DENON

Hi-Fi Component/Amplifier

SERVICE MANUAL

MODEL PMA-501

SOLID STATE STEREO INTEGRATED AMPLIFIER

TABLE OF CONTENTS

NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

TYPE: All silicon transistor stereo pre-main amplifier

MAIN AMPLIFIER SECTION

Dynamic Power: 125 watt r.m.s. at each channel (IHF, at 4 ohm)
80 watt r.m.s. at each channel (IHF, at 8 ohm)

Rated Output (Both channels driven)

20 Hz to 20 kHz: 65 watt r.m.s. at each channel (T.H.D. 0.05%, at 4 ohm)

20 Hz to 20 kHz: 50 watt r.m.s. at each channel (T.H.D. 0.05%, at 8 ohm)

Harmonic Distortion: Less than 0.05% (at rated output and 20 Hz to 20 kHz)

Intermodulation Distortion

60 Hz/7kHz (4 : 1): Less than 0.05% (at equivalent rated output)
Less than 0.02% (at equivalent 1 watt output)

Power Bandwidth: 5 Hz to 50 kHz (Both channels driven at 8 ohm)

Frequency Response: 5 Hz to 100 kHz (at 0.5 watt output, −1 dB)

Input Sensitivity: 1 volt r.m.s.

Input Impedance: 50 k ohm, ±10% (20 Hz to 20 kHz)

Output Impedance: Less than 0.16 ohm

Signal to Noise Ratio: 116 dB (IHF, A net work at input terminal shorted)

PRE AMPLIFIER SECTION

Max. Output/Impedance: 10 volt/50 k ohm

Rated Output: 1 volt r.m.s.

Total Harmonic Distortion: Less than 0.008% (at rated output, 1 kHz)

Equalizer Amplifier Output (REC. Output)

Maximum Output: 14 volt r.m.s./50 k ohm

Rated Output: 150 mVr.m.s.

Input Sensitivity/Impedance

PHONO: 2.5 mVr.m.s./50 k ohm

TUNER: 150 mVr.m.s./85 k ohm

AUX. TAPE-1, 2: 150 mVr.m.s./85 k ohm

RIAA Deviation: ±0.2 dB (20 Hz to 20 kHz)

Maximum Allowable Input

PHONO: 230 mVr.m.s. (1 kHz)

Signal to Noise Ratio (IHF, A network)

PHONO: Better than 76 dB (Input terminals shorted)

TUNER: Better than 100 dB (Input terminals shorted)

AUX: Better than 100 dB (Input terminals shorted)

TAPE-1, 2: Better than 100 dB (Input terminals shorted)

Tone Control Section Characteristic: 5 Hz to 100 kHz +0 dB, −1 dB (at DEFEAT position)

Tone Control Section Variable Range

BASS: 50 Hz ±10 dB

TREBLE: 20 kHz ±10 dB

Low Filter Characteristic: 20 Hz 6 dB/oct

Muting Level: −10 dB, −20 dB

Phono Crosstalk Control

Maximum Allowable Input: 14 volt

Frequency Response: 10 Hz to 100 kHz +0 dB, −1 dB

OVERALL CHARACTERISTIC

Crosstalk PHONO→SPEAKER OUT: Less than −75 dB (20 Hz to 1 kHz)
Less than −60 dB (20 kHz)

Transmission Characteristic PHONO→SPEAKER OUT: 20 Hz to 20 kHz (±0.3 dB)

POWER SOURCE AND POWER CONSUMPTION: AC 220/240 volt 50 Hz, 360 watt (at max. output power)
AC 120 volt 60 Hz, 190 watt (at 1/3 output power)

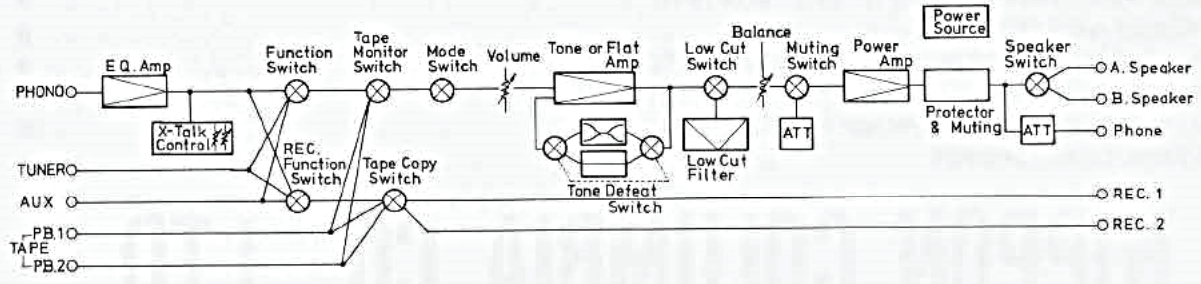
AC OUTLET: UNSWITCHED 150 watt MAX.
SWITCHED 250 watt MAX.
(for U.S.A. and Canada)

DIMENSIONS: 16-59/64" (430 mm)W × 5-25/32" (146 mm)H × 12-13/64" (321 mm)D

WEIGHT: 28.6 lbs. (13 kg)

These contents are subject to alteration without prior notice.

