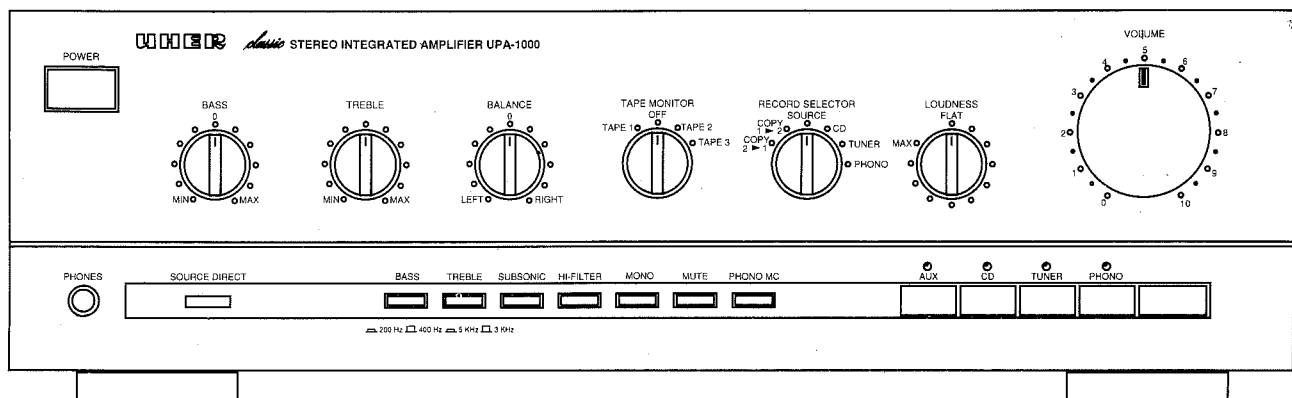


SERVICE MANUAL

UPA-1000

PRE AMPLIFIER



SPECIFICATIONS

● Amplifier Section

Input sensitivity impedance
 Phono MC.....0.22mV / 100
 Phono MM.....2.5mV / 47k
 Tuner,CD,AUX Tape.....150mV / 47k
 Frequency response (high level inputs,-3dB)
5-90000Hz
 Linearity (20Hz-20000Hz).....+ / -0,5dB

Signal to noise potential ratio (UA=1V, A valued)
 Phono MC.....75dB
 Phono MM.....85dB
 Tuner, CD,AUX,Tape.....100dB

Saturation resistivity
 Phono MC.....15mV
 Phono MM.....180mV
 Tuner, CD,AUX,Tape.....12V

Total non-linear distorsion factor (1 kHz).....0.01%

Tone Cantrol
 Bass 50Hz ☐ (Turnover OFF)+ / +10dB
 Treble 10Hz ☐+ / -10dB

Bass 20Hz ☐ (Turnover ON)+ / -10dB
 Treble 20Hz ☐+ / -10dB

Loudness
 100Hz.....+10dB
 10KHz.....+4dB

Filters
 Subsonic.....-18dB / oct,(20Hz)
 High.....-12dB / oct,(10Hz)

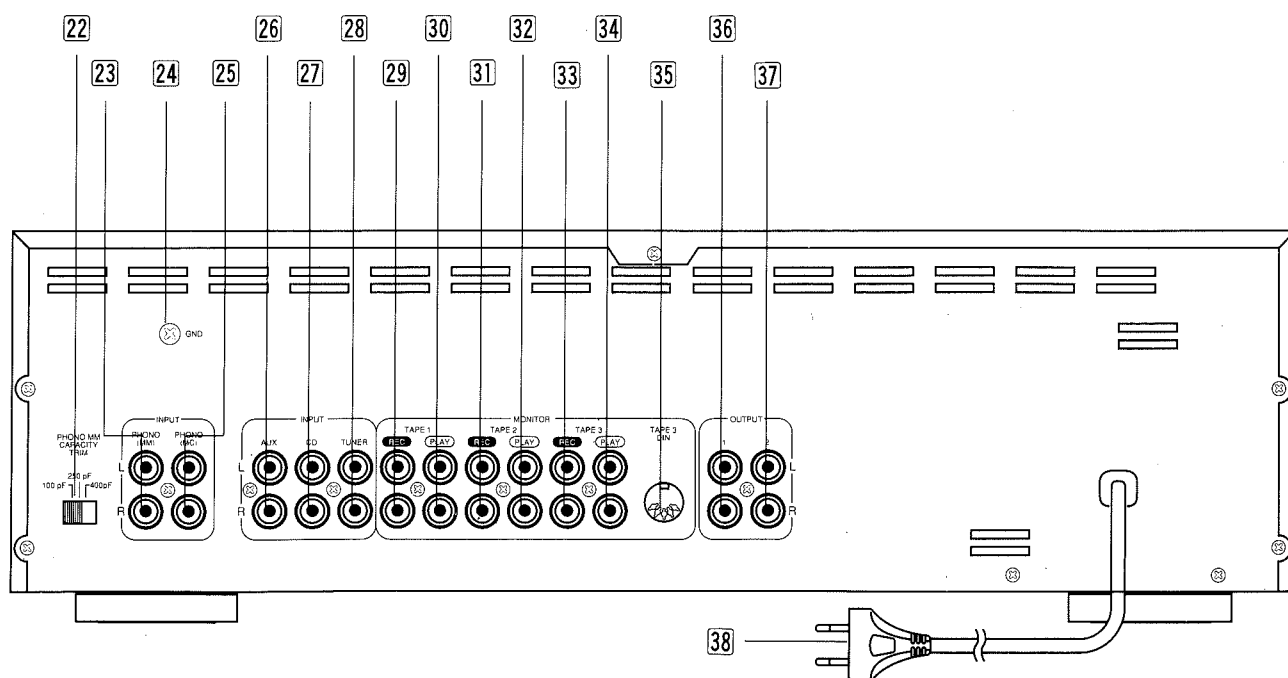
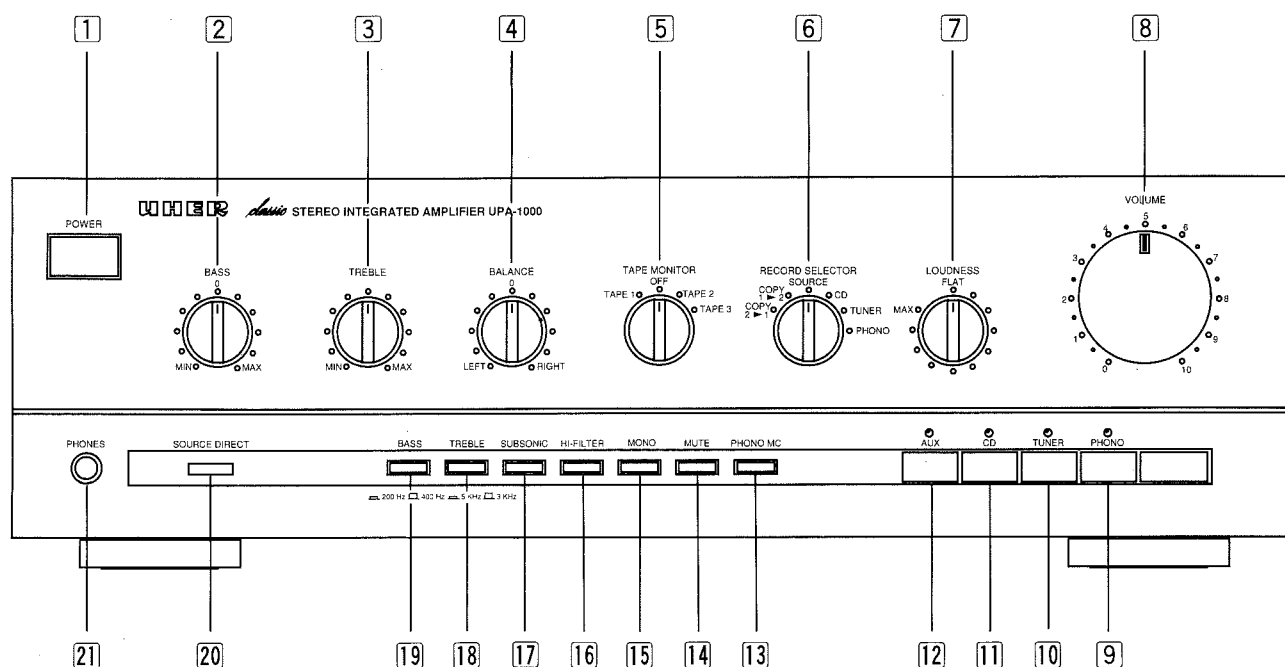
● Miscellaneous

