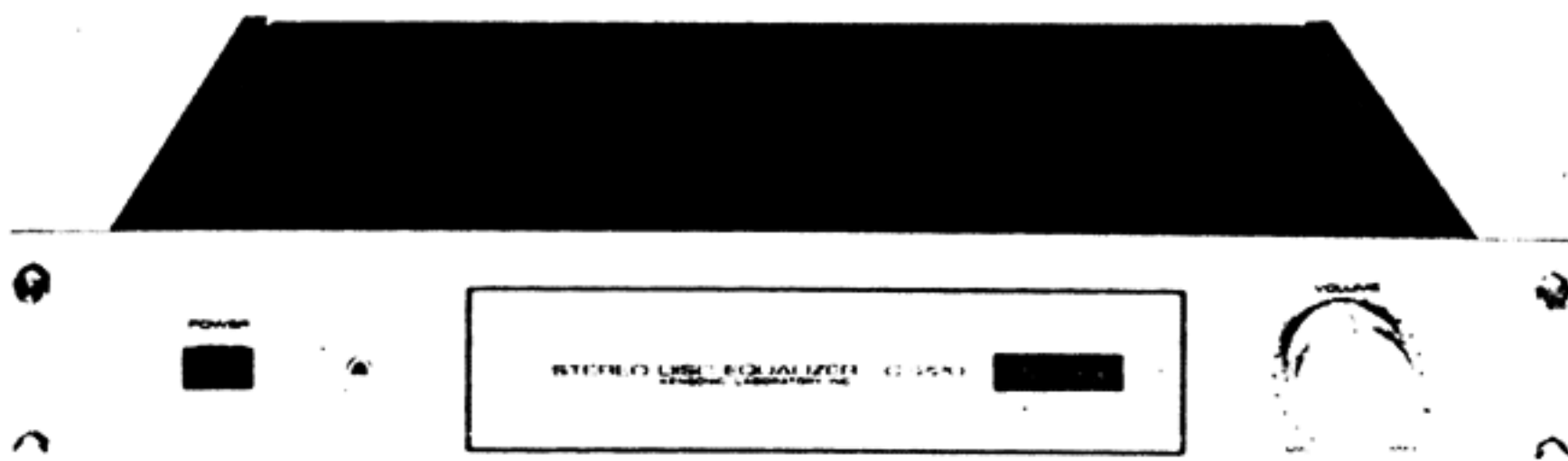
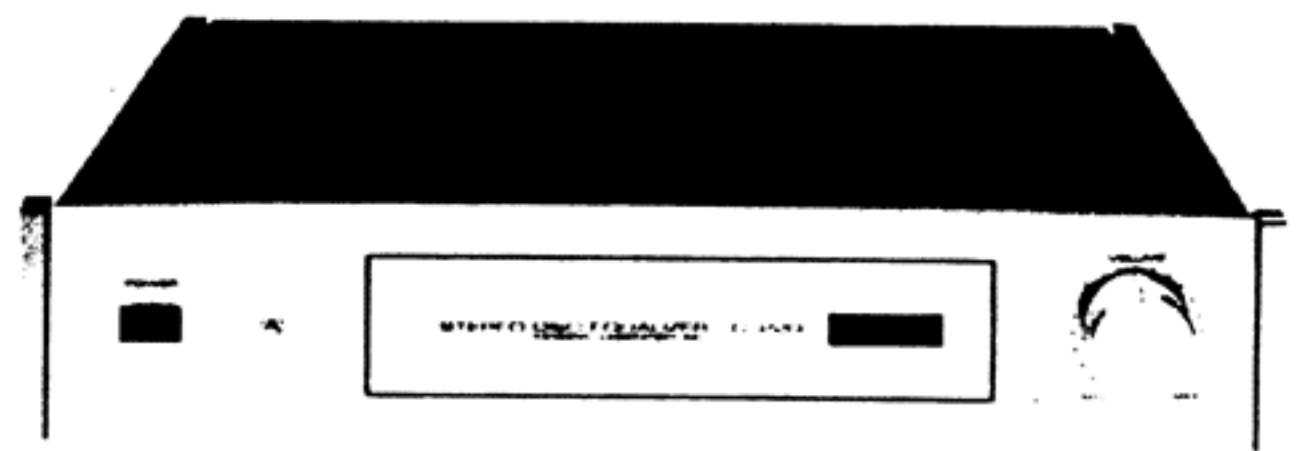
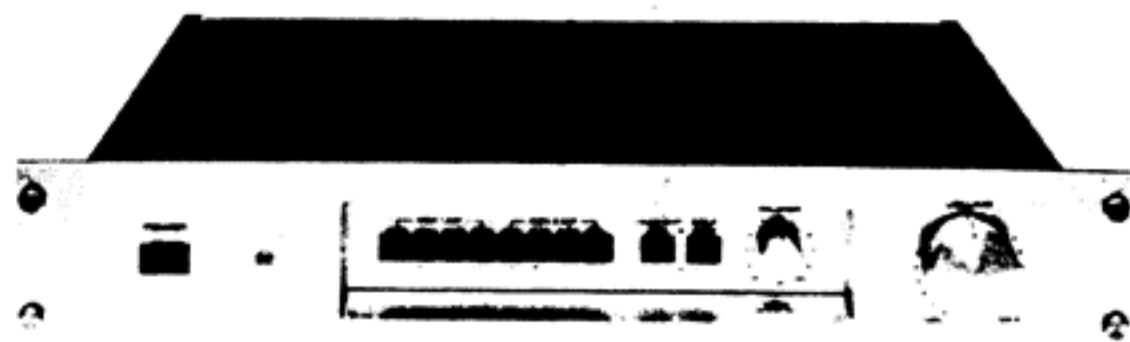