BLOCK DIAGRAM



DISASSEMBLY INSTRUCTIONS

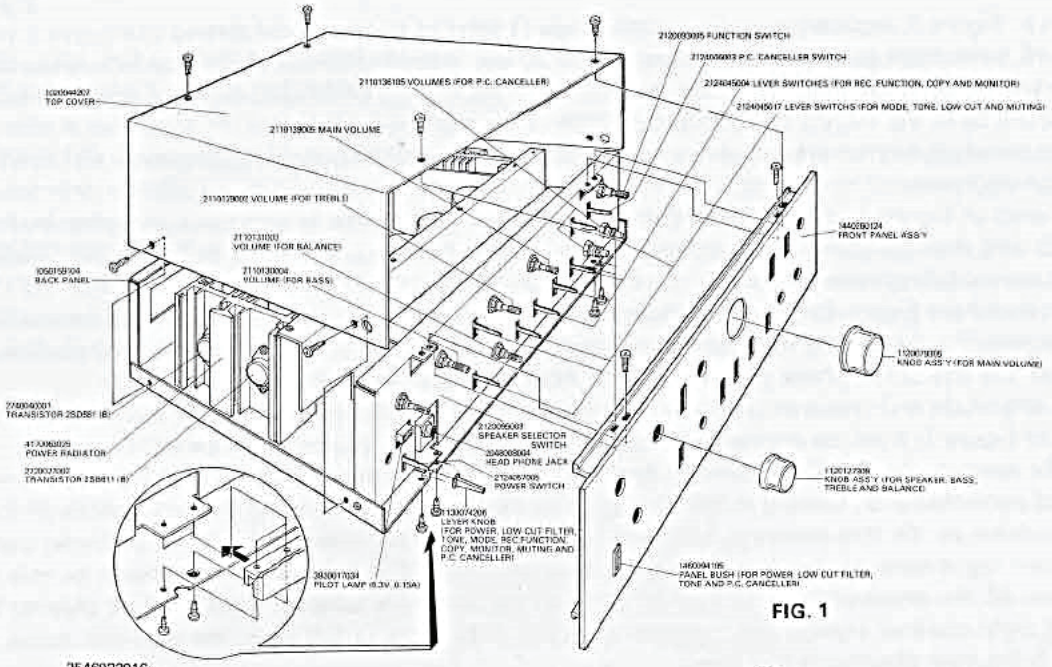


FIG. 1

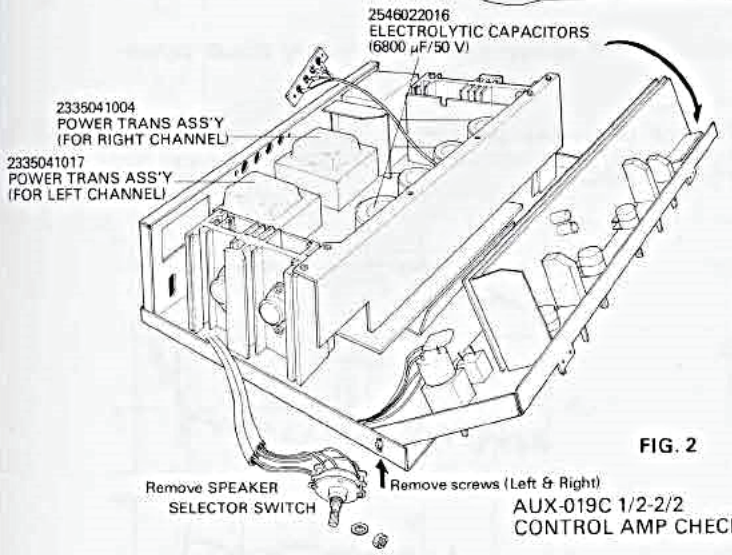


FIG. 2

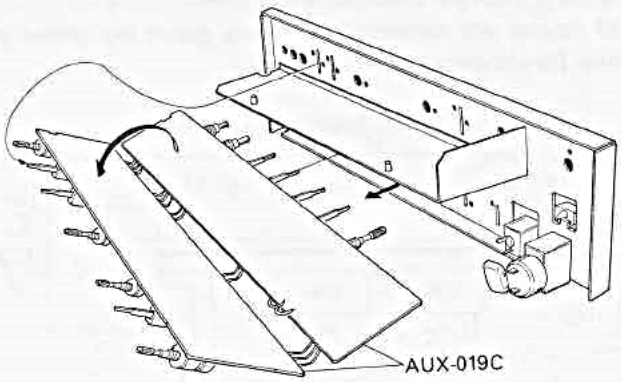


FIG. 3

AUX-019C 1/2-2/2
CONTROL AMP CHECK

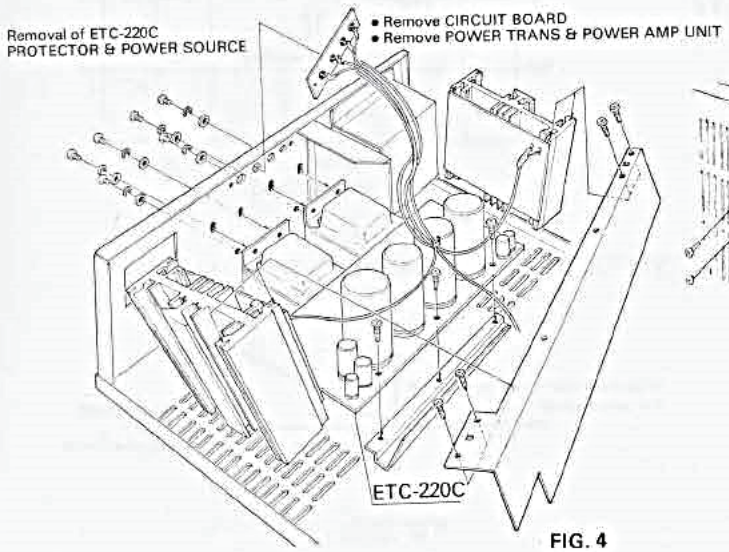


FIG. 4

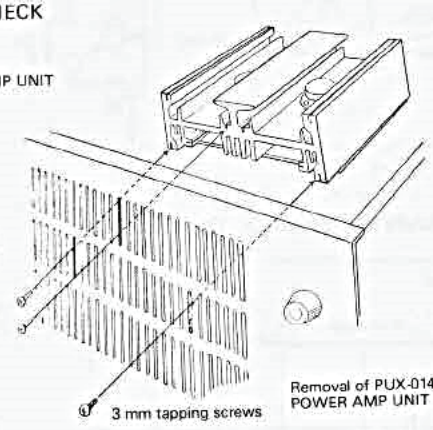


FIG. 5

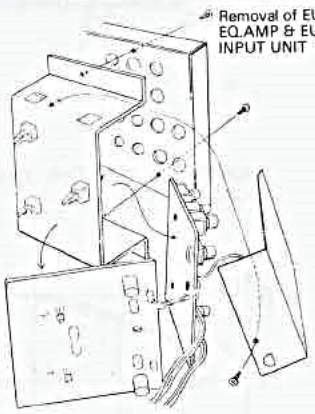


FIG. 6

NEWLY DEVELOPED P.C.C. EQUIPMENT (Phono Crosstalk Canceller)

As shown in Figure 3, separation in the middle range (1 kHz) of conventional pickup cartridges is normally between 20 to 25 dB, with high quality units between 25 to 30 dB. If we study the phase characteristics of crosstalk here, there will be instances where the phase difference is in the vicinity of 0° and, depending on the cartridge, there are those that will be in the vicinity of 180°.

To remove crosstalk from this type of cartridge system in the amplifier, the following type of circuit calculations will probably be necessary.

1. As shown in Figure 1, if the size of the signal portion (amplitude) is appropriately split, or if its polarity is inverted, and the crosstalk portion added, improvements from about −6 dB to 10 dB are possible by cancelling out this crosstalk portion electrically. (Refer Vector in Figure 4)
2. As is clear from Figure 2, the crosstalk portion that cannot be removed with the calculations in Paragraph 1 is an element (Figure 4) with a phase difference of 90° (or −90°) in relation to the signal portion. To remove this portion, the use of the phase shifter shown in Figure 1 will be very effective.

Since the amplitude and phase of crosstalk in cartridge systems differ from left to right and right to left respectively, as shown in Figure 1, it will be necessary to adjust both channels in the crosstalk canceller.

To actually operate the P.C.C equipment, first play back the test record containing the left channel signals only, then adjust potentiometer, located in the first stage in Figure 1, while listening to the crosstalk in the right channel, until it is minimum. (In this instance, playback sound from the left channel must be balanced out or the speaker disconnected by means of the speaker changeover switch). Next, adjust potentiometer in the following stage (output side of the phase shifter) to further diminish the crosstalk portion. Finally, while playing back the record containing right channel signals only, reduce crosstalk from right to left as in the previous steps. (Stop playback sound from the right channel in this case).

It is of course not necessary to worry about the phase of crosstalk in this adjustment but to simply adjust potentiometer for minimum crosstalk level.

CROSSTALK CANCELLER NETWORK

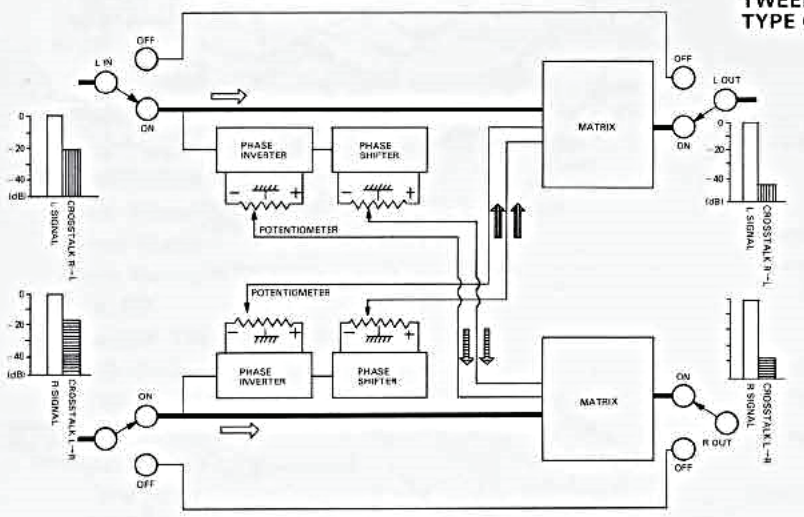


Fig. 1

EXAMPLE OF THE CHARACTERISTICS OF A REFERENCE CARTRIDGE

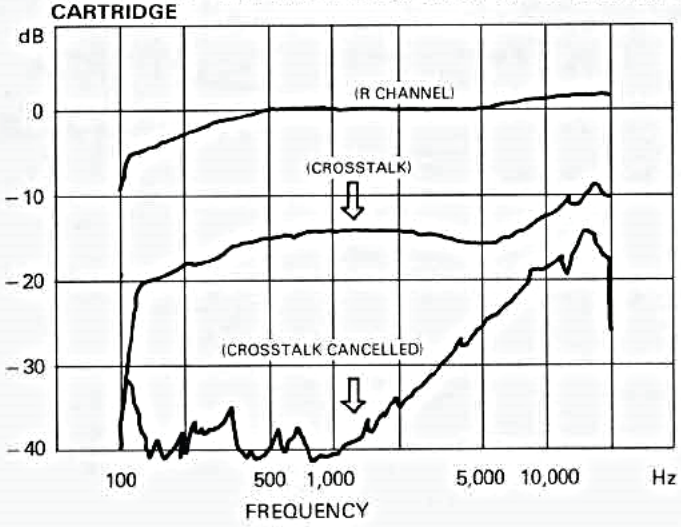


Fig. 2

EXAMPLE OF PHASE DIFFERENCE CHARACTERISTICS BETWEEN THE SIGNAL AND CROSSTALK PORTION OF THE MM TYPE CARTRIDGE.

