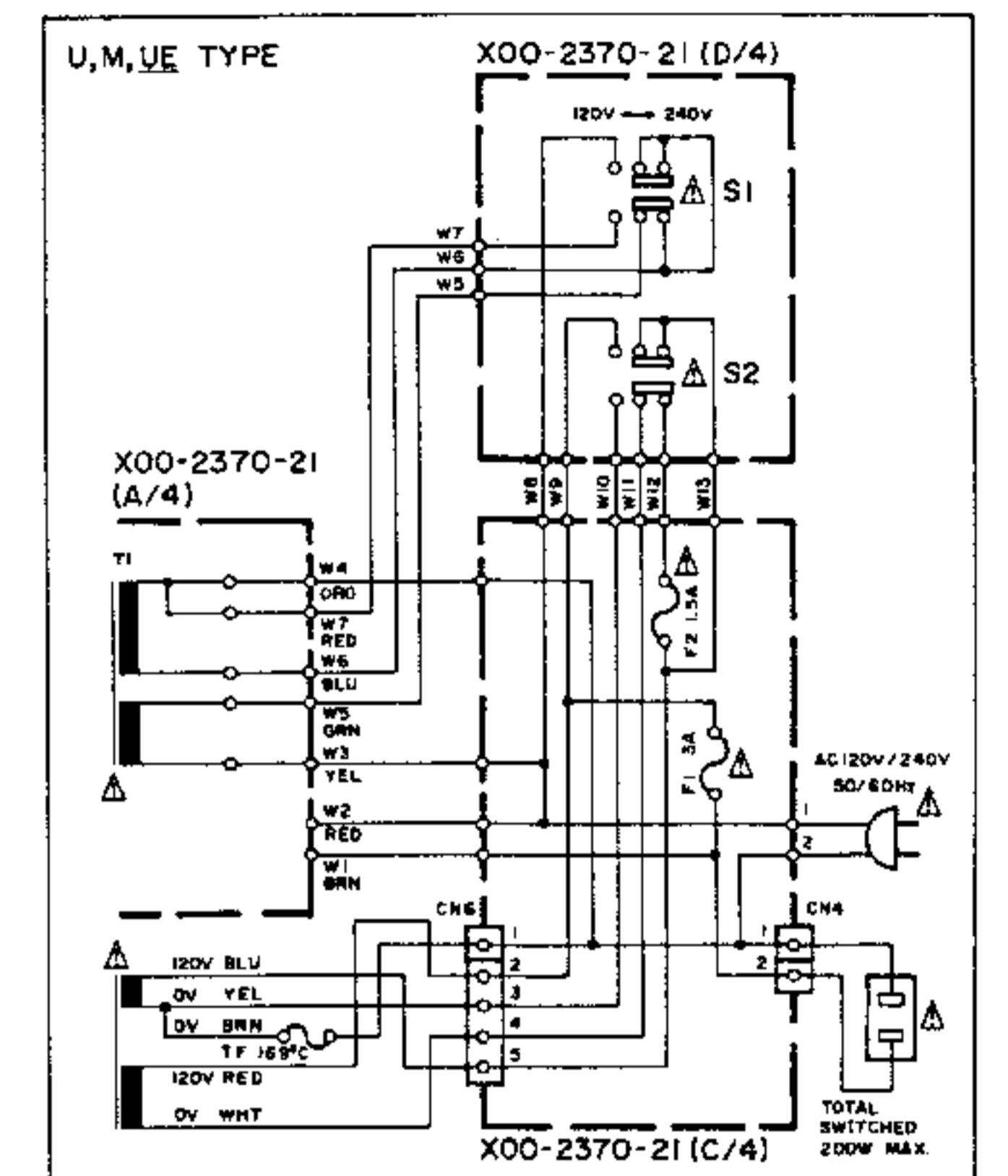
Refer to the schematic diagram for the values of resistors and capacitors.

IDLE CURRENT ADJUSTMENT
 If meter reads is high, cut resistor R49 (R50).
 If meter reads is low, cut resistor R45 (R46).