POWER requirements.....AC230V,50Hz
 POWER consumption.....18W
 Dimensions (W×H×D heigh without footing)
435 × 120 × 250mm
 Weight(net).....4.1kg

● Furnished parts

operation instructions.....1

FRONT PANEL FEATURES



Designation**INSCRIPTION**

- | | | |
|---|----------------------------|--|
| 1. Mains key | POWER | |
| With this key you switch the unit on or off. | | |
| 2. Bass control | BASS | |
| With this control you set the proportion of low frequencies. | | |
| 3. Treble control | TREBLE | |
| With this control you set the proportion of high frequencies. | | |
| 4. Balance control | BALANCE | |
| With this control you set the volume ratio between the two stereo channels. | | |
| 5. Monitor switch | TAPE MONITOR | |
| With this switch you determine from which tape device you want to replay. | | |
| 6. Recording selector switch | RECORD SELECTOR | |
| With this selector switch you determine which program source you want to record. | | |
| 7. Control for aurally compensated volume adjustment | LOUDNESS | |
| When this control is turned out of its FLAT position the highest and lowest frequencies at low volumes are amplified a bit more than the rest in order to compensate the smaller sensitivity of the human ear for low volumes in these ranges. When turned to the position MAX this effect reaches its maximum, in the position FLAT the function is eliminated completely. | | |
| 8. Volume control | VOLUME | |
| With this control you set the total volume. | | |
| 9. Phono key | PHONO | |
| You press this key if you want to replay disks on a record player connected to the outlets 23 or 25. | | |
| 10. Tuner key | TUNER | |
| For radio reception via a radio receiver (tuner) connected to the outlets 28 you press this key. | | |
| 11. CD key | CD | |
| For replay from a compact disk player connected to the outlets 27 you press this key. | | |
| 12. Key for additional program source | AUX | |
| For replay from a program source connected to the outlets 26 you press this key. | | |
| 13. Phono selector switch | PHONO MC | |
| For replay from a record player with a so-called moving coil system this key must be pressed. | | |
| 14. Mute key | MUTE | |
| When this key is pressed the volume is reduced considerably. | | |
| 15. Operation mode selector | MONO | |
| With this key you select one of the modes stereo [key not pressed] or mono [key pressed], respectively. | | |
| 16. Noise filter | HI FILTER | |
| You press this key to suppress disturbances in the upper frequency range (noise etc.). | | |
| 17. Rumble filter | SUBSONIC | |
| For suppressing noises in the lowest frequency ranges (caused by wavy disks etc.) you press this key. | | |
| 18. Selector switch for treble control | TURNOVER TREBLE | |
| With this switch you select the starting frequency of the treble control. | | |
| 19. Selector switch for bass control | TURNOVER BASS | |
| With this switch you select the starting frequency of the bass control. | | |
| 20. On/off switch for sound control | SOURCE DIRECT | |
| When this key is pressed the sound controls 2 and 3 are not active. | | |
| 21. Headphone outlet | PHONES | |
| You can connect stereo headphones provided with a suitable plug to this outlet. | | |
| 22. Capacity selector switch | PHONO CAPACITY TRIM | |
| With this switch you can set the unit to the capacity recommended by the manufacturer of your pick-up system. | | |

23. Phono outlets MM **PHONO MM**

If your record player is equipped with a moving magnet system you connect it to these outlets.

24. Ground terminal **GND**

If your record player is equipped with a ground cable you connect it to this terminal clamp.

25. Phono outlets MC **PHONO MC**

If your record player is equipped with a moving coil system you connect it to these outlets.

[26]. Outlets for additional program source **AUX**

To these outlets you can connect an additional high level program source (for ex. an additional tape or cassette device or a DAT-recorder) for replay.

27. CD outlets	CD
----------------	----

Connect a compact disc player to these outlets.

[28]. Tuner outlets **TUNER**

Connect your tuner to these outlets.

29. Recording outlets [Tape recorder 1] TAPE 1 REC

Connect these outlets to the LINE-input outlets of your tape device (tape or cassette recorder, DAT-recorder).

30. Replay outlets [tape device 1] **TAPE 1 PLAY**

Connect these outlets to the LINE-output outlets of your second tape device (tape or cassette recorder, DAT-recorder).