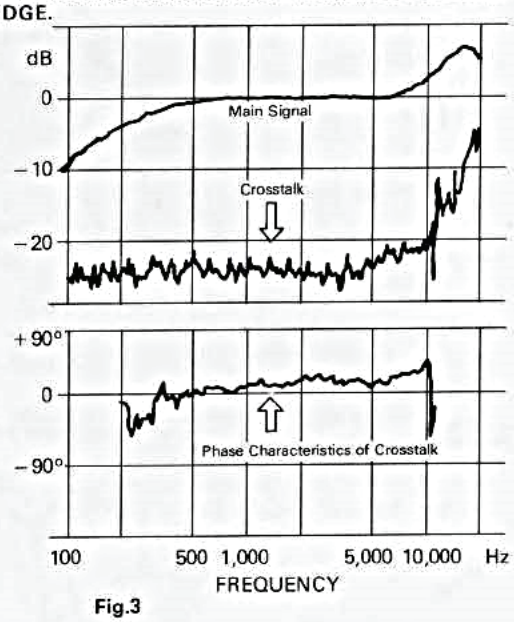
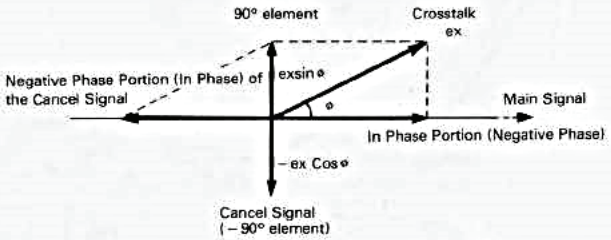


Fig.3

VECTOR DIAGRAM OF CROSSTALK CANCELLATIONS



In many cartridges, as $|\phi|<30°$, $ex \sin|\phi| < |ex|/2$. It can be seen that it will be possible to cancel out in excess of 6 dB by adding the inphase (negative phase) element.

Fig. 4

ADJUSTMENTS AND MEASUREMENTS PROCEDURES

INSTRUCTIONS FOR ADJUSTING IDLING ELECTRIC CURRENT OF POWER AMPLIFIER UNIT

To ensure accurate adjustment of the idling electric current of the PMA-501 Power Amplifier Unit (PUX-014C), and adjustment should be performed in the manner indicated below:

1. MEASURING INSTRUMENTS

DC Ammeter (100 mA)

2. CONNECTION

Connect one DC ammeter to the left and one to the right channel of the Fuse holders of Protector & Power Source Unit (ETC-220C). See Fig-1.

3. PROCEDURES

A. Set the power supply at pre-set voltages of the PMA-501 (AC 220/240V: 50Hz), (120V: 60Hz FOR USA, CANADA)

B. Wait three minutes after Power switch is ON.

C. Adjustment the idling electric current to 40 $^{+30}_{-10}$ mA on the DC ammeter by rotating the VR (470 ohm) of Power Amplifier Unit (PUX-014C). See Fig-2.

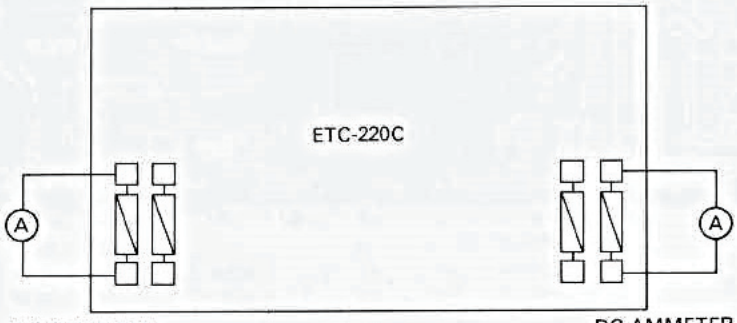


Fig-1

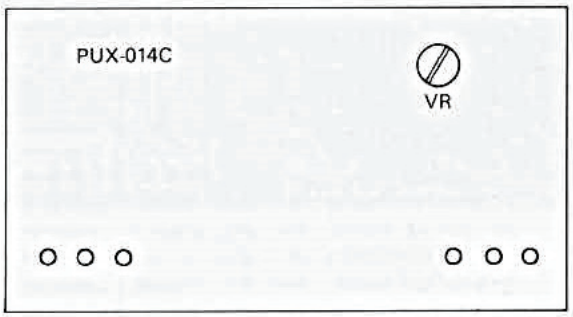
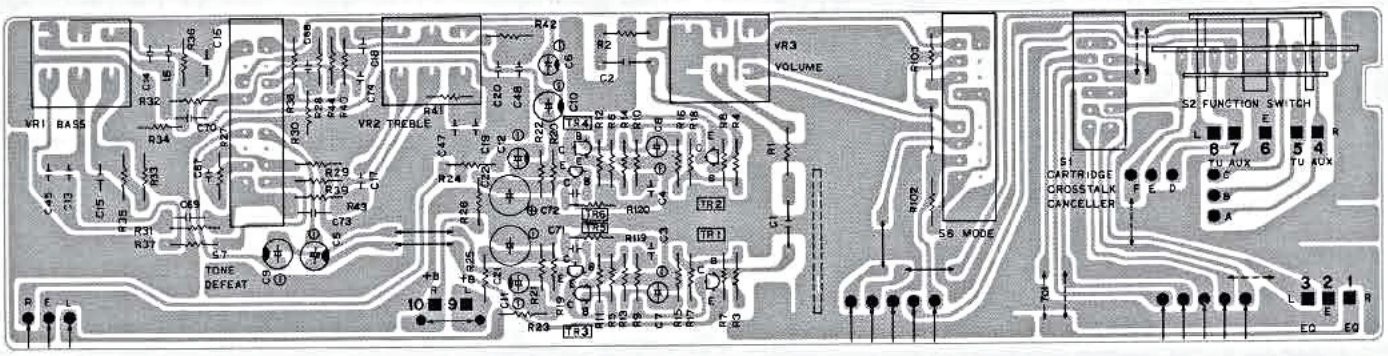


