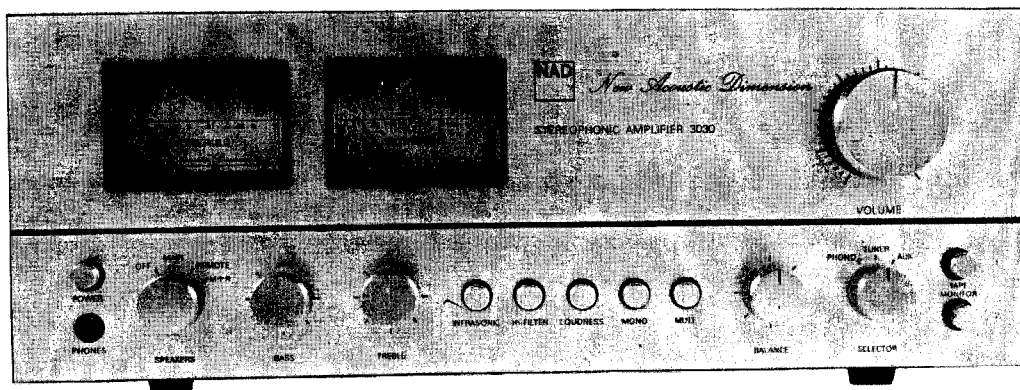




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SERVICE MANUAL

NAD 3030 AMPLIFIER



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SPECIFICATION

* Measurements identified by an asterisk are taken in accordance with the new IHF A-202 amplifier measurement standard.

Power Amplifier Section

* Continuous average power output at 8 ohms 20–20K Hz both channel driven	30W
Rated distortion, 20–20K Hz	< 0.09%
* Clipping headroom at 8 ohms	+ 1.2dB
Clipping power at 8 ohms	40W
at 4 ohms	50W
at 2 ohms	60W
Dynamic headroom at 8 ohms	+2.2dB
Dynamic power at 8 ohms	50W
at 4 ohms	60W
at 2 ohms	70W
* Reactive load rating	+1.7dB
* Transient Overload Recovery Time	< 1μsec.
* Slew Factor	> 50
Slew Rate	15V/μsec.
Damping factor at 50 Hz (Ref. 8 ohms)	50
T.H.D. 20–20K Hz From 250 mW to 30 W	< 0.09%
S.M.P.T.E. I.M.D. (60 Hz + 7KHz, 4:1) From 250mW to 30W	< 0.09%
I.H.F. I.M.D. (19KHz + 20KHz) at 30W	< 0.09%
T.I.M. (15KHz Sine + 3.18KHz Square Wave) at 30W	< 0.09%
Frequency Response, 20–20K HZ	± 0.5dB
Frequency Response Range ± 3dB	5–45K Hz

Preamplifier Section

* Input Impedance Resistance/Capacitance	47KΩ/47PF
Input Sensitivity (1KHz) * For 1 watt out	0.5mV
30 Watt out	2.5mV
Input Overload at 1KHz	190mV
20 Hz	19mV
20 KHz	1.9 V
THD (20–20K Hz) and IMD at + 30dB input level	< 0.02%
RIAA Response Accuracy	± 0.3dB
Signal to Noise Ratio A–weighted	
(a) with phono cartridge connected	Ref 10mV > 80dB
	* Ref 5mV > 74dB
(b) with short-circuit input	Ref 10mV > 84dB

High level input

* Input impedance Resistance/Capacitance	50KΩ/100PF
Input sensitivity * For 1 watt out	30mV
For 30 watt out	150mV
Signal to Noise Ratio, A–Weighted	
(a) with mute off	* Ref 1 watt out > 80dB
	Ref 30 watt out > 92dB
(b) with mute on	Ref 1 watt out > 85dB
* Maximum input signal	infinite
Frequency Response, 20–20K Hz	± 0.5dB

Controls

Bass control, range at 50 Hz	± 10dB
Treble control, range at 10 KHz	± 10dB
Infrasonic filter Turn over frequency	20 Hz
Slope (dB/octave)	12
High filter Turn over frequency	7 KHz
Slope (dB/octave)	6
Mute	–20dB