31. Recording outlets (Tape recorder 2)

Connect these outlets to the LINE-input outlets of your second tape device (tape or cassette recorder, DAT-recorder).

32. Replay outlets [tape device 2] **TAPE 2 PLAY**

Connect these outlets to the LINE-output outlets of your second tape device (tape or cassette recorder, DAT-recorder).

33. Recording outlets [Tape recorder 3]

Connect these outlets to the LINE-input outlets of your third tape device (tape or cassette recorder, DAT-recorder).

34. Replay outlets [tape device 3] **TAPE 3 PLAY**

Connect these outlets to the LINE-output outlets of your third tape device (tape or cassette recorder, DAT-recorder).

35. DIN-outlet

You can connect a tape device equipped with DIN-outlets to this outlet which is suitable for recording as well as for replay.

36. Output outlets 1 **OUTPUT 1**

Connect these outlets to the input outlets of your final amplifier.

[37]. Output outlets 2 **OUTPUT 2**

To these outlets you can connect a second final amplifier.

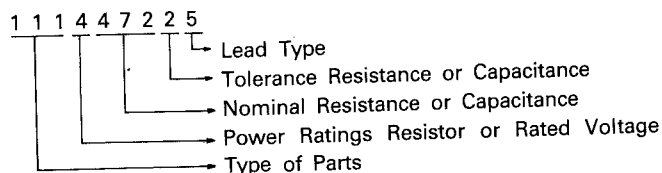
38. Mains cable **POWER IN**

The plug of this cable must be put into a 220V ~ 230V/50Hz mains socket.

ELECTRICAL PARTS LIST

NOTE :

When ordering parts first convert parts number into code form as shown in the following examples.



RESISTOR

ex) Power Ratings Resistors

8...1/8W 4...1/4W 5...1/2W
1...1W 2...2W 7...4W

ex) Resistor Value

479...4.7Ω 560...56Ω 681...680Ω
822...8.2K 123...12K 224...220KΩ

*CARBON film Resistor ; 1□□437225(3.7KΩ,1/4W)

CAPACITANCE

ex) Rated Voltage

0...4V 1...6.3V 2...10V 3...16V
4...25V 5...35V 6...50V 7...63V
8...80V 9...100V

ex) Type of Ceramic Capacitor

71...CKDYB 75...CKDYF 80...CCDCH
88...CCDSL 84...CCDRH 86...CCDTH

ex) Capacitor Value

040...4pF 470...47pF 221...220pF
182...1800pF 103...0.01μF 473...0.047μF

ex) Tolerance Capacitance

0...C=±0.25pF 1...D=±0.5pF 2...F=±1pF
3...G=±2% 4...J=±5% 5...K=±10%
9...Z=+80% 6...M=±20%
-20%

*ELECTROLYTIC CAP : 1□□2647365(0.047μF,50V,±20%)

*CERAMIC CAP : 1□□8647241(4700pF,50V,±20%)

*MYLAR CAP : 1□□0647251(4700pF,50V,±10%)

*STYROL CAP : 1□□3643141(430pF,50V,±5%)

POWER SUPPLY PARTS

SYMBOL	PART NO.	DESCRIPTION	
SEMICONDUCTORS			
D801.D802.D803.D804.D805	241358165-1	DIODE	1N4003L
D806.D807.D808.D809	242127035	ZENER DIODE	1N971B
ZD801.ZD802	242120035	ZENER DIODE	1N968B
ZD803.ZD804	241017995	DIODE	1SS133
D810.D811.D816.D817.D818	242115035	DIODE	1N965B
D819	240213915-1	T R	2SC1845
D805.D806	240011635-1	T R	2SA992E
Q801	240217321	T R	KTC4370Y
Q802	240015121	T R	KTA1659Y
Q803.Q805.Q807	240211135	T R	KTC1815GR
Q804.Q806.Q808	240011835	T R	KTA1015GR
Q809.Q811.Q812.Q813	244080131	I C	GL7805L
Q810			
IC801			
CAPACITORS			
C801.C802.C803.C804	141610267	ELEC. CAPA.	CEA 1000/50V
C805.C806	141610165	ELEC. CAPA.	CEA 100/50V
C807	141410267	ELEC. CAPA.	CEA 1000/25V
C808.C809	150610445	MALAR	CQMA 104J
C810	141147267	ELEC. CAPA.	CEA 4700/6.3V
C811	141622965	ELEC. CAPA.	CEA 2.2/50V
C812	141601965	ELEC. CAPA.	CEA 0.1/50V
C813	141610065	ELEC. CAPA.	CEA 22/35 V
C814	141601065	ELEC. CAPA.	CEA 1/35V
C816.C817.C818.C819	141647065	ELEC. CAPA.	CEA 47/35V
C821.C822.C823	175610395	CERAMIC	CKDYF 103Z
C824	141322165	ELEC. CAPA.	CEA 220/16V
C827.C828	141510065	ELEC. CAPA.	CEA 10/35V
RESONATORS			
R801.R802.R803.R804	114147023	RESISTOR	47 1W
R805.R806.R807.R808	111447225	RESISTOR	4.7K 1/4W
R809.R810	111522225	RESISTOR	2.2K 1/2W
R811.R812	111418125	RESISTOR	180 1/4W
R814.R815	111410325	RESISTOR	10K 1/4W
R816.R833	111443425	RESISTOR	430K 1/4W
R817	111882025	RESISTOR	82 1/4W
R818	111410425	RESISTOR	100K 1/4W
R819	111447325	RESISTOR	47K 1/4W
R820	111522225	RESISTOR	1.5K 1/4W
R821 R823.R824			
R822	111433125	RESISTOR	330 1/4W
R825.R826	111410025	RESISTOR	10 1/4W
R829	111468125	RESISTOR	680 1/4W
R888	114168123	RESISTOR	680 1W
R889			
RELAY			
RY801	214021101-1	RELAY	RZ-12
OTHER			
HS801.HS802.HS803.HS804	331204501	HEAT SINK	ANH-575-A
HS805			