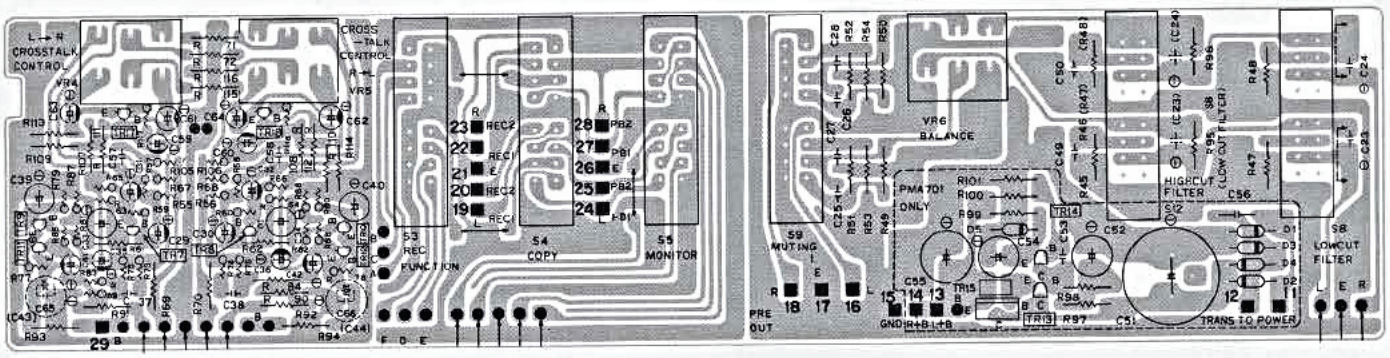
Fig-2

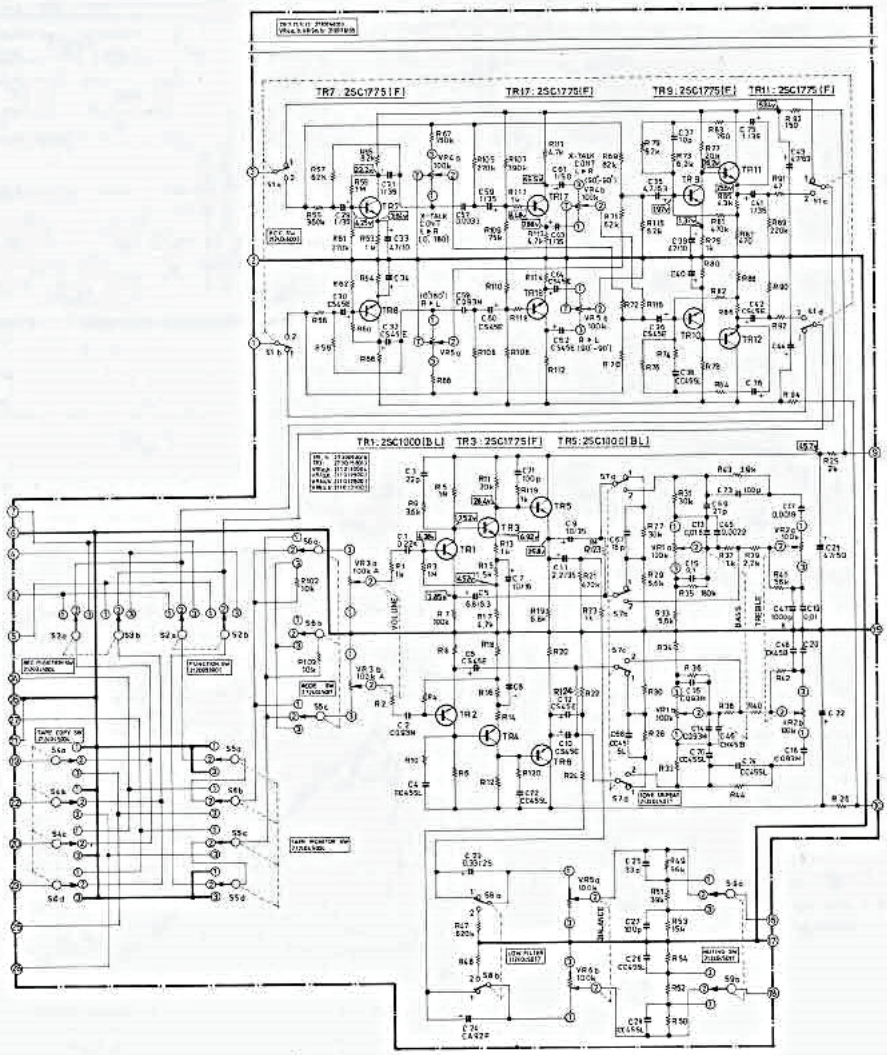
PRINTED CIRCUIT BOARD PATTERNS, CIRCUIT DIAGRAMS AND PARTS LIST

CONTROL AMP UNIT AUX-019C 1/2



AUX-019C 2/2



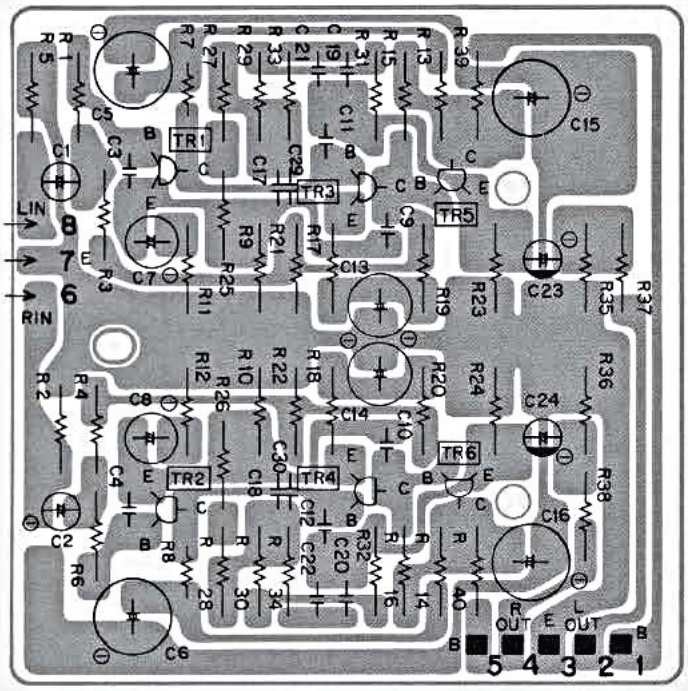


CONTROL AMP UNIT AUX-019C

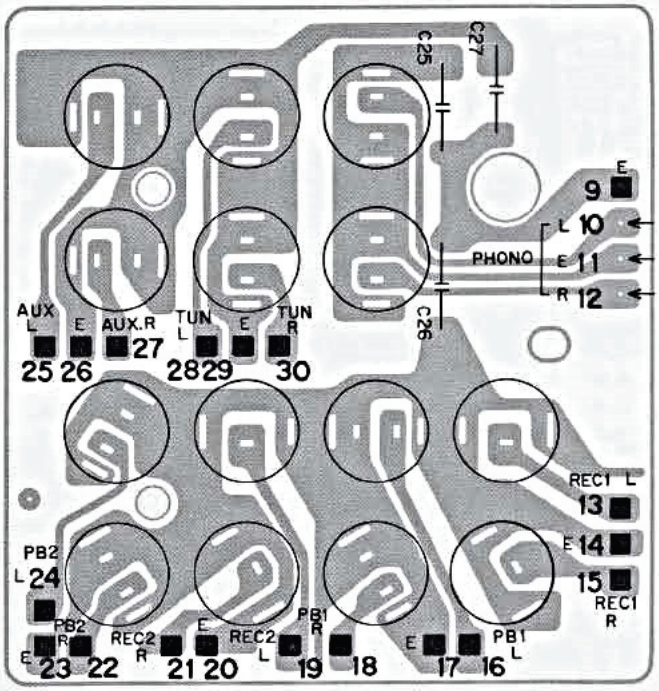
Ref. No.	Part No.	Descriptions
	SEMICONDUCTORS	
TR1,2,5,6	2730098018	2SC1000 (BL) TRANSISTOR
3, 4, 7, 8	2730158013	2SC1775 (F) TRANSISTOR
9, 10, 11,		
12, 17, 18		
	CAPACITORS	
C1, 2	2551088003	0.22μF ±10% 50V PLASTIC FILM CAPACITOR
3, 4	2533611003	22pF ±5% 50V CERAMIC CAPACITOR
5, 6	2541002002	6.8μF ±20% 6.3V SOLID TANTALUM CAPACITOR
7, 8	2544015009	10μF 16V ELECTROLYTIC CAPACITOR
9, 10	2541043003	10μF ±20% 35V SOLID TANTALUM CAPACITOR
11, 12	2541031002	2.2μF ±20% 35V SOLID TANTALUM CAPACITOR
13, 14	2551121054	0.018μF ±5% 50V PLASTIC FILM CAPACITOR
15, 16	2551122040	0.1μF ±5% 50V PLASTIC FILM CAPACITOR
17, 18	2551120039	0.0018μF ±5% 50V PLASTIC FILM CAPACITOR
19, 20	2551121025	0.01μF ±5% 50% PLASTIC FILM CAPACITOR
21, 22	2544049004	47μF 50V ELECTROLYTIC CAPACITOR
23, 24	2545017006	0.33μF ±20% 25V ALUMINUME CAPACITOR
25, 26	2533615009	33pF ±5% 50V CERAMIC CAPACITOR
27, 28, 71,	2533627000	100pF ±5% 50V CERAMIC CAPACITOR
72, 73, 74		
29, 30, 31,	2541029001	1μF ±20% 35V SOLID TANTALUM CAPACITOR
32, 59, 60,		
63, 64		
33, 34, 39,	2544009002	47μF 10V ELECTROLYTIC CAPACITOR
40		
35, 36	2541001003	4.7μF ±20% 6.3V SOLID TANTALUM CAPACITOR
37, 38	2533603008	10pF 50V CERAMIC CAPACITOR
41, 42	2541035008	1μF ±20% 35V SOLID TANTALUM CAPACITOR
43, 44	2544059023	47μF 63V ELECTROLYTIC CAPACITOR
45, 46	2531006005	0.0022μF 50V CERAMIC CAPACITOR
47, 48	2531004007	0.001μF 50V CERAMIC CAPACITOR
57, 58	2551120068	0.0033μF 50V PLASTIC FILM CAPACITOR
61, 62	2541044002	1μF 50V SOLID TANTALUM CAPACITOR
65, 66		
67, 68	2533609002	18pF ±5% 50V CERAMIC CAPACITOR
69, 70	2533613001	27μF ±5% 50V CERAMIC CAPACITOR
75, 76	2544044009	1μF 50V ELECTROLYTIC CAPACITOR
	RESISTORS	
R1,2,13,14,	2410314009	1 Kohm ±5% 1/4W CARBON FILM RESISTOR
23,24,37,		
38,119,120		
3, 4, 5, 6	2410765001	1 Mohm ±5% 1/4W CARBON FILM RESISTOR
7, 8	2410362006	100 kohm ±5% 1/4W CARBON FILM RESISTOR
9, 10	2410327009	3.6 kohm ±5% 1/4W CARBON FILM RESISTOR
11, 12	2410345007	20 kohm ±5% 1/4W CARBON FILM RESISTOR
15, 16	2410318005	1.5 kohm ±5% 1/4W CARBON FILM RESISTOR
17,18,111,	2410330009	4.7 kohm ±5% 1/4W CARBON FILM RESISTOR
112,113,114		
19, 20	2410334005	6.8 kohm ±5% 1/4W CARBON FILM RESISTOR
21, 22	2410378003	470 kohm ±5% 1/4W CARBON FILM RESISTOR