Accuphase

STEREO DISC EQUALIZER C-220



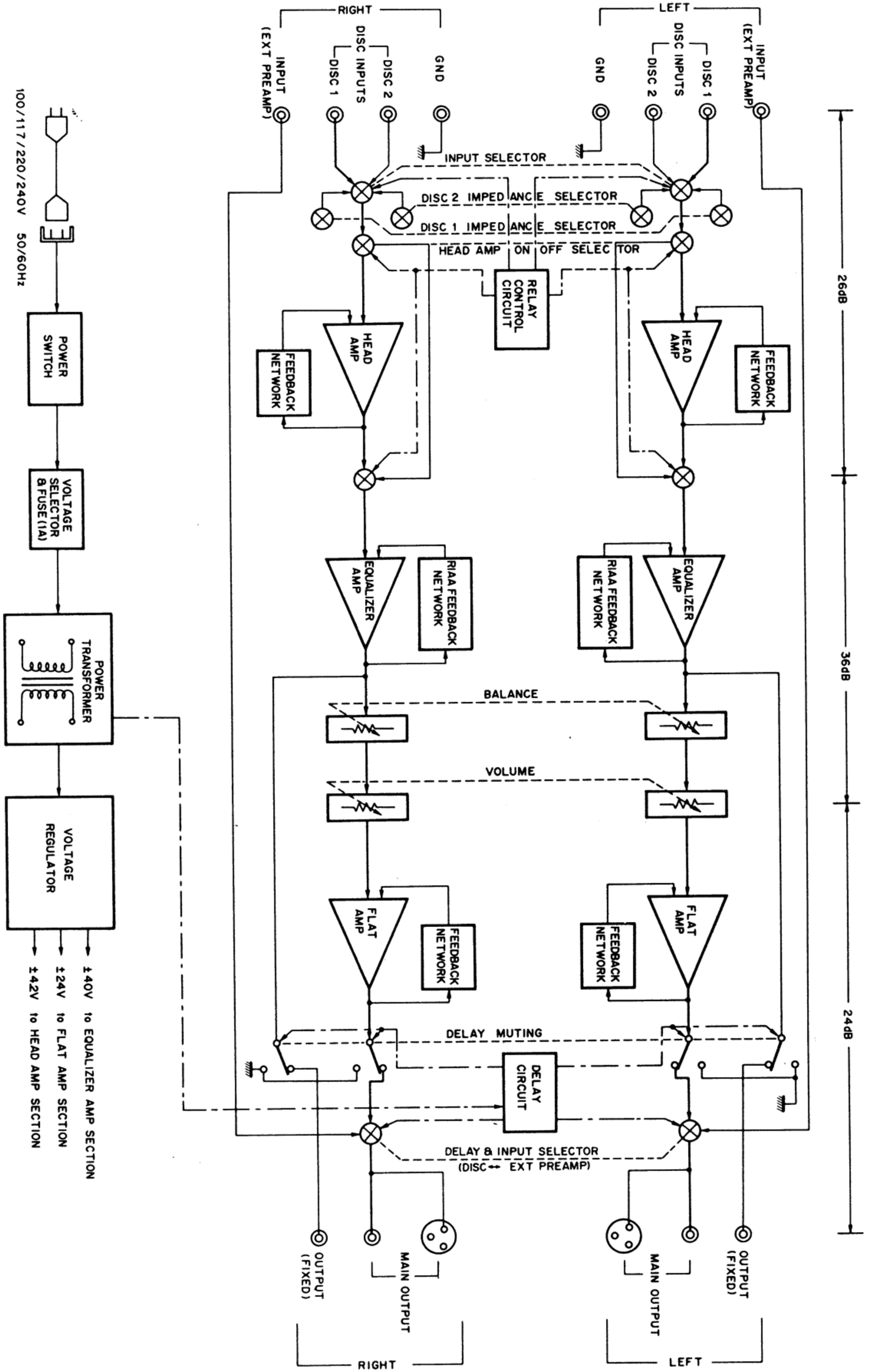
Service Information

STARTING WITH SERIAL NO. G7Y001

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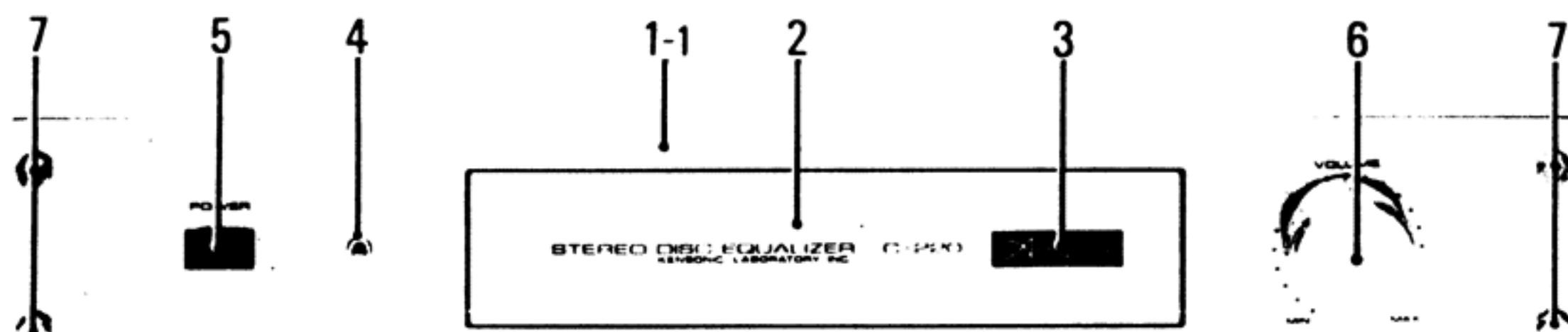
BLOCK DIAGRAM



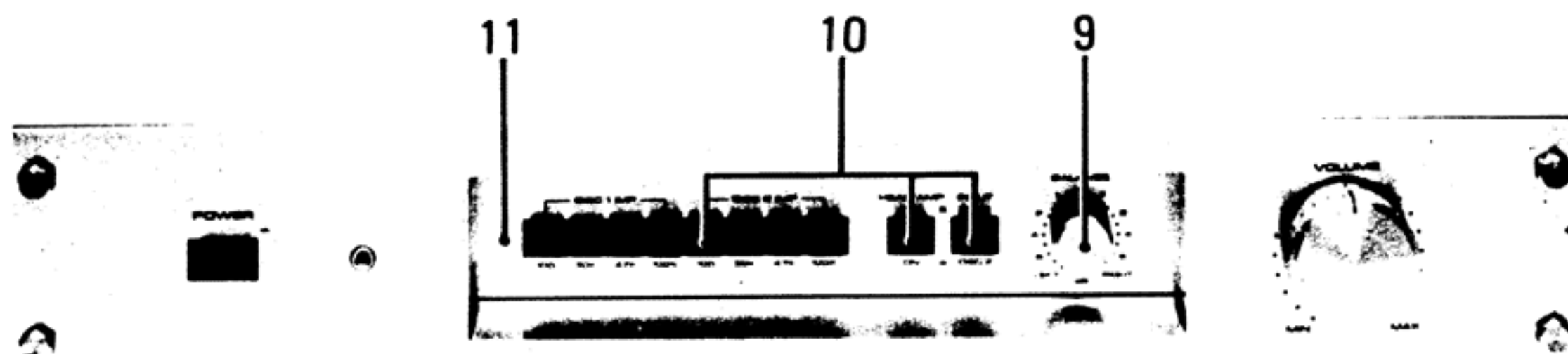
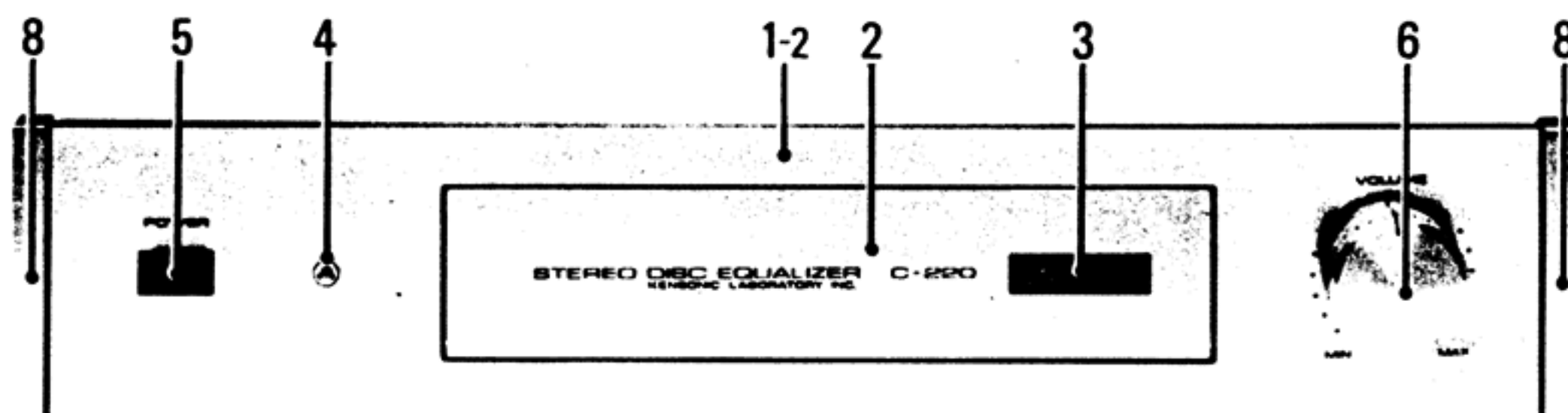
EXTERNAL VIEW