PHONO PARTS

SYMBOL	PART NO.	DESCRIPTION	
SEMICONDUCTORS			
IC101	244042274-1	I C	CXA1297P
Q101.Q102.Q201.Q202	240411965-1	F E T	2SK369
Q103.Q104.Q203.Q204	240213915-1	T R	2SC1845E
Q105.Q910	240011835	T R	KTA1015GR
Q106.Q107.Q205	240211135	T R	KTA1815GR
Q110.Q210	240315525	T R	KTD1302B
DIODES			
ZD101.ZD102	242112005	DIODE	1N759A
CAPACITORS			
C101.C201	188610145	CERAMIC	CCDSL 101J
C102.C202	171647245	CERAMIC	CKDYB 472K
C103.C203	188610245	CERAMIC	CCDSL 102J
C104.C204	188615145	CERAMIC	CCDSL 151J
C105.C205	188627145	CERAMIC	CCDSL 271J
C106.C107.C133	150610345	MYLAR	CQMA 103J
C107.C207	144447067	ELEC. CAPA.	CEA 47/25 NP
C108.C208	150615345	MYLAR	CQMA 153J
C109.C209	150647345	MYLAR	CQMA 473J
C110.C210	141633965	ELEC. CAPA.	CEA 3.3/50V
C136.C236	188633045	CERAMIC	CCDSL 330J
C139.C239	171647245	CERAMIC	CKDYB 472K
C141.C241	141410165	ELEC. CAPA.	CEA 100/25V
RESISTORS			
R101.R201	111447225	RESISTORS	4.7K 1/4W
R102.R106.R114.R202	111410025	RESISTORS	10 1/4W
R206.R214.R227			
R103.R115.R203.R215	111410125	RESISTORS	100 1/4W
R104.R105.R204.R205	111822525	RESISTORS	2.2M 1/8W
R107.R121.R207.R221	111447325	RESISTORS	47K 1/4W
R108.R123.R208.R223	111427125	RESISTORS	270 1/4W
R109.R209	111427225	RESISTORS	2.7K 1/4W
R110.R210	111433025	RESISTORS	33 1/4W
R111.R112.R211.R212	111456225	RESISTORS	5.6K 1/4W
R113.R213	111415325	RESISTORS	15K 1/4W
R116.R216	111422125	RESISTORS	220 1/4W
R117.R217	111422525	RESISTORS	2.2M 1/4W
R118.R218	111451225	RESISTORS	5.1K 1/4W
R119.R219	111462325	RESISTORS	62K 1/4W
R120.R220	111456025	RESISTORS	56 1/4W
R121.R221	111447325	RESISTORS	47K 1/4W
R122.R222	111439125	RESISTORS	390 1/4W
R124.R224	111447125	RESISTORS	470 1/4W
R125	111815225	RESISTORS	1.5K 1/8W
R126.R226	111833125	RESISTORS	330 1/8W
R127	111810325	RESISTORS	10K 1/8W
R128	111847325	RESISTORS	47K 1/8W
R129	114110123	METAL O RESI.	100 1W
COILS			
L101.L201	103410135	FIXED INDUCTOR	100UH

SWITCH			
SW101	219016701	S/W SLIDE	230673
RELAYS			
RY101.RY102	214011401	RELAY	RZ-24

INPUT PARTS

SYMBOL	PART NO.	DESCRIPTION	
SEMICONDUCTORS			
IC102.IC103.IC104. IC105.IC106.IC107	244140552-1	I C	M5220P
IC108	244216875-1	I C	TC9164N
I C109	244214975-1	I C	TC9163N
CAPACITORS			
C111.C114.C117.C121 C125.C129.C211.C214 C217.C221.C225.C229	1416901065	ELEC. CAPA.	CEA 1/50V
C112.C115.C118.C122 C126.C130.C212.C215 C218.C222.C226.C230	188615145	CERAMIC	CCDSL151J
C113.C116.C119.C123 C127.C131.C213.C216 C219.C223.C227.C231	141510065	ELEC. CAPA.	CEA 10/35V
C120.C124.C128.C220 C224.C228	188633145	CERAMIC	CCDSL331J
C132	175622395	CERAMIC	CKDYF223Z
C135	150610345	MYLAR	CQMA 103J
RESISTORS			
R130.R134.R138.R142 R147.R152.R230.R234 R238.R242.R247.R252	111810225	RESISTOR	1K 1/8W
R131.R132.R133.R135 R136.R137.R139.R140 R141.R143.R144.R145 R148.R149.R150.R153 R154.R155.R231.R232 R233.R235.R236.R237 R239.R240.R241.R243 R244.R245.R248.R249 R250.R253.R254.R255 R146.R151.R156.R246 R251.R256	111810425	RESISTOR	100K 1/8W
R157.R257	111410425	RESISTOR	100K 1/4W
R158.R258	111410525	RESISTOR	1M 1/4W
OTHERS			
JACK101	215561801	JACK RCA 4P	4P GOLD
JACK102.JACK103 JACK104.JACK105	215560801	JACK PIN 4P	4P GOLD
JACK106	215561701	JACK PIN 2P	2P GOLD
DIN101	215517601-1	SOCKET DIN	5P DS-015

LINE OUTPUT HEAD PHONE PART

SYMBOL	PART NO.	DESCRIPTION	
SEMICONDUCTORS			
IC601.IC602	244140552-1	I C	M5220P
CAPACITORS			
C601.C701	141601065	ELEC. CAPA.	CEA 1/50V
C602.C605.C702.C705	141510065	ELEC. CAPA.	CEA 10/35V
C603	188622145	CERAMIC	CCDSL 221J
C604	150610345	MALAR	CQMA 103J
C606.C706	188647045	CERAMIC	CCDSL 47J
C607.C707	188610145	CERAMIC	CCDSL 101J
C608.C708	188615145	CERAMIC	CCDSL 151J
C609.C709	171647255	CERAMIC	CKDYB 472K
RESISTORS			
R601.R609.R701.R709	111422425	RESISTOR	220K 1/4W
R602.R702	111422125	RESISTOR	220 1/4W
R604.R704	111433325	RESISTOR	33K 1/4W
R605.R611.R705.R711	111410225	RESISTOR	1K 1/4W
R606.R706	111468225	RESISTOR	6.8K 1/4W
R607.R707	111482025	RESISTOR	82 1/4W
R608.R708	111410425	RESISTOR	100K 1/4W
R610.R710	111427225	RESISTOR	2.7K 1/4W
R613.R713	111810425	RESISTOR	100K 1/8W
OTHER			
JACK701	215561601	HEADPHONE JACK	LGR 4512-5000R