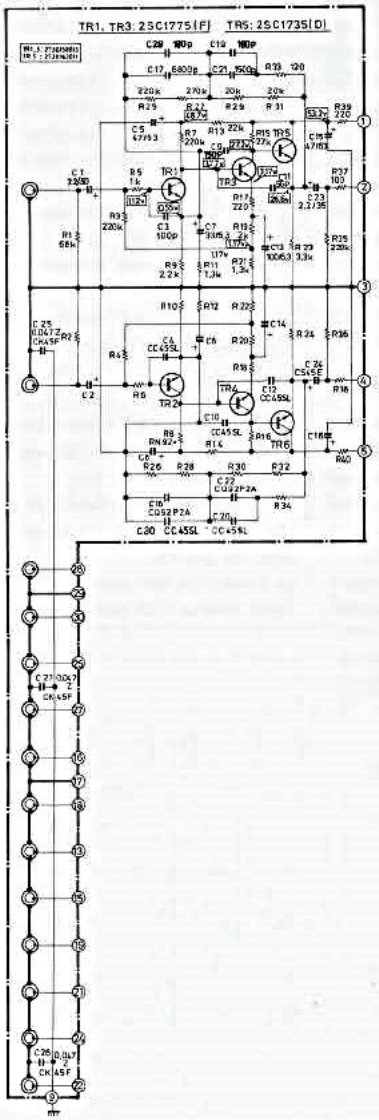
Ref. No.	Part No.	Descriptions
25, 26	2410321005	2 kohm ±5% 1/4W CARBON FILM RESISTOR
27, 28, 31,	2410349003	30 kohm ±5% 1/4W CARBON FILM RESISTOR
32		
29, 30, 33,	2410332007	5.6 kohm ±5% 1/4W CARBON FILM RESISTOR
34		
35, 36	2410368000	180 kohm ±5% 1/4W CARBON FILM RESISTOR
39, 40	2410322004	2.2 kohm ±5% 1/4W CARBON FILM RESISTOR
41, 42, 49,	2410356009	56 kohm ±5% 1/4W CARBON FILM RESISTOR
50		
43, 44	2410328008	3.9 kohm ±5% 1/4W CARBON FILM RESISTOR
47, 48	2410760006	620 kohm ±5% 1/4W CARBON FILM RESISTOR
51, 52	2410352003	39 kohm ±5% 1/4W CARBON FILM RESISTOR
53, 54	2410342000	15 kohm ±5% 1/4W CARBON FILM RESISTOR
55, 56	2412030093	360 kohm ±5% 1/4W CARBON FILM RESISTOR
57, 58, 75,	2412030006	62 kohm ±5% 1/4W CARBON FILM RESISTOR
76		
59, 60	2410773006	1 Mohm ±5% 1/4W CARBON FILM RESISTOR
61, 62	2410372009	270 kohm ±5% 1/4W CARBON FILM RESISTOR
63,64,79,	2412002089	1 kohm ±5% 1/4W CARBON FILM RESISTOR
80,117,118		
65, 66	2412020087	8.2 kohm ±5% 1/4W CARBON FILM RESISTOR
67, 68	2412003046	150 kohm ±5% 1/4W CARBON FILM RESISTOR
69,70,71,	2410357008	6.2 kohm ±5% 1/4W CARBON FILM RESISTOR
72,115,116		
73, 74	2412028089	6.2 kohm ±5% 1/4W CARBON FILM RESISTOR
77, 78	2412029046	20 kohm ±5% 1/4W CARBON FILM RESISTOR
81, 82	2412004003	470 kohm ±5% 1/4W CARBON FILM RESISTOR
83	2412027080	750 ohm ±5% 1/4W CARBON FILM RESISTOR
84	2410311002	750 ohm ±5% 1/4W CARBON FILM RESISTOR
85, 86	2412028063	4.3 kohm ±5% 1/4W CARBON FILM RESISTOR
87, 88	2412002047	470 ohm ±5% 1/4W CARBON FILM RESISTOR
89	2412003062	220 kohm ±5% 1/4W CARBON FILM RESISTOR
90	2410370001	220 kohm ±5% 1/4W CARBON FILM RESISTOR
91, 92	2412001022	47 ohm ±5% 1/4W CARBON FILM RESISTOR
93, 94	2410294006	150 ohm ±5% 1/4W CARBON FILM RESISTOR
102, 103	2410338001	10 kohm ±5% 1/4W CARBON FILM RESISTOR
105, 106	2412003075	270 kohm ±5% 1/4W CARBON FILM RESISTOR
107, 108	2410376005	390 kohm ±5% 1/4W CARBON FILM RESISTOR
109, 110	2410359006	75 kohm ±5% 1/4W CARBON FILM RESISTOR
123, 124	2410765001	1 Mohm ±5% 1/4W CARBON FILM RESISTOR
VR1	2110130004	V2420V25K-104- FOR BASS
2	2110129002	V2420V25K-104- FOR TREBLE
3	2110139005	V2420V25KA-104- FOR MAIN VOLUME
4, 5	2110136105	V2411V30KB104B-104- FOR P.C. CANCELLER
6	2110131003	V2420V25KW104K FOR BALANCE
S1	2124046003	LEVER SWITCH FOR P.C. CAN
2	2120093005	FUNCTION SWITCH FOR FUNCTION SWITCH
3, 4, 5	2124045004	LEVER SWITCH FOR REC FUNCTION, COPY, AND MONITOR SWITCH
8	2124045017	LEVER SWITCH FOR LOW CUT SWITCH
6, 9, 7	2124103001	MODE TONE MUTING SWITCH