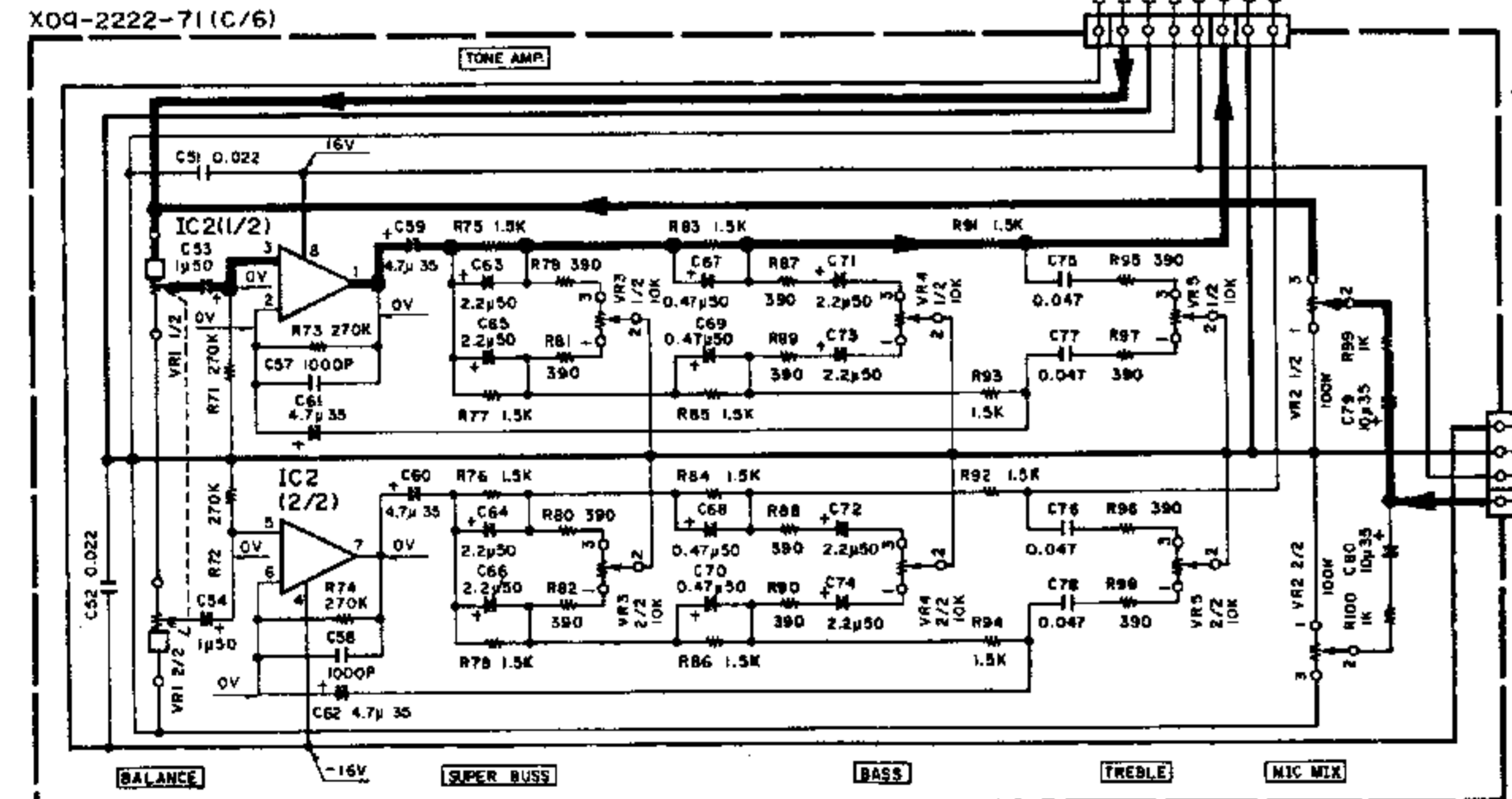
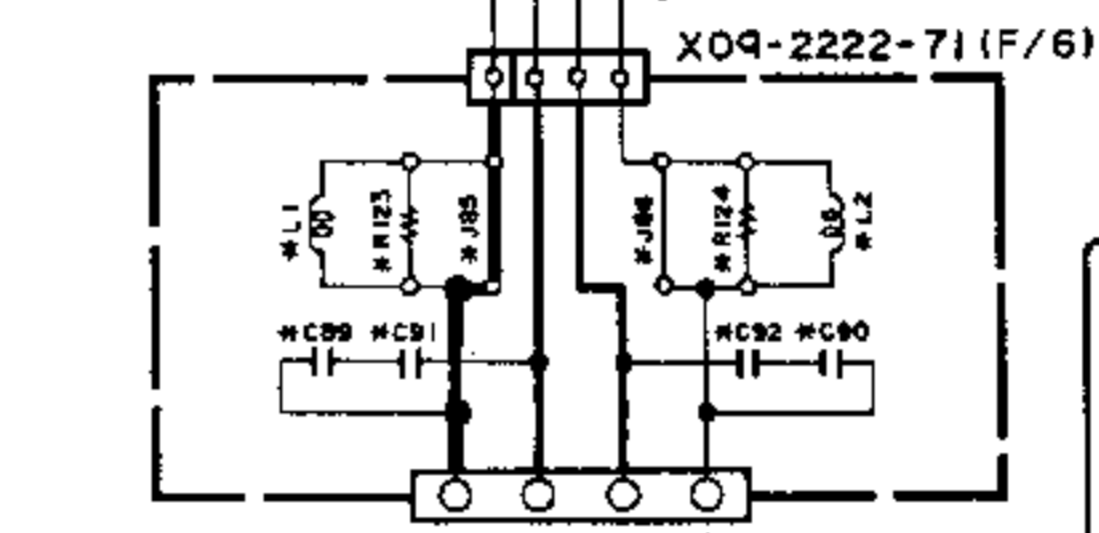