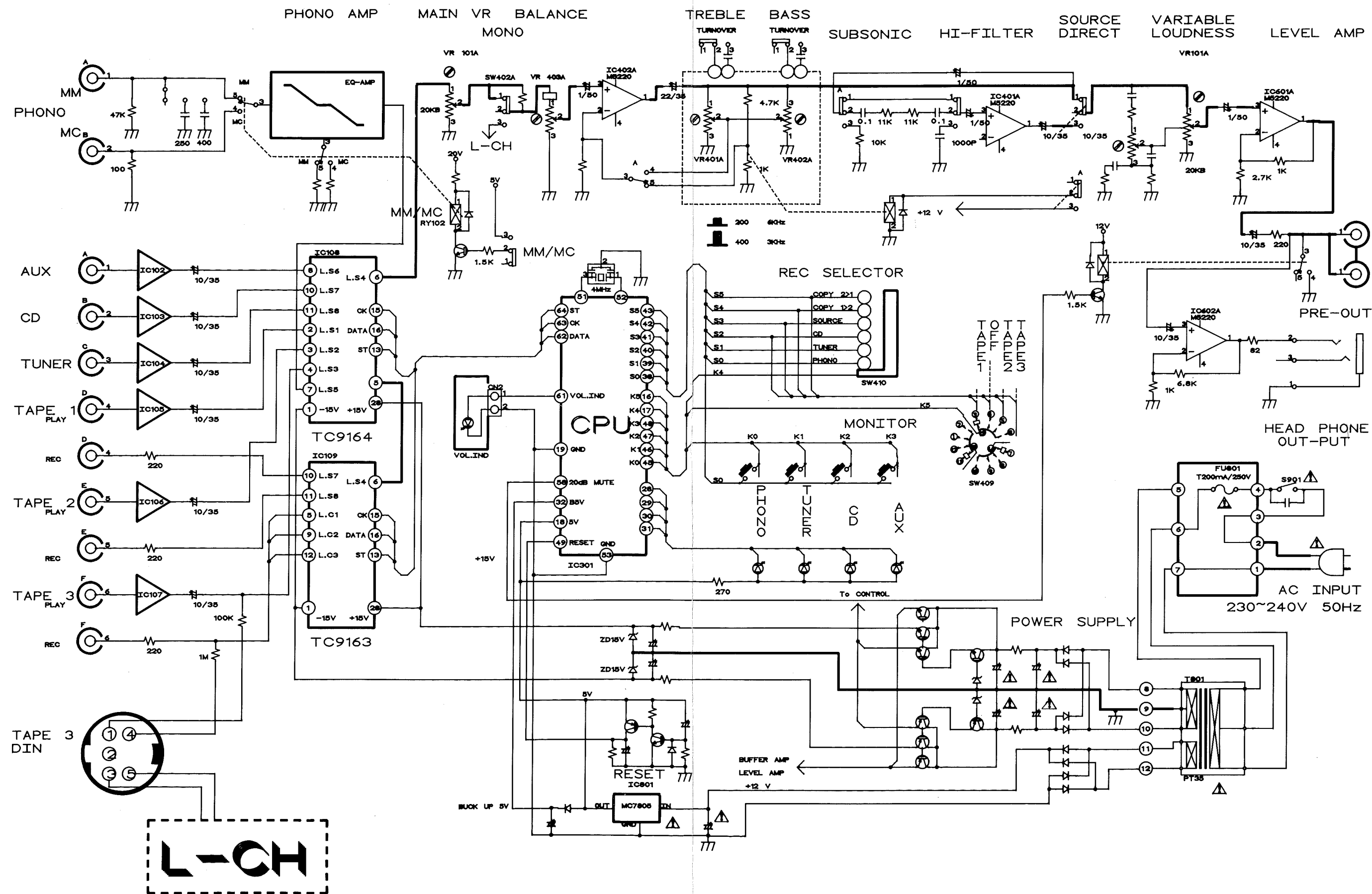
CONTROL PARTS

SEMICONDUCTORS			
IC401.IC402	244140552-1	I C	M5220P
IC301	260012001-1	I C	HD614043
Q401	240011835	T R	KTA1266
Q402.Q403.Q404	240211135	T R	KTC3198
SEMICONDUCTORS			
C401.C402.C413.C418	141601065	ELEC. CAPA.	CEA 1 /50V
C501.C502.C513.C518	141522065	ELEC. CAPA.	CEA 22 /50V
C403.C503	188610145	CERAMIC	CCDSL 101J
C404.C504	150618345	MALAR	CQMA 183J
C405.C406.C505.C506	150682345	MALAR	CQMA 823J
C407.C408.C507.C508	171618245	CERAMIC	CKDYB 182J
C409.C410.C509.C510	150610345	MALAR	CQMA 103J
C411.C412.C511.C512	150610445	MALAR	CQMA 104J
C414.C415.C514.C515	171522245	CERAMIC	CKDYB 222J
C416.C516	188610245	CERAMIC	CCDSL 102J
C417.C517	141610065	ELEC. CAPA.	CEA 10 /50V
C419.C519	141547065	ELEC. CAPA.	CEA 47 /35V
C420.C520	150633245	CERAMIC	CQMA 332J /50V
C421.C521	141622865	ELEC. CAPA.	CEA 0.22 /50V
C422.C522	150647345	MALAR	CQMA 473J
C423.C523	188615145	CERAMIC	CCDSL 151J
C432.C532			