EQUALIZER AMP & INPUT UNIT EUX-007C 1/2



EUX-007C 2/2

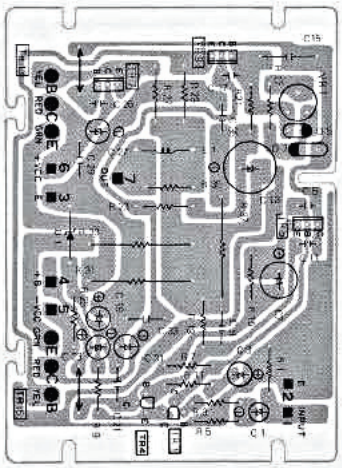




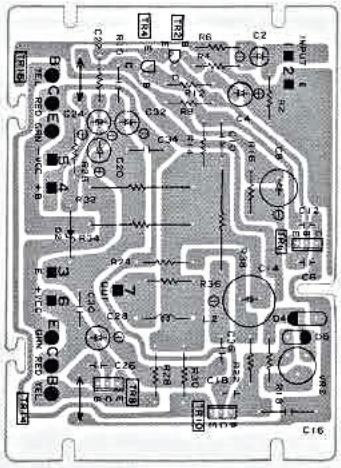
EQUALIZER AMP & INPUT UNIT EUX-007C

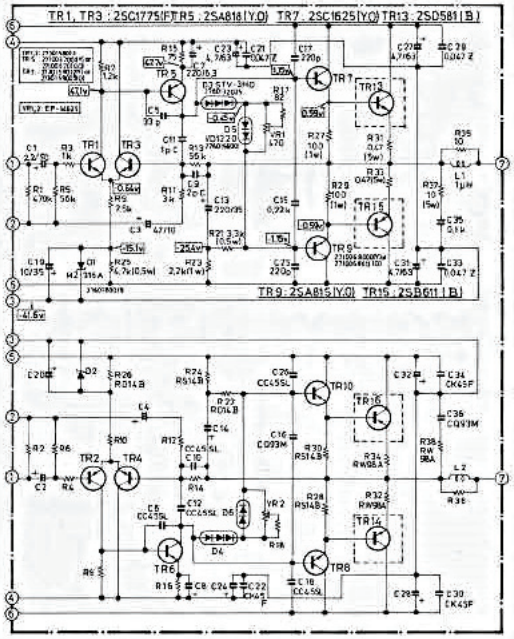
Ref. No.	Part No.	Descriptions		
	SEMICONDUCTORS			
TR1,2,3,4	2730158013	2SC1775 (F)		TRANSISTOR
5,6	2730163011	2SC1735 (D)		TRANSISTOR
	CAPACITORS			
C1, 2	2544066003	2.2μF	50V	ELECTROLYTIC CAPACITOR
3, 4	2533627000	100pF ±5%	50V	CERAMIC CAPACITOR
5, 6, 15, 16	2544059023	47μF	63V	ELECTROLYTIC CAPACITOR
7, 8	2544001000	33μF	6.3V	ELECTROLYTIC CAPACITOR
9, 10	2533631009	150pF ±5%	50V	CERAMIC CAPACITOR
11, 12	2533621006	56pF ±5%	50V	CERAMIC CAPACITOR
13, 14	2544003008	100μF	6.3V	ELECTROLYTIC CAPACITOR
17, 18	2551142017	0.0068μF ±2%	100V	PLASTIC FILM CAPACITOR
19, 20	2533633007	180pF ±5%	50V	CERAMIC CAPACITOR
21, 22	2551142004	0.0015μF ±2%	100V	PLASTIC FILM CAPACITOR
23, 24	2541035011	2.2μF ±20%	35V	SOLID TANTALUM CAPACITOR
25, 26, 27	2531026001	0.047μF	50V	CERAMIC CAPACITOR
	RESISTORS			
R1, 2	2410358007	68 kohm ±5%	1/4W	CARBON FILM RESISTOR
3,4,25,26, 35, 36	2410370001	220 kohm ±5%	1/4W	CARBON FILM RESISTOR
5, 6	2410314009	1 kohm ±5%	1/4W	CARBON FILM RESISTOR
7, 8	2452002023	220 kohm ±5%	1/4W	METAL OXIDE FILM RESISTOR
9, 10	2410322004	2.2 kohm ±5%	1/4W	CARBON FILM RESISTOR
11, 12, 21, 22	2410317006	1.3 kohm ±5%	1/4W	CARBON FILM RESISTOR
13, 14	2410346006	22 kohm ±5%	1/4W	CARBON FILM RESISTER
15, 16	2410348004	27 kohm ±5%	1/4W	CARBON FILM RESISTOR
17, 18, 39, 40	2410298002	220 ohm ±5%	1/4W	CARBON FILM RESISTOR
19, 20	2410321005	2 kohm ±5%	1/4W	CARBON FILM RESISTOR
23, 24	2410326000	3.3 kohm ±5%	1/4W	CARBON FILM RESISTOR
27, 28	2410372009	270 kohm ±5%	1/4W	CARBON FILM RESISTOR
29, 30, 31, 32	2410345007	20 kohm ±5%	1/4W	CARBON FILM RESISTOR
33, 34	2410292008	120 ohm ±5%	1/4W	CARBON FILM RESISTOR
37, 38	2410290000	100 ohm ±5%	1/4W	CARBON FILM RESISTOR

POWER AMP UNIT PUX-014C (L)



PUX-014C (R)

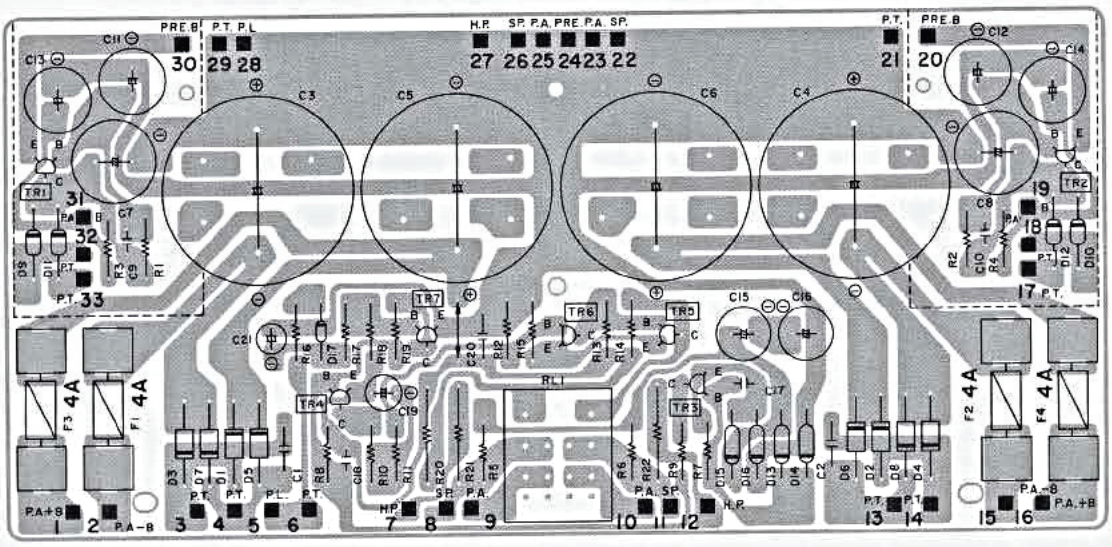


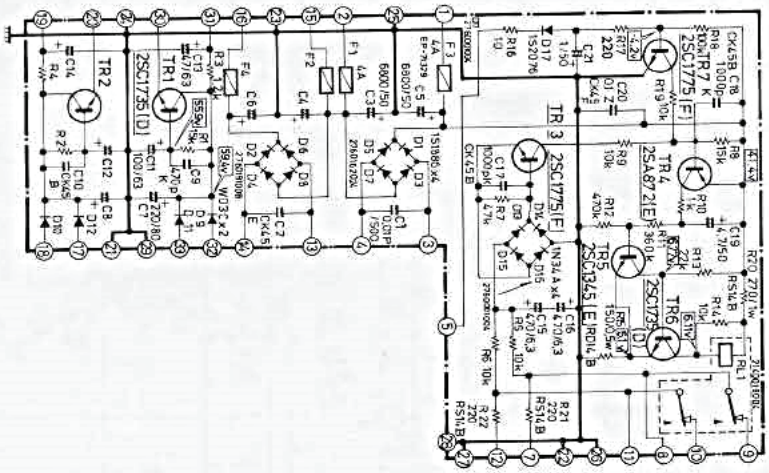


POWER AMP UNIT PUX-014C

Ref. No.	Part No.	Descriptions			
	SEMICONDUCTORS				
TR1,2,3,4	2730158013	2SC1775 (F) TRANSISTOR			TRANSISTOR
5, 6	2710067001	2SA818 (Y) TRANSISTOR			TRANSISTOR
7, 8	2730159012	2SC1625 (Y) TRANSISTOR			TRANSISTOR
9, 10	2710068000	2SA815 (Y) TRANSISTOR			TRANSISTOR
D1, 2	2760180019	M2316A			ZENNER DIODE
3, 4	2760132025	STV-3H (O) DIODE			DIODE
5, 6	2760156001	VD1220 VARISTOR			VARISTOR
	INDUCTORS				
L1, 2	2320017001	1μH			
	CAPACITORS				
C1, 2	2544066003	2.2μF		50V	ELECTROLYTIC CAPACITOR
3, 4	2544009002	47μF		10V	ELECTROLYTIC CAPACITOR
5, 6	2533615009	33pF	±5%	50V	CERAMIC CAPACITOR
7, 8	2544004007	220μF		6.3V	ELECTOROLYTIC CAPACITOR
9, 10	2533595006	2pF	±0.25 pF	50V	CERAMIC CAPACITOR
11, 12	2533594007	1 pF	±0.25 pF	50V	CERAMIC CAPACITOR
13, 14	2544039001	220μF		35V	ELECTROLYTIC CAPACITOR
15, 16	2551088003	0.22μF	±10%	50V	PLASTIC FILM CAPACITOR
17, 18, 25, 26	2533635005	220 pF	±5%	50V	CERAMIC CAPACITOR
19, 20	2544035005	10μF		35V	ELECTROLYTIC CAPACITOR
21, 22, 29	2531026001	0.047μF		50V	CERAMIC CAPACITOR
30, 33, 34					
23, 24	2544059036	4.7μF		63V	ELECTROLYTIC CAPACITOR
27, 28, 31, 32	2544046007	4.7μF		50V	ELECTROLYTIC CAPACITOR
35, 36	2551084007	0.1μF	±10%	50V	PLASTIC FILM CAPACITOR
	RESISTORS				
R1, 2	2410378003	470 kohm	±5%	1/4W	CARBON FILM RESISTOR
3, 4,	2410314009	1 kohm	±5%	1/4W	CARBON FILM RESISTOR
5, 6, 13, 14	2410356009	56 kohm	±5%	1/4W	CARBON FILM RESISTOR
7, 8	2410316007	1.2 kohm	±5%	1/4W	CARBON FILM RESISTOR
9, 10	2410335004	7.5 kohm	±5%	1/4W	CARBON FILM RESISTOR
11, 12	2410325001	3 kohm	±5%	1/4W	CARBON FILM RESISTOR
15,16	2410287000	75 ohm	±5%	1/4W	CARBON FILM RESISTOR
17, 18	2410288009	82 ohm	±5%	1/4W	CARBON FILM RESISTOR
21, 22	2410197006	3.3 kohm	±5%	1/2W	CARBON FILM RESISTOR
23, 24	2440045005	2.2 kohm	±5%	1 W	METAL OXIDE FILM RESISTOR
25, 26	2410201002	4.7 kohm	±5%	1/2W	CARBON FILM RESISTOR
27, 28, 29, 30	2440029005	100 ohm	±5%	1 W	METAL OXIDE FILM RESISTOR
31, 32, 33, 34	2432003000	0.47 ohm	±10%	5 W	WIRE WOUND RESISTOR
35, 36	2410266005	10 ohm	±5%	1/4W	CARBON FILM RESISTOR
37, 38	2432003013	10 ohm	±10%	5 W	WIRE WOUND RESISTOR
VR1, 2	EP-54625	470 ohm			VARIABLE RESISTOR