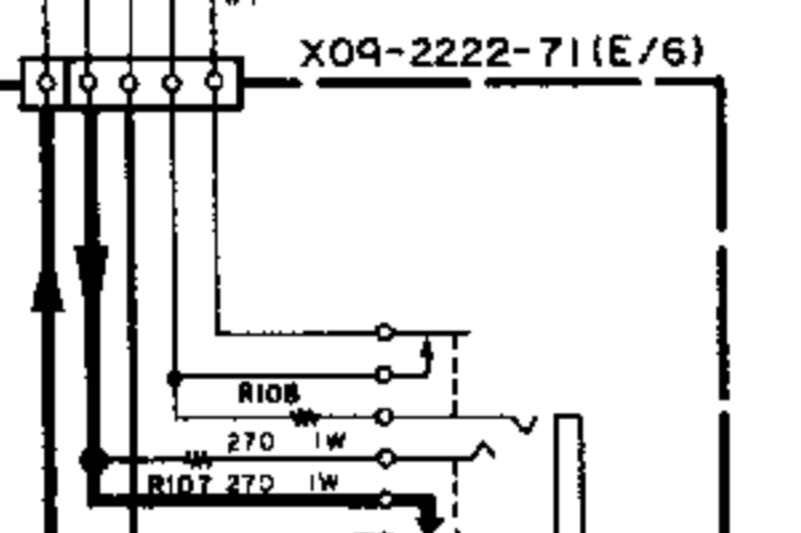
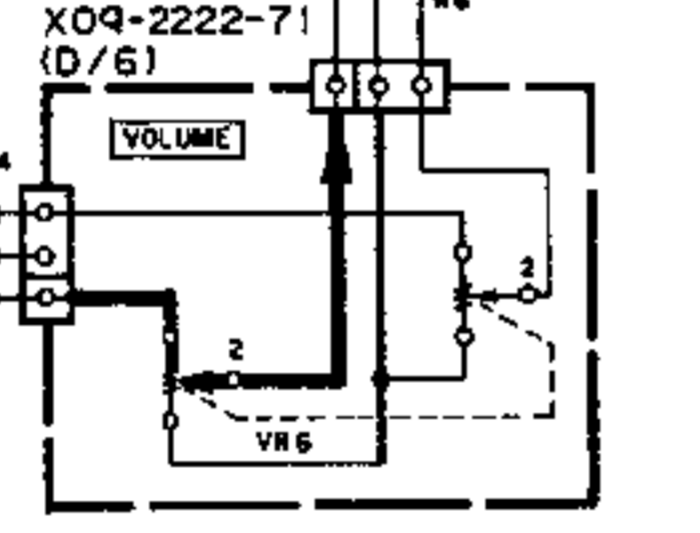