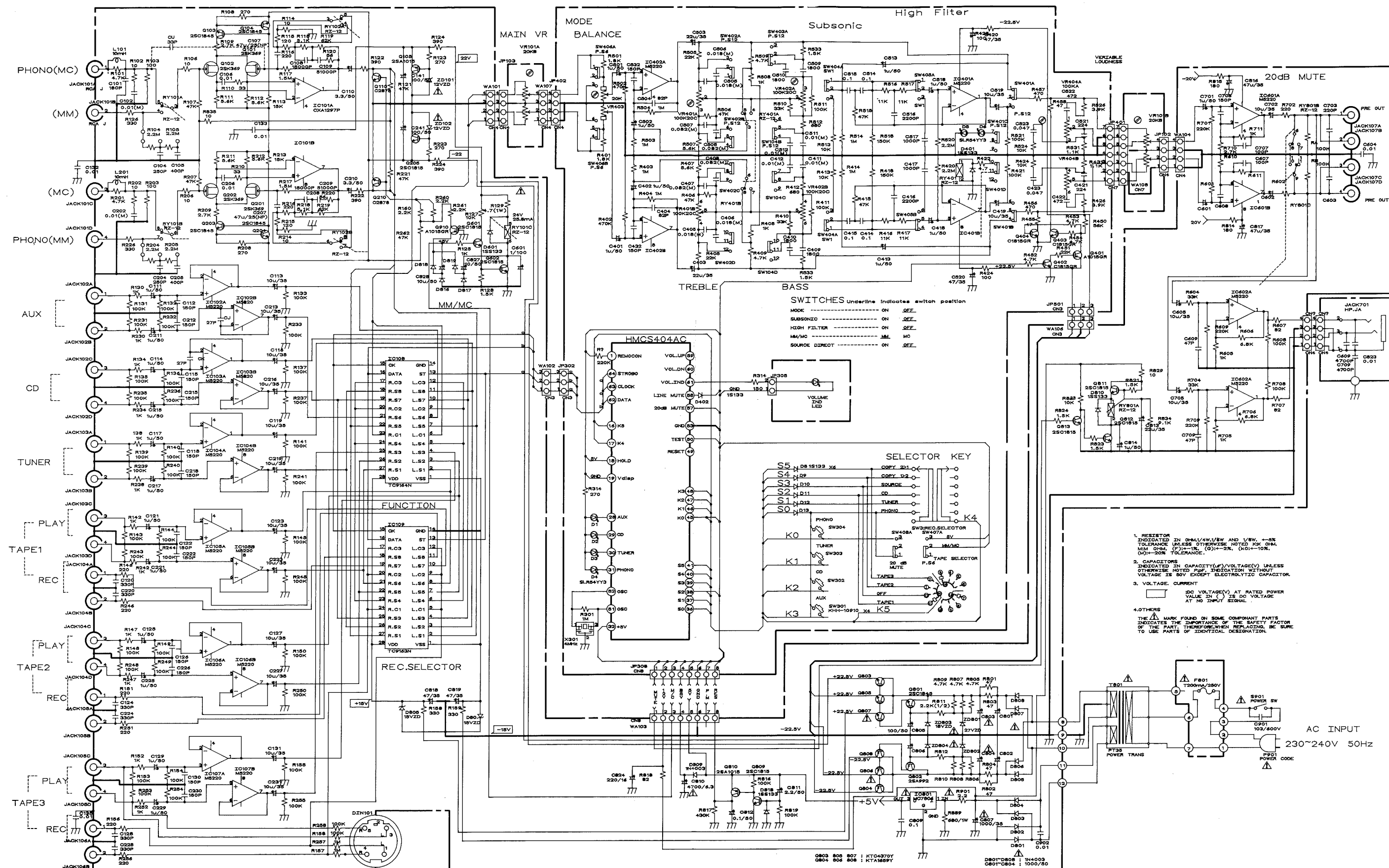
CONTROL PARTS

SYMBOL	PART NO.	DESCRIPTION	
RESISTORS			
R301	111810525	RESISTORS	1M 1/8W
R304.R305.R310.R311	111822425	RESISTORS	220K 1/8W
R312.R313.R330			
R314	111815125	RESISTORS	150 1/8W
R401.R501	111818225	RESISTORS	1.8K 1/8W
R402.R502	111847425	RESISTORS	470K 1/8W
R403.R404.R414.R503	111810525	RESISTORS	1M 1/8W
R504.R514			
R405.R505.R451	111822325	RESISTORS	22K 1/8W
R406.R506	111847325	RESISTORS	47K 1/8W
R407.R507	111856225	RESISTORS	5.6K 1/8W
R408.R508	111810225	RESISTORS	1K 1/8W
R409.R509.R452.R453	111847225	RESISTORS	4.7K 1/8W
R454			
R410.R510	111833325	RESISTORS	33K 1/8W
R411.R421.R511.R521	111810425	RESISTORS	100K 1/8W
R412.R512	111868125	RESISTORS	680 1/8W
R413.R424.R513.R524	111810325	RESISTORS	10K 1/8W
R415.R515	111847325	RESISTORS	47K 1/8W
R416.R417.R516.R517	111811325	RESISTORS	11K 1/8W
R418.R518	111815425	RESISTORS	150K 1/8W
R419.R519	111839225	RESISTORS	3.9K 1/8W
R420.R520	111822525	RESISTORS	2.2M 1/8W
R422	114147023	RESISTORS	47 1W
R423.R523	111812225	RESISTORS	1.2K 1/8W
R425	111420125	RESISTORS	200 1/4W
R426.R427	111527125	RESISTORS	270 1/2W
R456.R457	111847125	RESISTORS	470 1/8W
R455.R458	111847025	RESISTORS	47 1/8W
R450	111856325	RESISTORS	56K 1/8W
DIODES			
D401.D402			
RESONATORS			
X301	213816901-1	CERA, RESO	CST 4.0MGW
SWITCHS			
SW301.SW302.SW303.SW304	220899901	TACT S/W	KHH-10910
SW410.SW402.SW403	220213402	PUSH S/W	NSG-034-0
SW404.SW402.SW406.SW408	220213201	PUSH S/W	NSG-032-0
SW407	220228301	PUSH S/W	SPEA12
SW409	219215201	ROTARY S/W	SRM134
SW410	219215301	ROTARY S/W	SRM126
RELAY			
RY401	214021101	RELAY	RZ-12
VOLUMES			
VR401.VR402	250133101	VR ROUND	100K 20C
VR403	250134801	VR ROUND	20KMN
VR404	250133701	VR ROUND	100KA