●FRONT

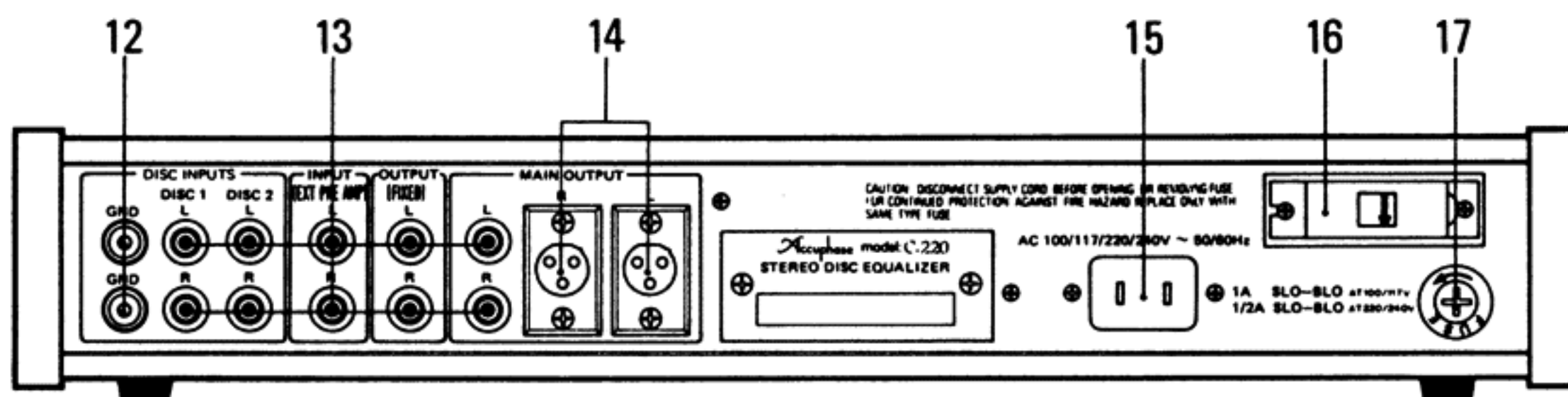
A TYPE



B TYPE



●REAR



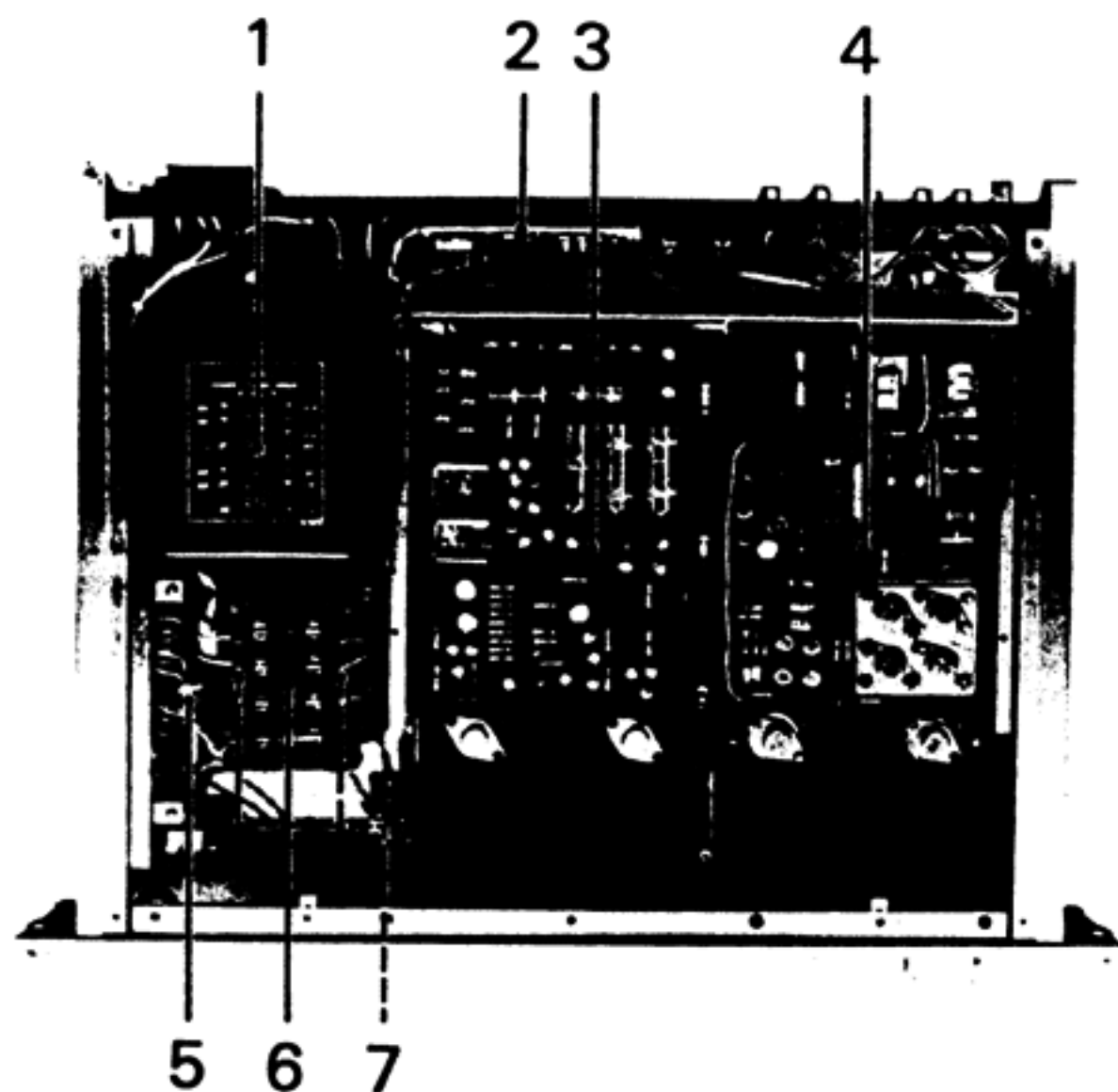
●PARTS LIST

No.	Description	Part No.	Remarks
1-1	A type Front Panel Complete Assembly	130-0011-00	See Exploded View.
1-2	B type Front Panel Complete Assembly	130-0012-00	
2	Hinged Subpanel	134-0007-03	included in Front Panel Assembly.
3	Badge (Name Plate)	182-1001-04	
4	Position Indicator Assembly	173-1201-14	
	Pilot Lamp	176-4402-00	8V/150mA
5	Push button (for POWER)	389-5001-14	See Exploded View No.18
6	Knob (for VOLUME)	381-4005-00	Variable Resistor: See Exploded View No.19
7	Hex Head Bolt	630-0601-04	6×12mm 4pcs.
	Hex Nut	633-2061-03	6mm dia. 4pcs.
8	Panel End Cap	132-0008-04	
	Panel End Spacer	250-1013-04	
9	Knob (for BALANCE)	381-1901-00	Variable Resistor: See Exploded View No.19

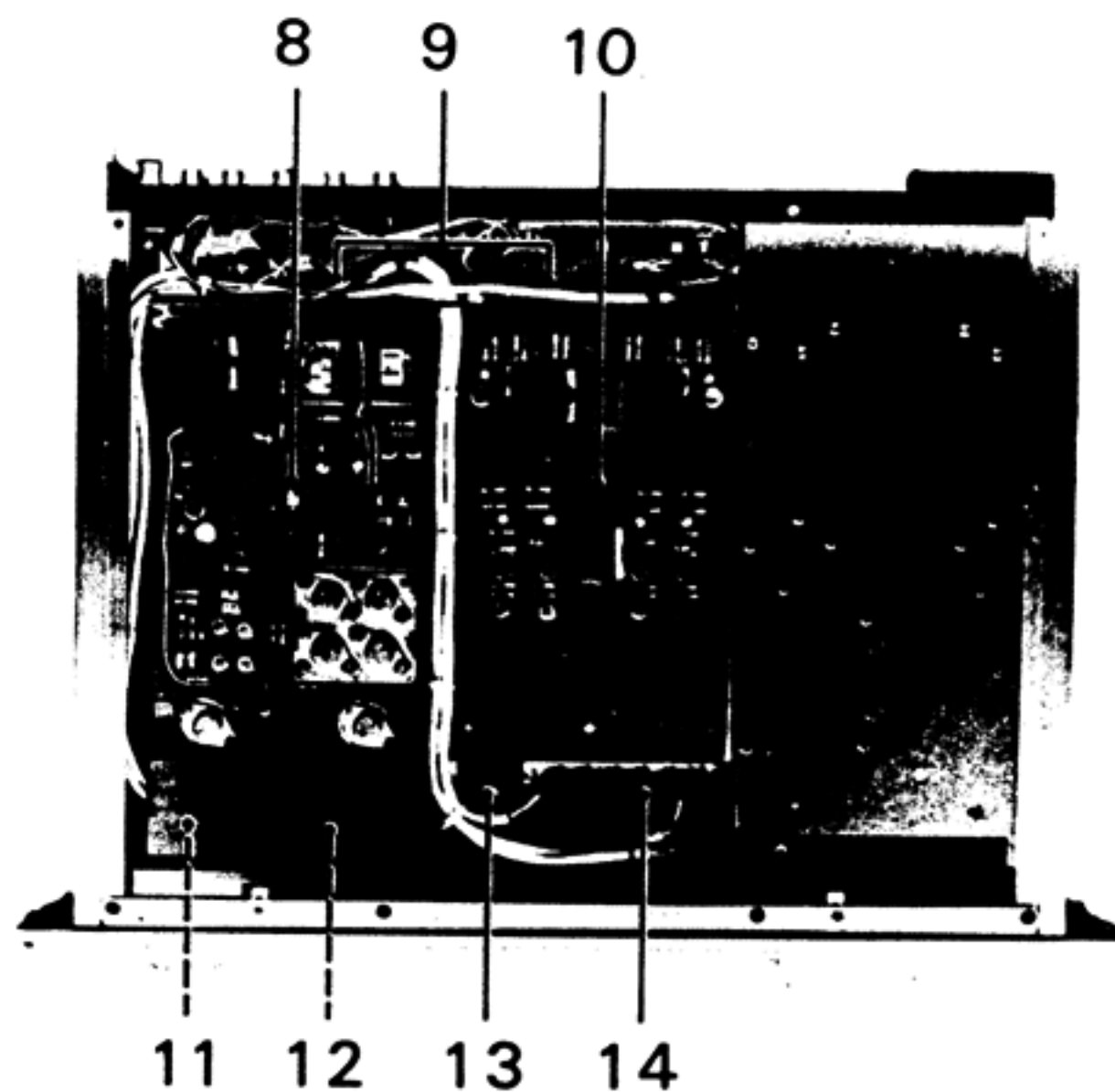
No.	Description	Part No.	Remarks
10	Push Button for HEAD AMP, INPUT DISC IMPEDANCE	389-5002-04	Push Switch: See Exploded View No.18
11	Sub Panel	134-0006-03	
12	Ground Terminal	314-0102-00	
13	Pin Jack	302-0103-00	
14	Cannon XLR type Connector	303-5301-00	
15	AC Connector Plug	301-3201-00	
16	Voltage Selector Jack	302-4001-00	
	Voltage Selector Plug	301-4001-00	
	Voltage Selector Fixed Bracket	248-0022-04	
17	Fuse Holder	306-0201-00	
	Fuse for at 100, 117V	310-1101-00	1A SLO-BLO
	Fuse for at 220, 240V	310-1051-00	1/2A SLO-BLO

INTERNAL VIEW

●TOP SIDE



●BOTTOM SIDE



●PARTS LIST

No.	Description	Part No.	Remarks
1	Power Transformer	510-1003-00	
2	DELAY Circuit Assembly	716-0022-00	
3	Power Supply Circuit Assembly	719-0009-00	
4	Equalizer Amp. Assembly	711-0003-00	Left channel
5	Relay Control Circuit Assembly	716-0023-00	
6	Fuse Circuit Assembly	716-0020-00	
7	Electrolytic Capacitor	CE62W1K222	2200 μ F/80WV C002, 003
8	Equalizer Amp. Assembly	711-0003-00	Right channel

No.	Description	Part No.	Remarks
9	Printed Board Connector	303-2203-00	22-pin
10	Flat Amp. Assembly	712-0003-00	
11	Variable Resistor (VOLUME)	573-2002-00	50k Ω A \times 2
12	Detent type Volume (BALANCE)	578-2211-00	50k Ω \times 2
13	Push-button Switch	354-2401-00	for HEAD AMP, INPUT
14	Push-button Switch Assembly	716-0021-00	
	Push-button Switch	354-8401-00	for DISC IMP.