PROTECTOR & POWER SOURCE UNIT ETC-220C



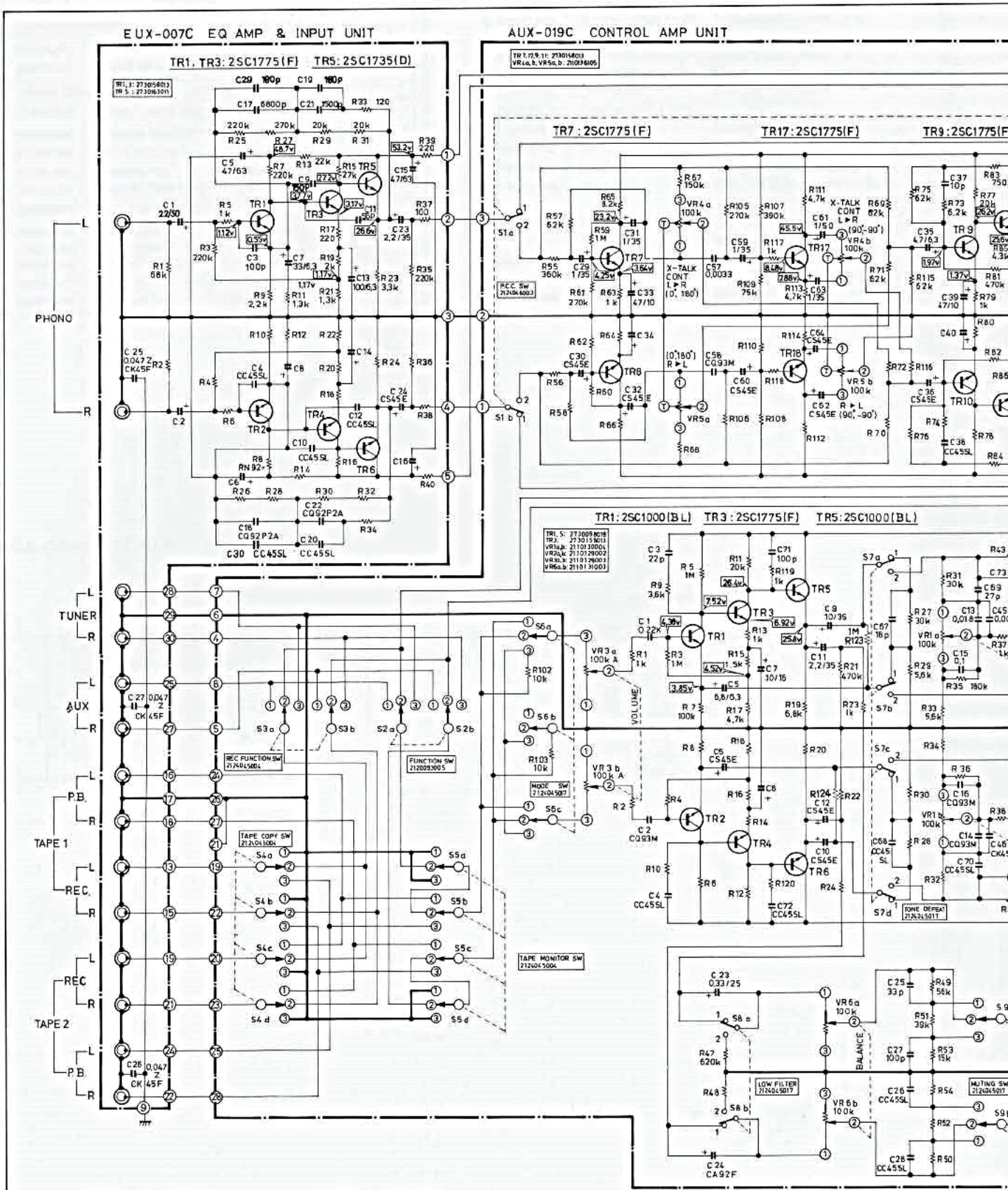


PROTECTOR & POWER SOURCE UNIT ETC-220C

Ref. No.	Part No.	Descriptions
	SEMICONDUCTORS	
TR1, 2, 6	2730163011	2SC1735 (D) TRANSISTOR
3, 7	2730158013	2SC1775 (F) TRANSISTOR
4	2710070001	2SA872 (E) TRANSISTOR
5	2730116013	2SC1345 (E) TRANSISTOR
D1, 2, 3, 4, 5, 6, 7, 8	2760162024	IS1886 DIODE
9, 10, 11, 12	2760191008	W03C DIODE
13, 14, 15, 16	2760001004	IN34A DIODE
17	2760049008	IS2076 DIODE
	CAPACITORS	
C1, 2	2531053003	0.01μF 500V CELAMIC CAPACITOR
3, 4, 5, 6	2546022016	6800μF 50V ELECTROLYTIC CAPACITOR
7, 8	2544063019	220μF 80V ELECTROLYTIC CAPACITOR
9, 10	2531002009	470 pF ±10% 50V CELAMIC CAPACITOR
11, 12	2544059007	100μF 63V ELECTROLYTIC CAPACITOR
13, 14	2544059023	47μF 63V ELECTROLYTIC CAPACITOR
15, 16	2544006005	470μF 6.3V ELECTROLYTIC CAPACITOR
17, 18	2531004007	0.001μF ±10% 50V CELAMIC CAPACITOR