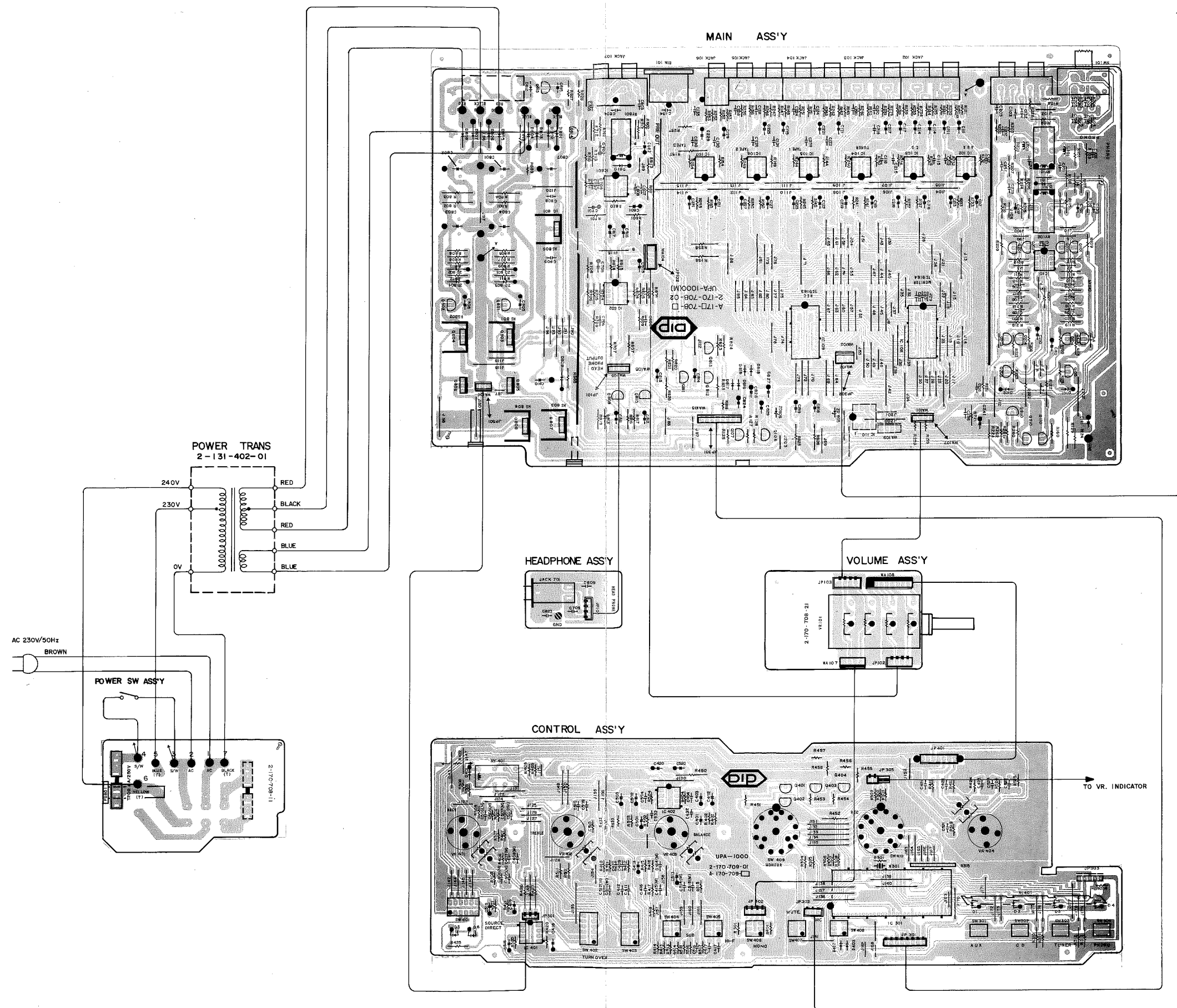
BLOCK DIAGRAM



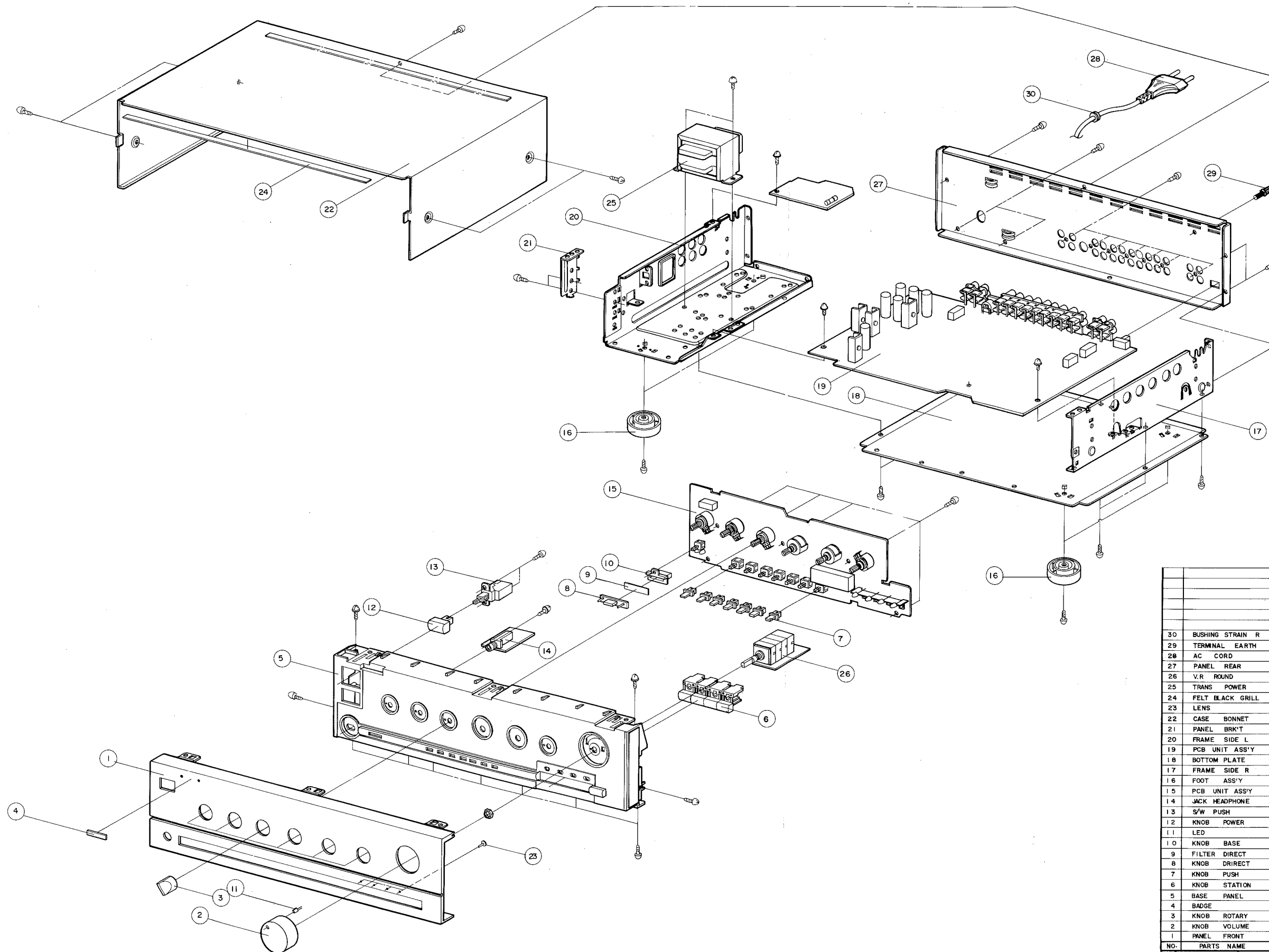
SCHEMATIC DIAGRAM



WIRING DIAGRAM

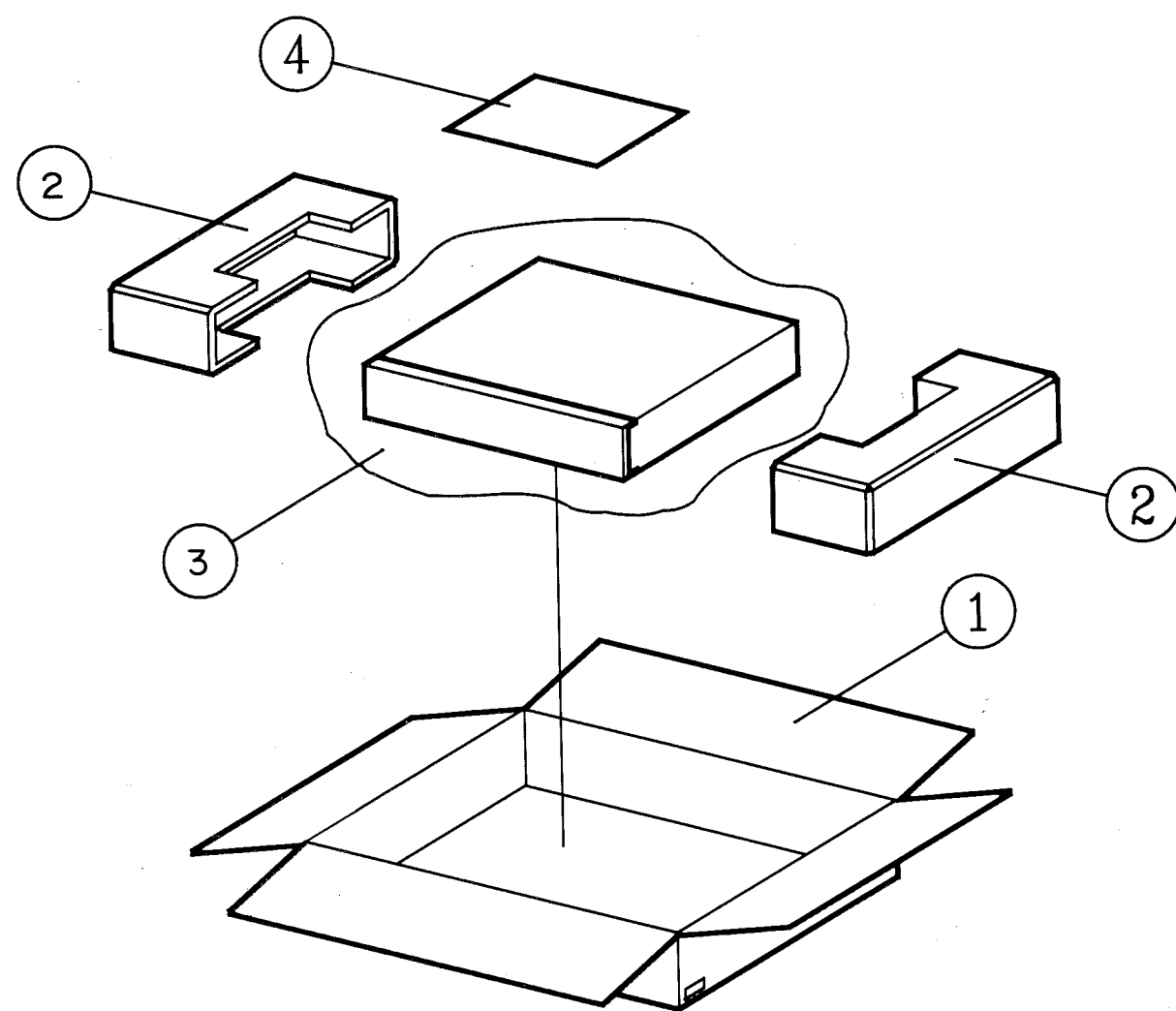


EXPLODED VIEW



NO.	PARTS NAME	PARTS NO.	MATERIAL	Q'TY
30	BUSHING STRAIN R	8-201-115-01		1
29	TERMINAL EARTH	2-155-747-01		1
28	AC CORD	2-211-109-02		1
27	PANEL REAR	3-121-003-01	SECC	1
26	V.R. ROUND	2-501-349-01		1
25	TRANS POWER	2-131-402-01		1
24	FELT BLACK GRILL	3-730-116-01	FELT	2
23	LENS	3-116-106-01	ACRYL	4
22	CASE BONNET	3-121-007-01	SECC+PVC	1
21	PANEL BRK'T	3-116-117-02	SECC	1
20	FRAME SIDE L	3-121-010-01	SECC	1
19	PCB UNIT ASS'Y	A-170-708-01		1
18	BOTTOM PLATE	3-121-008-01	SECC	1
17	FRAME SIDE R	3-121-009-01	SECC	1