EXPLODED VIEW

Fig. 1

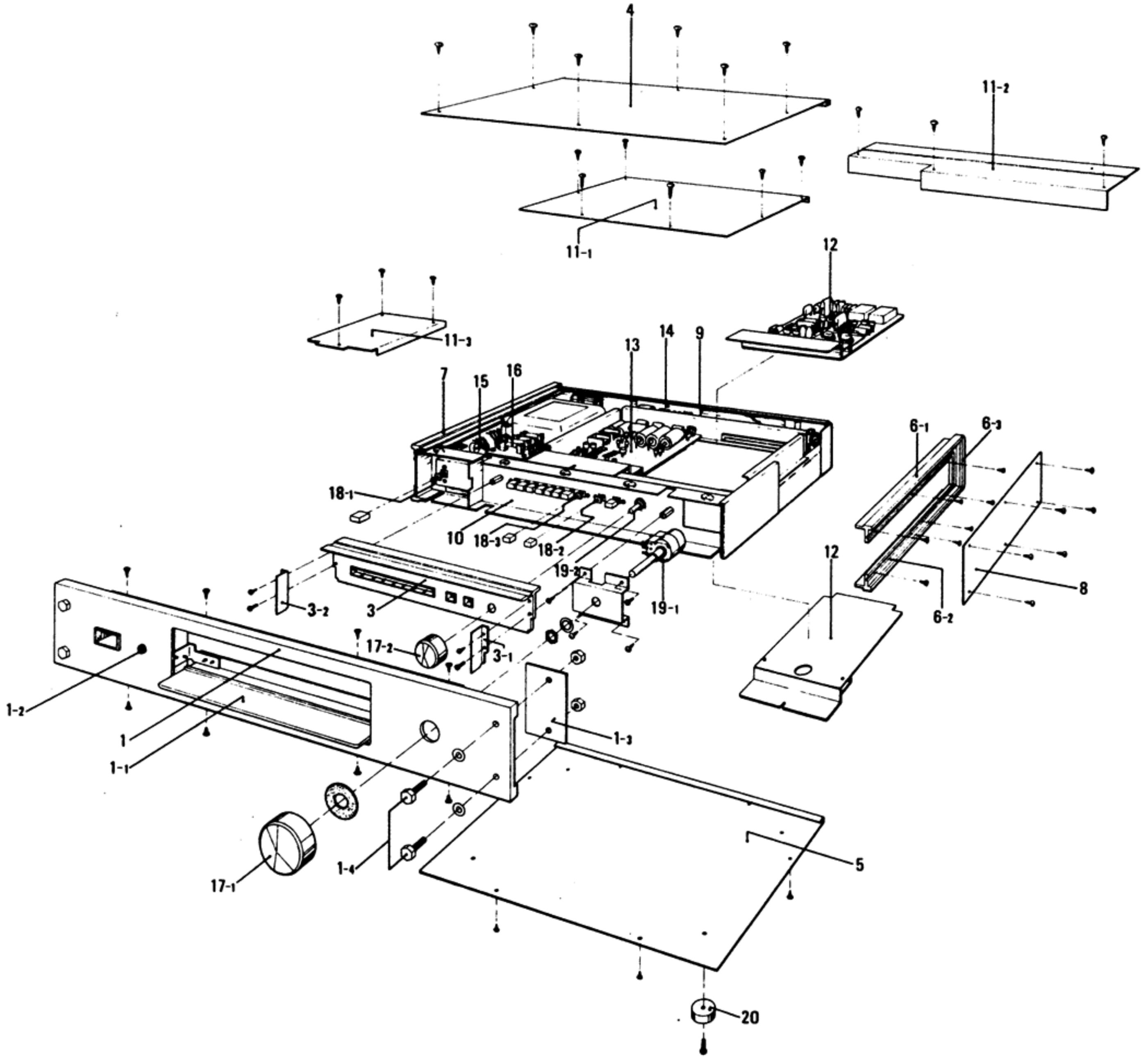
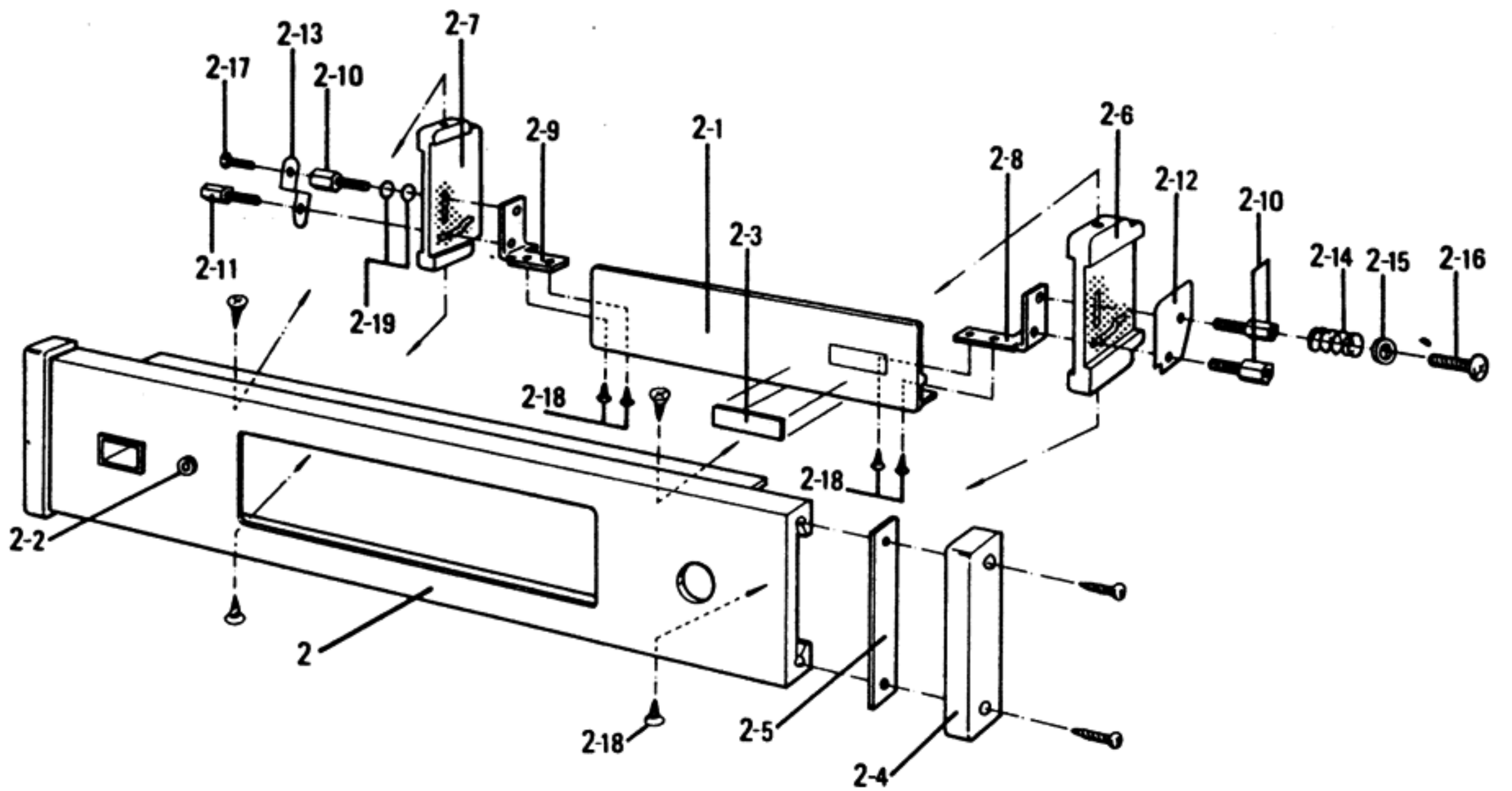