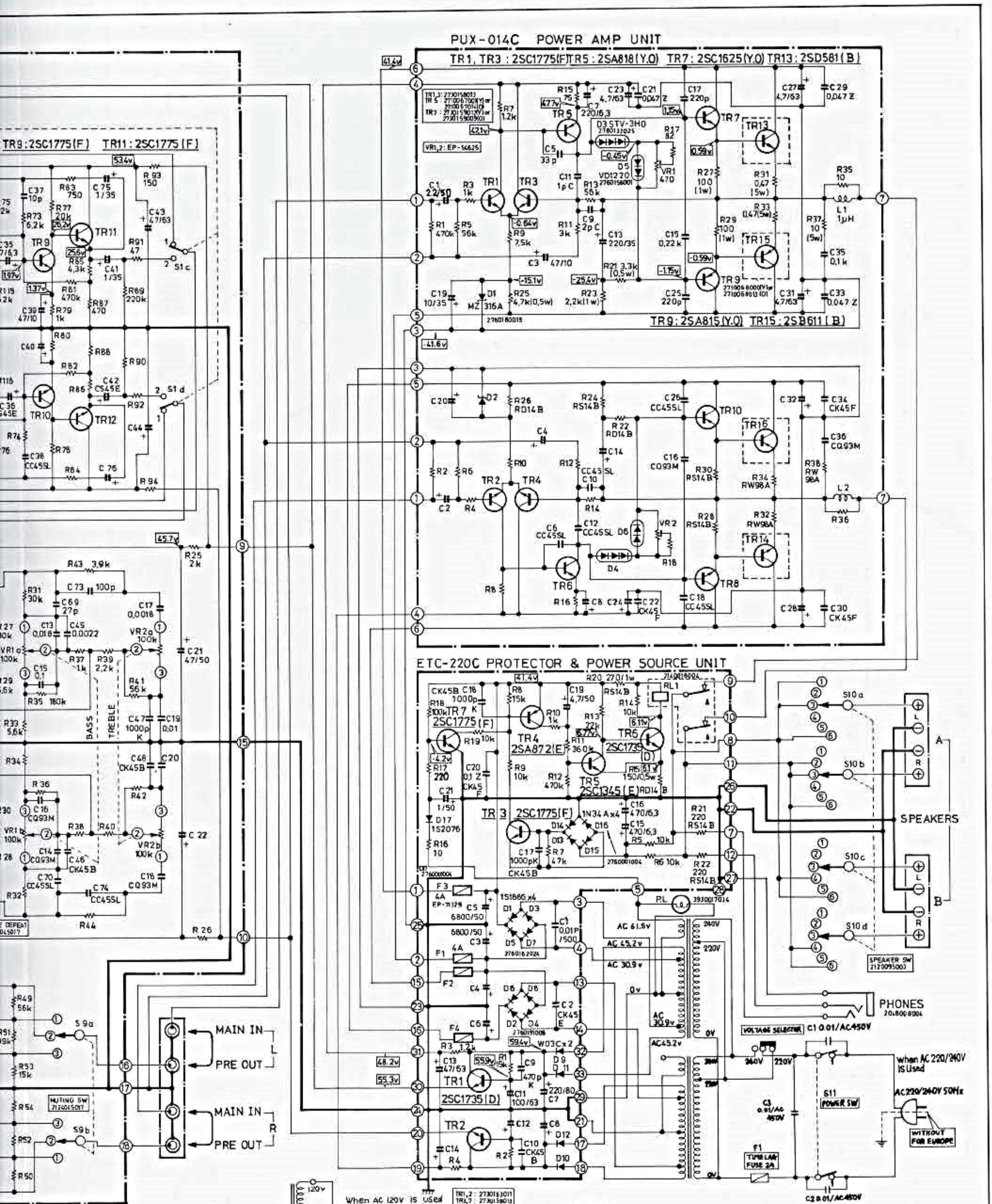
Ref. No.	Part No.	Descriptions
19	2544046007	4.7μF 50V ELECTROLYTIC CAPACITOR
20	2531027000	0.1μF 50V CELAMIC CAPACITOR
21	2544044009	1μF 50V ELECTROLYTIC CAPACITOR
	RESISTORS	
R1, 2, 8	2410342000	15 kohm ±5% 1/4W CARBON FILM RESISTOR
3, 4	2410316007	1.2 kohm ±5% 1/4W CARBON FILM RESISTOR
5, 6, 9, 14, 19	2410338001	10 kohm ±5% 1/4W CARBON FILM RESISTOR
7	2410354001	47 kohm ±5% 1/4W CARBON FILM RESISTOR
10	2410314009	1 kohm ±5% 1/4W CARBON FILM RESISTOR
11	2410375006	360 kohm ±5% 1/4W CARBON FILM RESISTOR
12	2410378003	470 kohm ±5% 1/4W CARBON FILM RESISTOR
13	2410346006	22 kohm ±5% 1/4W CARBON FILM RESISTOR
15	2410165009	150 ohm ±5% 1/2W CARBON FILM RESISTOR
16	2410266005	10 ohm ±5% 1/4W CARBON FILM RESISTOR
17	2410298002	220 ohm ±5% 1/4W CARBON FILM RESISTOR
18	2410362006	1 Mohm ±5% 1/4W CARBON FILM RESISTOR
20	2440034003	270 ohm ±5% 1 W METAL OXIDE FILM RESISTOR
21, 22	2440033004	220 ohm ±5% 1 W METAL OXIDE FILM RESISTOR
F 1, 2, 3, 4	EP-71329	FUSE 4A (TIME LUG)
RL 1	2140016004	RELAY DC 24V 1.03 W

WIRING DIAGRAM



⊙ S1a ~ d : P. C. C. ---------- 1 = OFF ----- 2 = ON
⊙ S2a ~ b : FUNCTION ---------- 1 = AUX ------ 2 = PHONO ------ 3 = TUNER
⊙ S3a ~ b : REC FUNCTION -------- 1 = AUX ------ 2 = PHONO -------- 3 = TUNER
⊙ S4a ~ d : TAPE COPY ---------- 1 = TAPE 1▶2 -- 2 = REC SOURCE --- 3 = TAPE 2▶1
⊙ S5a ~ d : TAPE MONITOR ------- 1 = TAPE 1 ---- 2 = SOURCE ------- 3 = TAPE 2
⊙ S6a ~ c : MODE ---------- 1 = REV ------ 2 = STEREO ------- 3 = MONO

⊙ S7a ~ d : TONE DEFEAT ----- 1 = DEFEAT ---- 2 = ON
⊙ S8a ~ b : LOW FILTER ------ 1 = OFF ------- 2 = 20Hz
⊙ S9a ~ b : MUTING --------- 1 = -10 dB ----- 2 = 0 dB ---- 3 = -20d
⊙ S10a ~ d : SPEAKERS ------- 1 = AL --------- 2 = AR ------ 3 = A
⊙ S11 : POWER ---------- 1 = ON ------- 2 = OFF



Hz
B ---- 3 = -20dB
---- 3 = A ------ 4 = B --- 5 = OFF --- 6 = A + B
F

NOTES
ALL RESISTANCE VALUES IN OHM K = 1.000 OHM
M = 1.000.000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD
P = MICRO-MICRO FARAD
EVERY VOLTAGES AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION. CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

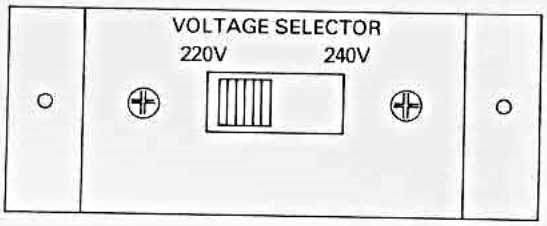
CHASSIS AND CABINET GROUP PARTS LIST

Ref. No.	Part. No.	Descriptions	
	SEMICONDUCTORS		
TR13, 14	2740040001	2SD581 (B)	TRANSISTOR
15, 16	2720027002	2SB611 (B)	TRANSISTOR
	CAPACITORS		
C1, 2, 3	2518001007	0.01μF ±20% 450VAC	OIL CAPACITOR
S10	2120095003	SPEAKER SWITCH	FOR SPEAKER SWITCH
11	2124057005	LEVER SWITCH	FOR POWER ON OFF SWITCH
	2124047002	SLID SWITCH	FOR VOLTAGE SLECTOR SWITCH
F1	2061015061	FUSE 2A (TIME LAG)	FOR AC LINE FUSE
J1	2048008004	HEAD PHONE JACK	
P.L1	3930017034	P.L 6.3V 0.15A	FOR PILOT LAMP
	1050159104	BACK PANEL	
	2335041004	POWER TRANS ASS'Y	FOR RIGHT CHANNEL
	2335041017	POWER TRANS ASS'Y	FOR LEFT CHANNEL
	2020012005	FUSE HOLDER	FOR AC LINE FUSE HOLDER

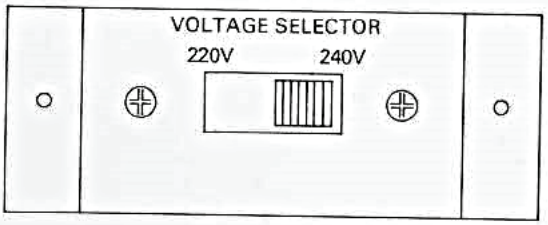
Ref. No.	Part No.	Descriptions	
	2048019006	4P CONNECTOR BASE	FOR PRE OUT MAIN IN JACK
	2050071003	TERMINAL ASS'Y	FOR GND. TERMINAL
	2050037005	SHORT PIN	FOR PRE-MAIN SHORT PIN
	1190006104	BLIND SHEET	FOR LEVER KNOB BLIND SHEET
	1130074206	LEVER KNOB	FOR LEVER SWITCH
	1440260124	FRONT PANEL ASS'Y	
	1140031006	KNOB SHEET	FOR ESC RING
	1020044207	TOP COVER	
	1120079305	KNOB ASS	FOR MAIN VOLUME
	1120127309	KNOB ASS	FOR SPEAKER, BASS, TREBLE AND BALANCE
	1120132307	KNOB ASS	FOR CROSSTALK CONTROL (OUT SIDE)
	1120140302	KNOB ASS	FOR CROSSTALK CONTROL (IN SIDE)
	1120134208	KNOB ASS	FOR FUNCTION

VOLTAGE CHANGEOVER

FOR 220V OPERATION



FOR 240V OPERATION



DENON

NIPPON COLUMBIA CO., LTD.
No. 14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107 JAPAN
TEL: 03-584-8111
TLX: JAPANOLA J22591
CABLE: NIPPONCOLUMBIA TOKYO

Printed in Japan