16	FOOT ASS'Y	3-120-621-01	HIPS+TPR	4
15	PCB UNIT ASS'Y	A-170-709-01		1
14	JACK HEADPHONE	2-155-616-01		1
13	S/W PUSH	2-202-210-01		1
12	KNOB POWER	3-214-504-01	ABS	1
11	LED	2-419-041-31		1
10	KNOB BASE	3-120-609-01	ABS	1
9	FILTER DIRECT	3-120-624-01	PE FILM	1
8	KNOB DIRECT	3-120-608-01	ACRYL	1
7	KNOB PUSH	3-120-606-01	ABS	7
6	KNOB STATION	3-214-602-01	ABS	1
5	BASE PANEL	3-121-002-01	ABS	1
4	BADGE	3-120-622-01	AKO70-P	1
3	KNOB ROTARY	3-120-604-01	ABS	6
2	KNOB VOLUME	3-120-816-01	ABS	1
1	PANEL FRONT	3-121-001-01	A6063-T5	1

PACKING DRAWING



NO	PARTS NUMBER	DESCRIPTION	Q'TY
1	3-121-004-01	PACKING CASE	1
2	3-316-910-02	SIDE PAD	2
3	3-415-046-01	POLY SHEET	1
4	3-121-015-01	OPERATING MANUAL	1
5			
6			