Fig. 2



●PARTS LIST

No.	Description	Part No.	Remarks
1	A type		
	Front Panel Complete Assembly	130-0011-00	with Hinged Subpanel Assembly complete.
	Front Panel Assembly	130-6011-02	without Hinged Subpanel
	Front Panel	131-0011-02	Front Panel only.
	Hinged Subpanel Assembly	134-6007-03	Subpanel Assembly only (2-1, 2-2, 2-6 ~ 2-19) Common for A & B type
1-1, 2-1	Hinged Subpanel	134-0007-03	
1-2, 2-2	Position Indicator Assembly	173-1201-14	
2-3	Badge (Name Plate)	182-1001-04	
1-3	Panel Spacer	250-1012-04	for A type
1-4	Hex Head Bolt	630-0601-04	6×12mm 4pcs.
	Hex Nut	633-2061-03	6mm dia. 4pcs.
	Nylon Washer	637-0061-59	for Hex Head Bolt.
	Push-button Frame	113-0010-04	for Power Sw.
2-6 ~ 19	Parts for Hinged Subpanel		included Hinged Subpanel Assembly Common for A & B type
2-6	R. Hinge Guide Plate	283-1002-04	
2-7	L. Hinge Guide Plate	283-1001-04	
2-8	R. Fixed Bracket	247-0084-04	
2-9	L. Fixed Bracket	247-0083-04	
2-10	Hex Shaft A	203-5005-04	
2-11	Hex Shaft B	203-5006-04	
2-12	Hinge Slide Plate	250-1023-04	
2-13	Leaf Spring	285-2002-04	
2-14	Coil Spring	285-1002-04	
2-15	Washer	318-1101-00	
2-16	Pan Head Screw	600-0306-01	3×6mm Pan Head ISO Metric
2-17	Pan Head Screw	613-0304-01	3×4mm Pan Head ISO Metric
2-18	Flat Head Screw	613-0306-04	3×6mm B type Self tapping
2-19	Nylon Washer	637-1031-50	
2	B type		
	Front Panel Complete Assembly	130-0012-00	Full assembled.
	Front Panel Assembly	130-6012-02	without Hinged Subpanel.
	Front Panel	131-0012-02	Front Panel only.
	Hinged Subpanel Assembly	134-6007-03	All parts for H-Subpanel
2-1, 1-1	Hinged Subpanel	134-0007-03	
2-2, 1-2	Position Indicator Assembly	173-1201-14	
2-3	Badge (Name Plate)	182-1001-04	
2-4	Panel End Cap	132-0008-04	
2-5	Panel End Spacer	250-1023-04	

No.	Description	Part No.	Remarks
	Pushbutton Frame	113-0010-04	for Power Sw.
2-6 ~ 19	Parts for Hinged Subpanel		included Hinged Subpanel Assembly. Common for A & B type
3	Sub Panel	134-0006-03	
3-1	R Angle Bracket	230-0040-04	
3-2	L Angle Bracket	230-0039-04	
	Pushbutton Frame	113-0011-04	for HEAD AMP, INPUT
	Pushbutton Frame	113-0012-03	for DISC IMP.
4	Top Plate	150-0004-12	
5	Bottom Plate	155-0006-02	
6-1	Frame A	112-1001-33	Common for Top & Bottom
6-2	Frame D	112-1004-33	Common for Top & Bottom
6-3	Frame G	112-1007-04	for Rear side
7	Frame A, D, G		
8	Side Plate	151-0004-13	
9	Rear Panel	135-0011-02	
10	Sub Chassis	111-1002-02	
11-1	Shield Cover for PC Board	230-0035-02	
11-2	Rear Shield Cover	230-0037-02	
11-3	Shield Cover	230-0036-02	
12	Equalizer Amp. Assembly	711-0003-00	
13	Power Supply Circuit Assembly	719-0009-00	
14	DELAY Circuit Assembly	716-0022-00	
15	Relay Control Circuit Assembly	716-0023-00	
16	Fuse Circuit Assembly	716-0020-00	
17	Knob for		
17-1	VOLUME	381-4005-00	
17-2	BALANCE	381-1901-00	
18	Push-button Switch for		
18-1	POWER	354-1003-00	Single
18-2	HEAD AMP, INPUT	354-2401-00	2-gang
18-3	DISC IMP	354-8401-00	8-gang
19	Variable Resistor for		
19-1	VOLUME	573-2002-00	50kΩ × 2
	Fixed Bracket	247-0081-04	
19-2	BALANCE	578-2211-00	50kΩ × 2 (Detent type)
20	Foot	238-0001-14	

HOW TO ASSEMBLE THE FRONT SUB PANEL

Figure 2 shows in detail the parts that make up the Hinged Subpanel, and their relation to each other.

Parts 2-1, 2-3, 2-6 to 2-19 (Hinged Subpanel Assembly) are required to install the Hinged Subpanel. Before starting be sure that you have all these parts, and assemble as follows. A word of caution. Be very careful not to scratch the panel during assembly.

- Step 1. Attach Badge (2-3) to Hinged Subpanel (2-1) with two-sided tape or bonding adhesive.
Be careful not to move the Badge before the adhesive has hardened.
2. Attach L, R brackets (2-8 and 2-9) to Hinged Subpanel with 3x6mm flat head screws (2-18).
3. Attach L and R Hinge Guide Plates (2-6, 2-7) to Front Panel (2) with 3x6mm Flat head screws (2-18).
4. Now grease surfaces of the Hinge Guide Plates at three places where they will come in contact with 2-8, 2-9 and 2-12. See Fig. 2.

5. Place Panel face down on a soft surface and after positioning the Hinged Subpanel in place, attach as follows.
6. Insert two Nylon Washers (2-19) into Hex Shaft A (2-10) and then insert Hex L Hinge Guide Plate (2-7) and tighten against Bracket (2-9).
7. In the same way, insert Leaf Spring (2-13) into Hex Shaft B (2-11) and then insert Shaft into Hinge Guide Plate (2-7). Tighten shaft against Bracket (2-9).
8. Insert Pan head screw (2-17) into above Leaf Spring (2-13) and tighten against Hex shaft (2-10).
9. Now attach Right Hinge Guide Plate (2-6) as follows. Insert two Hex shafts (2-10) into Hinge Slide Plate (2-12) and Hinge Guide Plate (2-6) and tighten the shafts against Bracket (2-8).
10. Insert Washer (2-15) and Coil Spring (2-14) into Pan head screw (2-16) and tighten screw to the upper hex shaft (2-10).
11. Check installation for fitness and good hinge action.

● MISCELLANEOUS

No.	Description	Part No.	Remarks
	Screws for		
	Top Plate	614-0308-02	3x8mm (3) 6pcs.
	Nylon Washer	637-1031-50	6pcs.
	Side Plate	614-0306-02	3x6mm (3) 12pcs.
	Bottom Plate	614-0306-02	3x6mm (3) 6pcs.
	Front Panel	613-0306-02	3x6mm (2) 8pcs.
	Hex Head Bolt	630-0601-04	6x12mm 4pcs.
	Hex Nut	633-2061-03	6mm dia. 4pcs.
	Nylon Washer	637-0061-59	for Hex Bolt 4pcs.
	End Cap	617-0312-04	3x12mm (4) 4pcs.
	Shield Cover(for PC Board)	614-0310-02	3x10mm (3) 2pcs.
		614-0306-02	3x6mm (3) 6pcs.
	Rear Shield Cover	614-0306-02	3x6mm (3) 3pcs.
	Shield Cover	614-0306-02	3x6mm (3) 3pcs.
	Equalizer Amp. PC Board	614-0306-02	3x6mm (3) 1pc.
	Power Supply PC Board	614-0306-02	3x6mm (3) 1pc.
	Flat Amp. PC Board	600-0304-01	3x4mm (1) 2pcs.
	Foot	600-0414-01	4x14mm (1) 4pcs.
			Notes,
			(1) Pan Head ISO Metric Screw.
			(2) Flat Head B Type Self Tapping Screw.
			(3) Binding Head B Type Self Tapping Screw.
			(4) Pan Head B Type Self Tapping Screw.