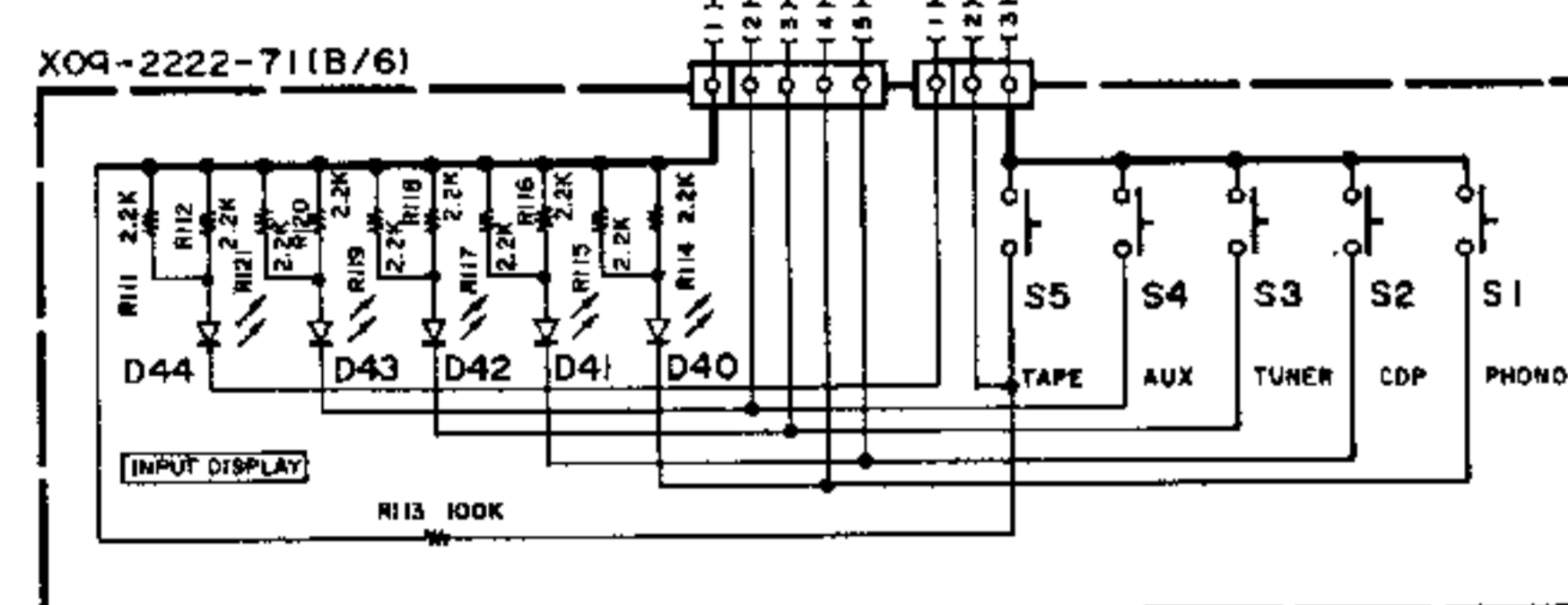
- DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.