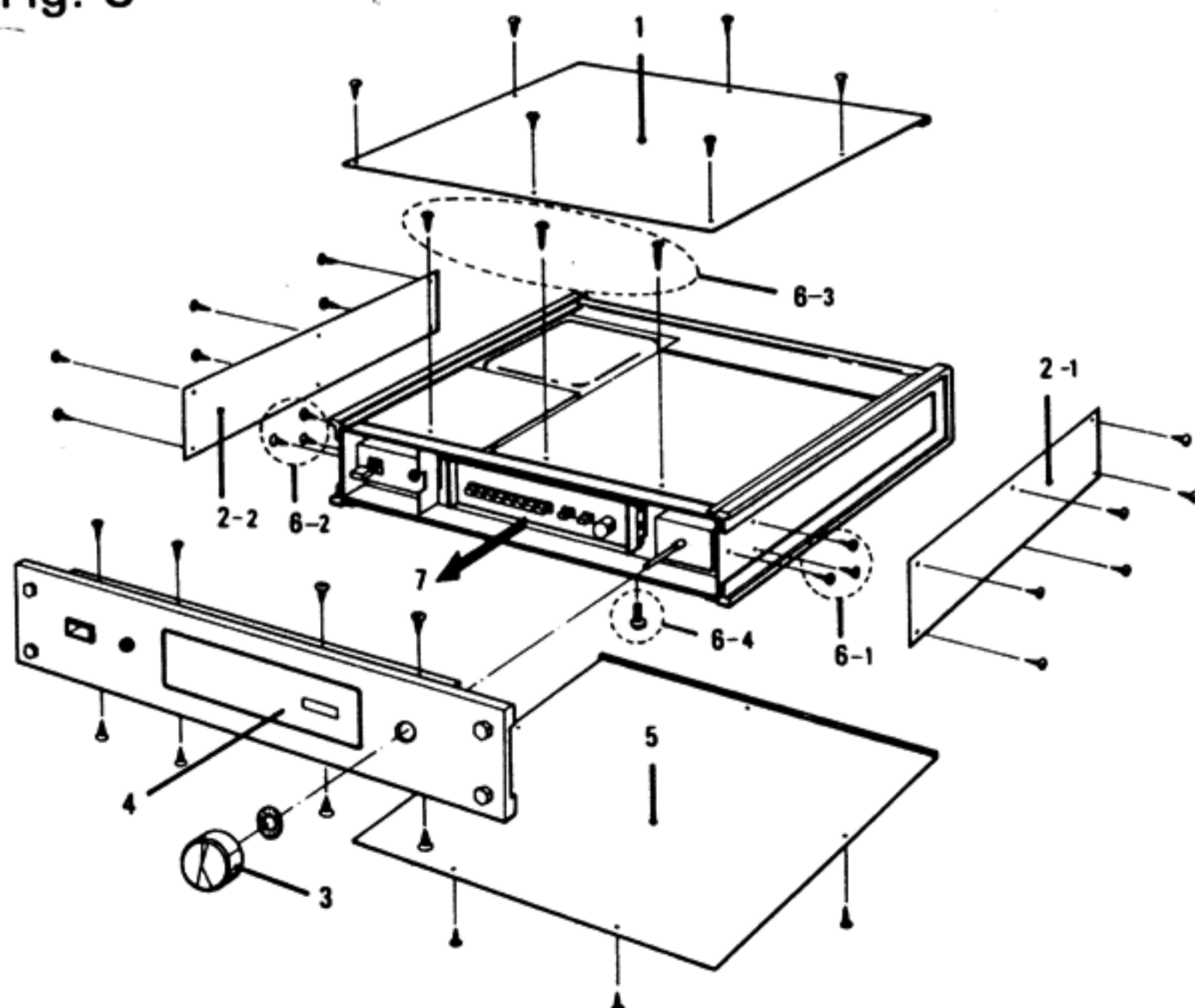
No.	Description	Part No.	Remarks
R001,002	Carbon Film Resistor	RD142HA223J	22k Ω \pm 5% \pm W
R101,201	Metal Film Resistor	RN142HA3321F	3.32k Ω \pm 1% \pm W
C001	Mylar Film Capacitor	CQ93M2E103MUL	0.01 μ F \pm 20% 250WV
C002,003	Electrolytic Capacitor	CE62W1K222	2200 μ F 80WV
	Pilot Lamp	176-4402-00	8V/150mA
	Fuse for at 100,117V	310-1101-00	1A SLO-BLO
	for at 220,240V	310-1051-00	1/2A SLO-BLO
	Accessories		
	Power Supply Cord	680-1201-00	2-Conductor
	Power Supply Cord for UL, CSA	680-2201-00	2-Conductor
	Power Supply Cord for CEE, VDE etc.	680-3401-00	3-Conductor
	4-pin Stereo Cord	685-0402-00	
	Owner's Manual	820-2013-00	
	Shipping Carton		
	Outer Carton	800-0015-04	
	Inner Carton	801-0015-04	
	Side Protector	803-0028-02	
	For Power Supply Cord	801-0010-03	
	Plastic Cover	810-4538-04	

DIFFERENCE BETWEEN "A" AND "B" TYPES

The front panel of the C-220 differ as shown in Figures 1 and 2, and requires different installation attention respectively as follows.

Refer to Figure and the following steps when it becomes necessary to change from "A" to "B" type, or vice versa.

Fig. 3



How to change from "A" to "B" type.

- Step
1. Remove Top Plate (6 screws).
 2. Remove L, R Side Plates. (2-₁, 2-₂, 6 screws)
 3. Remove the Volume Knob. (3)
 4. Remove Front Panel. (4 topside screws, 4 bottomsides screws)
 5. Remove Bottom Plate (6 screws).
 6. Remove Sub-chassis locking screws. (3 screws respectively from left and right, 3 screws from topside and 1 screw from the bottom. 6-₁, 6-₂, 6-₃ and 6-₄)
 7. Pull Subchassis forward about 4 mm.
(Note: To change "B" type to "A" type, push subchassis back the same distance.)
 8. Attach subchassis with screws that were removed in step 6.
 9. Attach "B" type Front Panel Assembly.
 10. Attach Bottom, Sub and Top Plates and Volume Knob.

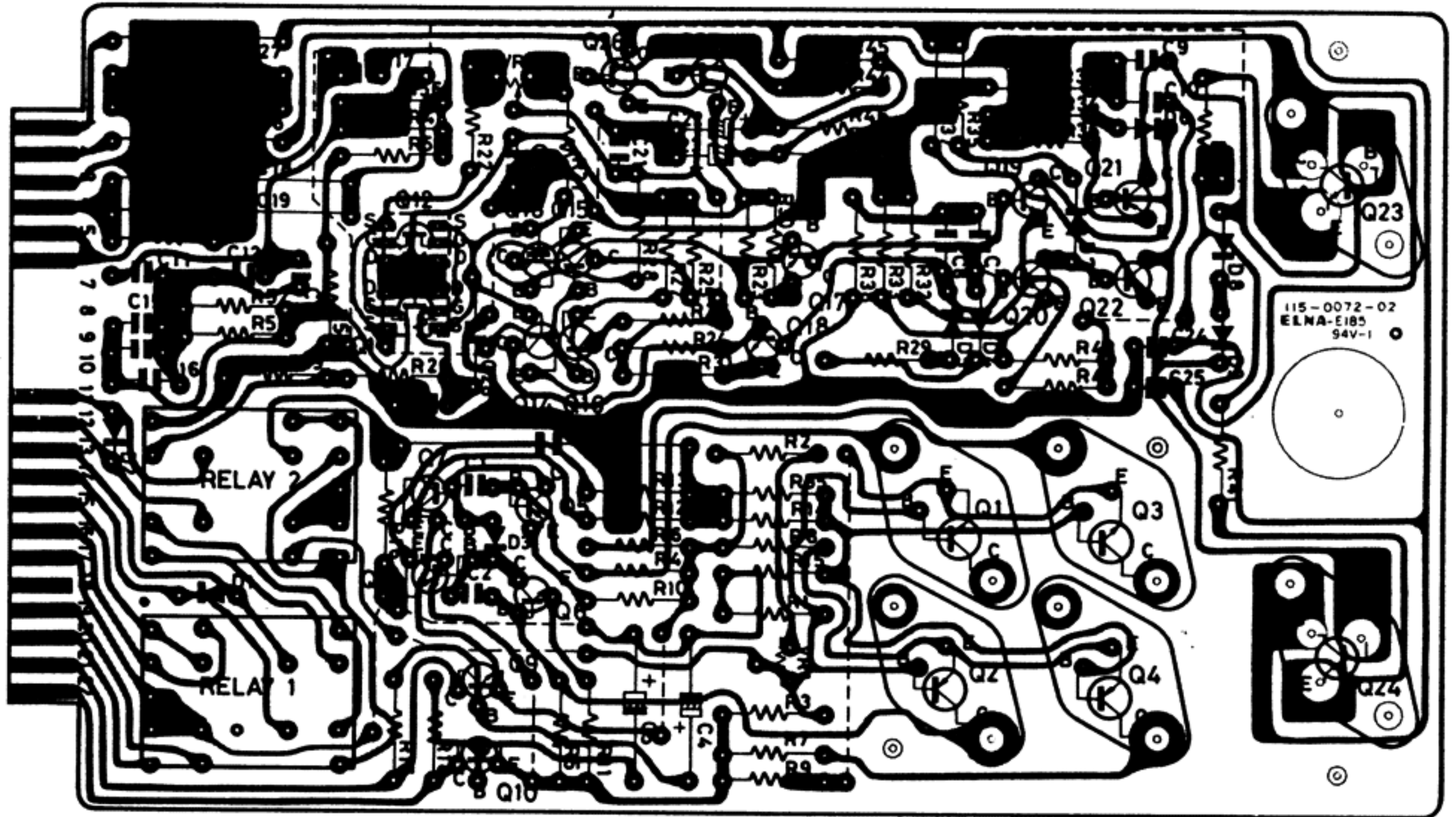
To change "B" type to "A" type

Follow exactly the same procedure for every step, except for step 7 where the subchassis is pushed in 4 mm instead of being pulled forward the same distance.

EQUALIZER AMP. ASSEMBLY (711-0003-00)

●PRINTED CIRCUIT BOARD

*Printed circuit board as seen from the reverse side.



●PARTS LIST

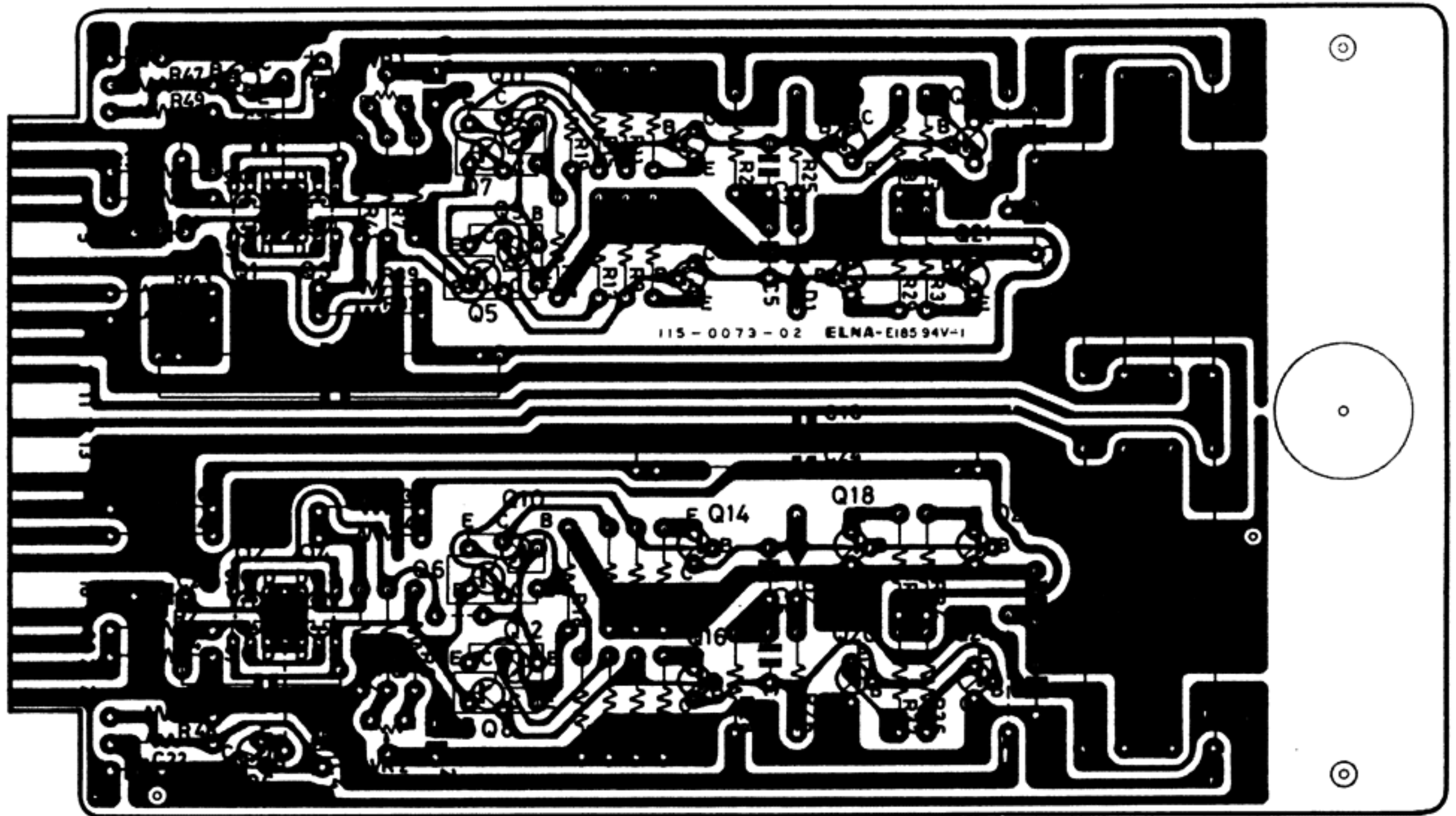
No.	Description	Part No.	Remarks
	Transistor Socket	300-0101-00	
	Transistor Insulator	318-0101-00	
RELAY1, 2	Relay	362-2403-00	
Q1, 3, 23	Transistor	FT1551N	
Q2, 4, 24	Transistor	FT2551P	
Q5	Transistor	2SA856A-BL	
Q6	Transistor	2SC1746A-BL	
Q7	Transistor	2SC1735-E	
Q8	Transistor	2SA850-E	
Q9	Transistor	2SC1982-1-2	
Q10	Transistor	2SA922-1-2	
Q11, 12	Dual FET	2SK97	
Q13, 15, 18	Transistor	2SC2129-H	
Q14, 16, 17	Transistor	2SA906-H	
Q19, 22, 25	Transistor	2SC805A-1-3	
Q20, 21, 26	Transistor	2SA923-1-3	
D1, 2, 4-7	Silicon Diode	1S1555	
D3	Varistor	STV-4H	
D8	Varistor	SV-02	
D9	Varistor	STV-3H-0	
VR1	Potentiometer	582-0141-00	10kΩ B
VR2	Potentiometer	582-0131-00	1kΩ B
R1	Metal Film Resistor	RN142HA1000F	100Ω ± 1% ½W
R2	Metal Film Resistor	RN142HA2212F	22.1kΩ ± 1% ½W
R3	Metal Film Resistor	RN142HA3012F	30.1kΩ ± 1% ½W
R4, 5, 6, 7	Metal Film Resistor	RN142HA2670F	267Ω ± 1% ½W
R8, 9	Metal Film Resistor	RN142HA3920F	392Ω ± 1% ½W
R10, 11	Metal Film Resistor	RN142HA51R1F	51.1Ω ± 1% ½W
R12, 13, 14	Metal Film Resistor	RN142HA20R0F	20.0Ω ± 1% ½W
R15	Metal Film Resistor	RN143AA1R0G	1.0Ω ± 2% 1 W
R16, 19	Carbon Film Resistor	RD142HA104J	100kΩ ± 5% ½W
R17, 18	Carbon Film Resistor	RD142HA471J	470Ω ± 5% ½W
R20	Carbon Film Resistor	RD142HA100J	10Ω ± 5% ½W
R21, 22	Metal Film Resistor	RN142HA3321F	3.32kΩ ± 1% ½W

No.	Description	Part No.	Remarks
R23, 24, 25	Metal Film Resistor	RN142HA4991F	4.99kΩ ± 1% ½W
R26	Metal Film Resistor	RN142HA1182F	11.8kΩ ± 1% ½W
R27, 28	Metal Film Resistor	RN142HA3241F	3.24kΩ ± 1% ½W
R29, 51	Metal Film Resistor	RN142HA6190F	619Ω ± 1% ½W
R30, 31	Metal Film Resistor	RN142HA1621F	1.62kΩ ± 1% ½W
R32, 33	Metal Film Resistor	RD142HA331J	330Ω ± 5% ½W
R34, 35	Carbon Film Resistor	RD142HA151J	150Ω ± 5% ½W
R36, 37	Carbon Film Resistor	RD142HA910J	91Ω ± 5% ½W
R38, 39	Carbon Film Resistor	RD142HA5R6J	5.6Ω ± 5% ½W
R40, 41	Carbon Film Resistor	RD142HA683J	68kΩ ± 5% ½W
R42, 43	Carbon Film Resistor	RN142HA2492F	24.9kΩ ± 1% ½W
R44, 45	Metal Film Resistor	RN142HA1472F	14.7kΩ ± 1% ½W
R46, 47	Metal Film Resistor	RN142HA2430F	243Ω ± 1% ½W
R48	Metal Film Resistor	RN142HA1822F	18.2kΩ ± 1% ½W
R50	Metal Film Resistor	RN142HA2671F	2.67kΩ ± 1% ½W
R52	Metal Film Resistor	RN142HA30R1F	30.1Ω ± 1% ½W
R53	Metal Film Resistor	RD142HA513J	51kΩ ± 5% ½W
R54	Carbon Film Resistor	RD142HA391J	390Ω ± 5% ½W
R55	Carbon Film Resistor	RN142HA2210F	221Ω ± 1% ½W
R56	Metal Film Resistor		
C1, 2, 9, 10	Polystyrene Film Capacitor	CQ08S2B391J	390pF ± 5% 125WV
C3, 18	Metallized Film Capacitor	CQ91M2A225K	2.2μF ± 10% 100WV
C4, 5	Electrolytic Capacitor	CE02W0J101	100μF 6.3WV
C6	Polystyrene Film Capacitor	CQ08S2B220F	22pF ± 1% 125WV
C7, 8	Polystyrene Film Capacitor	CQ08S2B911J	910pF ± 5% 125WV
C11	High Precision Film Capacitor	HPF1H913F	0.091μF ± 1% 50WV
C12	High Precision Film Capacitor	HPF1H683F	0.068μF ± 1% 50WV
C13	High Precision Film Capacitor	HPF1H102F	0.001μF ± 1% 50WV
C14	High Precision Film Capacitor	HPF1H223F	0.022μF ± 1% 50WV
C15	High Precision Film Capacitor	HPF1H333F	0.033μF ± 1% 50WV
C16	Polystyrene Film Capacitor	CQ08S2B471G	470pF ± 2% 125WV
C17	High Precision Film Capacitor	HPF1H562F	5600pF ± 1% 50WV
C19, 29	Polystyrene Film Capacitor	CQ08S2B682G	6800pF ± 2% 125WV
C20, 21	Ceramic Capacitor	CK45F1H103Z	0.01μF +80% -20% 50WV
C22, 23	Electrolytic Capacitor	CE04W1E470	47μF 25WV
C24, 25	Ceramic Capacitor	CK45F2H103P	0.01μF +100% -0% 500WV
C26, 27	Electrolytic Capacitor	559-0005-00	47μF 63WV
C28	Polystyrene Film Capacitor	CQ08S2B241G	240pF ± 2% 125WV