- XO9-2222-71 (A/6)**
- Q1, 2, 10 : 2SC2320(E, F)
 - Q3, 4 : 2SC4451(A)(Q)
 - Q5, 6 : 2SC2003(L, K)
 - Q7, 8 : 2SA954(L, K)
 - Q4, 10 : 2SC1845(I, P, Y)
 - Q11, 12 : 2SA770(O, P, Y)
 - Q16 : 2SC2060
 - Q17 : 2SA733(A)(O, P)
 - D-23, 25, 26, 45-52 : ISS133 or ISS176
 - D27 : DSM1A1
 - D28 : ISS133 or ISS176
 - D34-37 : S3V20
 - D38, 34 : RD16E(B2)
 - D40-44 : S30-0431-05
 - IC1 : LC7818
 - IC2 : UPC4570C or NJM2068D-D
 - IC3 : AN6556
- X85-1040-10**
- Q1-4 : 2SA442(F, E)
 - Q5-8 : 2SC1845(F, E)



- XO0-2372-71 (A/4)**
- Q1-3 : 2SC2320(E, F)
 - Q4 : 2SC2167
 - Q5 : 2SA957
- D1, 3-11 : DSM1A1**
D12, 13 : RD16E(B2)
D14, 15 : ISS133 or ISS176
IC1 : μPC78L05