FLAT AMP. ASSEMBLY (712-0003-00)

●PRINTED CIRCUIT BOARD

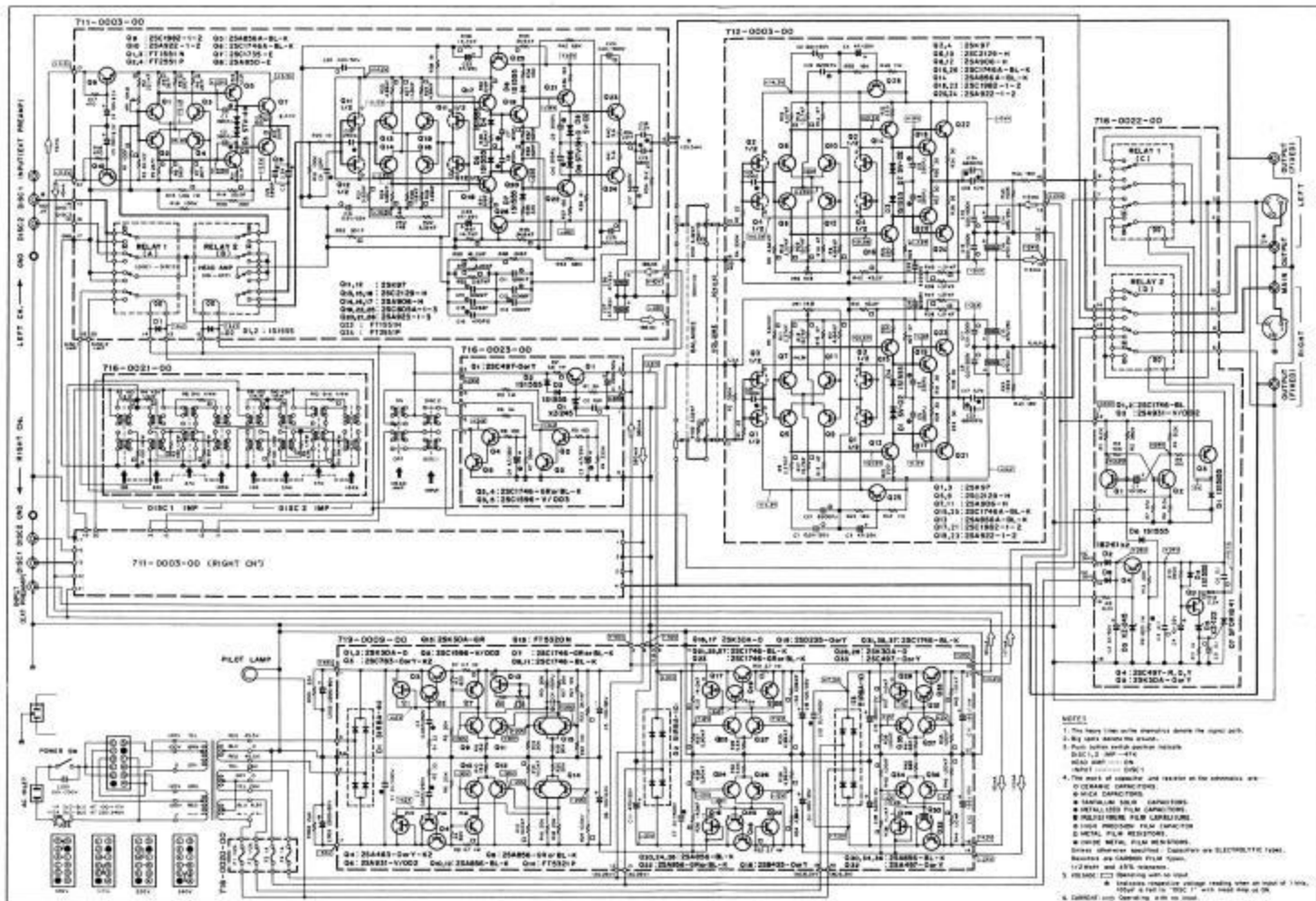
*Printed circuit board as seen from the reverse side.



●PARTS LIST

No.	Description	Part No.	Remarks	No.	Description	Part No.	Remarks
Q1, 2, 3, 4	Dual FET	2SK97		R29-36	Carbon Film Resistor	RD142HA300J	30Ω ± 5% ½W
Q5, 6, 9, 10	Transistor	2SC2129-H		R37, 38	Metal Film Resistor	RN142HA1371F	1.37kΩ ± 1% ½W
Q7, 8, 11, 12	Transistor	2SA906-H		R39, 40	Metal Film Resistor	RN142HA1211F	1.21kΩ ± 1% ½W
Q13, 14	Transistor	2SA856A-BL		R41, 42	Metal Film Resistor	RN142HA43R2F	43.2Ω ± 1% ½W
Q15, 16, 25, 26	Transistor	2SC1746A-BL		R43, 44	Carbon Film Resistor	RD142HA181J	180Ω ± 5% ½W
Q17, 18, 21, 22	Transistor	2SC1982-1-2		R45, 46	Carbon Film Resistor	RD142HA104J	100kΩ ± 5% ½W
Q19, 20, 23, 24	Transistor	2SA922-1-2		R47, 48	Carbon Film Resistor	RD142HA113J	11kΩ ± 5% ½W
D1, 2	Varistor	SV-02		R49, 50	Carbon Film Resistor	RD142HA183J	18kΩ ± 5% ½W
D3, 4	Silicium Diode	1S1555		C1, 2	Ceramic Capacitor	CK45F1H103Z	0.01μF +80% -20% 50WV
VR1, 2	Potentiometer	582-0131-00	1kΩ B	C3, 4	Electrolytic Capacitor	CE04W1E470	47μF 25WV
R1, 2	Carbon Film Resistor	RD142HA220J	22Ω ± 5% ½W	C5, 6, 7, 8	Polystyrene Film Capacitor	CQ08S2B331J	330pF ± 5% 125WV
R3, 4	Carbon Film Resistor	RD142HA334J	330kΩ ± 5% ½W	C9, 10, 11, 12	Ceramic Capacitor	CK45F2H103P	0.01μF +100% -0% 500WV
R5, 6, 7, 8	Metal Film Resistor	RN142HA4641F	4.64kΩ ± 1% ½W	C13, 14, 15, 16	Electrolytic Capacitor	559-0004-00	470μF 25WV
R9, 10, 11, 12	Metal Film Resistor	RN142HA2371F	2.37kΩ ± 1% ½W	C17, 18	Metallized Film Capacitor	CQ91M2A475K	4.7μF ± 10% 100WV
R13, 14, 15 16, 27, 28	Carbon Film Resistor	RD142HA470J	47Ω ± 5% ½W	C19, 20, 21, 22	High Precision Film Capacitor	CQ92PP1H822J	8200pF ± 5% 50WV
R17, 18, 19, 20	Metal Film Resistor	RN142HA1372F	13.7kΩ ± 1% ½W	C23, 24	Polystyrene Film Capacitor	CQ08S2B682G	6800pF ± 2% 125WV
R21, 22, 23, 24	Carbon Film Resistor	RD142HA221J	220Ω ± 5% ½W	C25, 26	Polystyrene Film Capacitor	CQ08S2B112G	1100pF ± 2% 125WV

C-220 SCHEMATIC DIAGRAM



- NOTES**
- The heavy lines within diagrams denote the signal path.
 - By zero assume no ground.
 - Parts having similar number designations:
 - DISC 1 IMP - 47K
 - HEAD AMP - 100K
 - AMP 1 - 100K
 - The units of impedance and resistor in the schematics are:
 - C CERAMIC CAPACITORS
 - D mica CAPACITORS
 - M METALLIC FILM CAPACITORS
 - P METALLIC FILM CAPACITORS
 - R RESISTORS, FILM CAPACITORS
 - S FUSED RESISTORS, FILM CAPACITORS
 - W METAL FILM RESISTORS
 - W MICA METAL FILM RESISTORS
 - W WIREWOUND RESISTORS
 - W WIREWOUND RESISTORS AND ELECTROLYTIC CAPACITORS
 - 1/2 watt and 5% tolerance.
 - 25C1902-1-2 Resistor with 10 ohm.
 - Indicates operating voltage reading when on input of 1 volt.
 - 25A256A-BL-K - 250K 1/2 watt metal disk on lead.
 - CAPACITOR AND RESISTOR WITH NO VALUE.

Indicated values of parts in the schematic diagram may be changed in case of performance improvement.