XO9-222												
C1-B	C6,10	C55,56	C65	C68	C69-92	C90	L1,2	R103	R123, 124	R53, 56		
0-21	X	X	X	X	X	X	X	X	X	JUMPER	X	O
2-71	S60P	1000P	1000P	3300P	0.1p	0.01p	2200P	O	1K	2.2 1/4W	X	

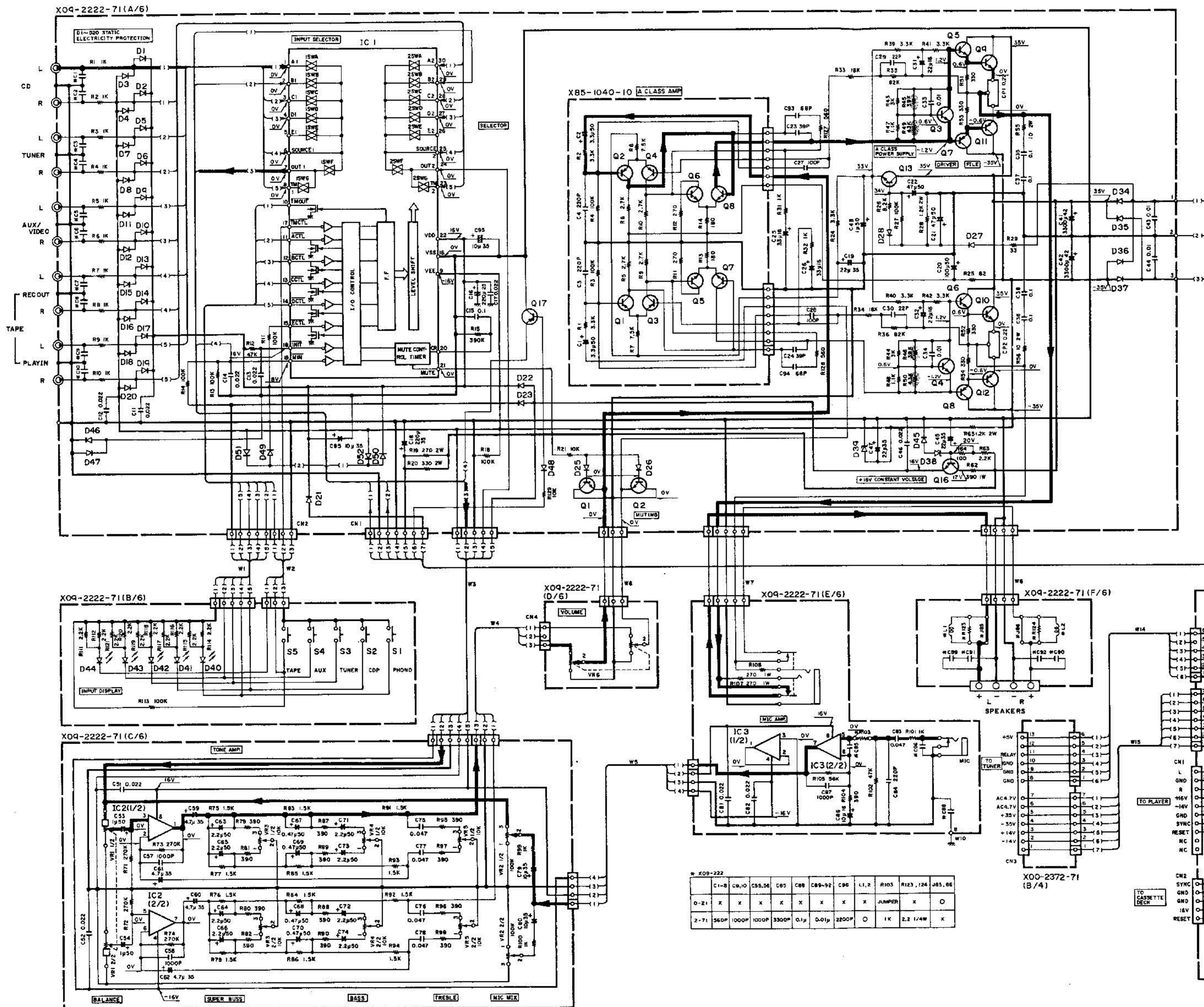
- 2SA733
- 2SA954
- 2SA992
- 2SC1845
- 2SC2003
- 2SC2060
- 2SC2320
- 2SC2167
- 2SA770
- 2SA957
- 2SC1985
- 2SC2167
- NJM2068D-D
- AN6556
- μPC4570C
- μPC78L05
- LC7818

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

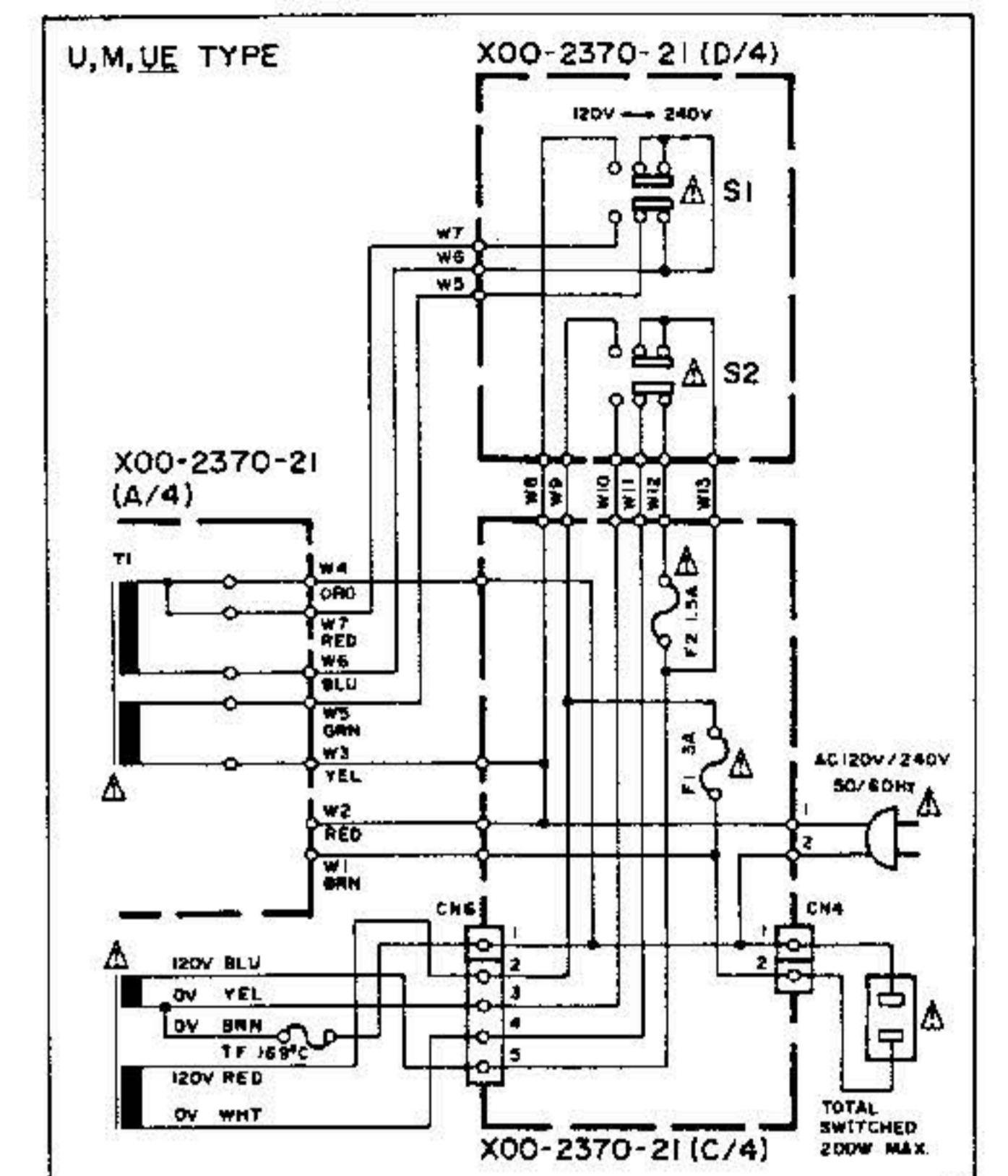


IDLE CURRENT ADJUSTMENT
 If meter reads is high, cut resistor R49 (R50).
 If meter reads is low, cut resistor R45 (R46).

- DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.



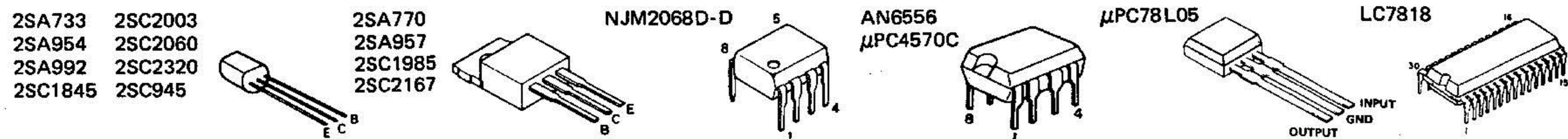
- XO9-2222-71 (A/6)**
 Q1, 2, 10 : 2SC2320(E, F)
 Q3, 4 : 2SC4451(A)(Q)
 Q5, 6 : 2SC2003(L, K)
 Q7, 8 : 2SA954(L, K)
 Q4, 10 : 2SC1845(I, P, Y)
 Q11, 12 : 2SA770(O, P, Y)
 Q16 : 2SC2060
 Q17 : 2SA733(A)(Q, P)
 D-23, 25, 26, 45-52 : ISS133 or ISS176
 D27 : DSM1A1
 D28 : ISS133 or ISS176
 D34-37 : S3V20
 D38, 34 : RD16E(B2)
 D40-44 : S30-0431-06
 IC1 : LC7818
 IC2 : UPC4570C or NJM2068D-D
 IC3 : AN6556
- X85-1040-10**
 Q1-4 : 2SA442(F, E)
 Q5-8 : 2SC1845(F, E)



- XO0-2372-71 (A/4)**
 Q1-3 : 2SC2320(E, F)
 Q4 : 2SC2167
 Q5 : 2SA957
 D1, 3-11 : DSM1A1
 D12, 13 : RD16E(B2)
 D14, 15 : ISS133 or ISS176
 IC1 : µPC78L05

W-209-222

C1-8	C9,10	C55,56	C65	C68	C69-92	C90	LL1,2	R103	R123, 124	JB3, JB5
2-1	X	X	X	X	X	X	X	X	X	O
2-7	S60P	1000P	1000P	3300P	0.1p	0.01p	2200P	O	1K	2.2 1/4W



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