Physical Specification

Dimensions	W x H x D	inch	15.4 x 5.5 x 12
		cm	39 x 14 x 30.5
Net weight			20 lbs/9 kg
Shipping weight			22 lbs/10 kg
Power Consumption at 1 watt out			30VA
30 watt out			200VA

ALIGNMENT

1. IDLE CURRENT ALIGNMENT

1. 5 Minutes minimum pre-heating is necessary for idle current alignment.
 2. Set the volume control at minimum position.
 3. Speaker switch should be set at off position.
 4. Connect DC voltmeter across R637 for right channel and across R638 for left channel. (see fig. 1)
 5. Record the reading of DC voltmeter and refer to the following chart to find the appropriate value resistor to connect in parallel with R625 (right channel), or R626 (left channel) on the bottom side (pattern side) of PCB.
- * Important notice: The power switch must be in the off position when soldering is done.

Reading of DC Voltmeter	Parallel Resistor	Reading of DC Voltmeter	Parallel Resistor
0.4 to 0.8 mV	1k ohm	3.1 to 4.0 mV	2k2 ohm
0.9 to 1.2 mV	1k2 ohm	4.1 to 5.0 mV	2k7 ohm
1.3 to 2.0 mV	1k5 ohm	5.1 to 6.0 mV	3k3 ohm
2.1 to 2.4 mV	1k8 ohm	6.1 to 7.0 mV	3k9 ohm
2.5 to 3.0 mV	2k ohm	7.1 to 10 mV	4k7 ohm

6. Read the DC voltage across to R637 (right channel) and R638 (left channel) again.
7. If the DC voltage were between 10 mV and 20 mV, then the alignment is completed.
8. If the DC voltage were less than 10 mV, the value of parallel resistor should be increased until the DC voltage is between 10 mV and 20 mV.
9. If the DC voltage were more than 20 mV, the value of parallel resistor should be reduced until the DC voltage is between 10 mV and 20 mV.

2. POWER METER ALIGNMENT

1. Feed a 1KHz sine wave approx 150mV RMS to both channel's Aux inputs.
 2. Connect an 8 ohm (+20%) dummy load and an AC voltmeter and oscilloscope to the "main speaker" terminals on the rear panel.
 3. Set the volume control at maximum position and other controls are set at their normal positions.
 4. Set the speaker switch to "main" position.
- * 5. Adjust the input signal level till the output voltage is 15.5 V making sure that no clipping of the waveform is occurring.
6. Adjust VR 1 (for right channel) and VR 2 (for left channel) for a meter indication of 30 W. (or 0 dB). (sec. fig. 3)
- * In cases of poor mains regulation it is possible that slight clipping occurs at 15.5 V when both channels are driven simultaneously. If this is the case, do the calibration one channel at a time.

ALIGNMENT

3 DC OFFSET ALIGN MENT

1. 5 minutes minimum pre-heating is necessary for DC offset adjustment.
2. Set the volume control at minimum position.
3. Speaker switch should be set to "main" position.
4. Connect a DC milli-voltmeter to the "main speaker" terminals of each channel. The meter sensitivity should be set for 100-300mV full scale deflection. The positive input of the meter should be connected to the red (+) speaker terminal.
5. If the readings are within + 50mV, then no adjustment is necessary.
6. If the reading is more than + 50mV then refer to Table I to find the appropriate value resistor to connect from point A (right) to C (right) on the bottom side (pattern side) of PCB. (see fig. 1)
B (left) to D (left)
7. If the reading is less than -50mV then also refer to Table I to find the appropriate value resistor to connect from point A (left) to E (left) on the bottom side (pattern side) of PCB. (see fig. 1)
B (right) to F (right)
8. Use a piece of insulating sleeve on the resistor legs to avoid shorting to PC board tracks, and make sure the resistor is not pressed against a sharp cut edge of a component leg.
- * Important notice: The power button must be in the off position when soldering is done.

Table I

<u>Reading of DC Milli Voltmeter</u>	<u>*Resistor</u>
50 to 60 mV	100k ohm OR 330k ohm
60 to 75 mV	82k ohm OR 270k ohm
75 to 90 mV	68k ohm OR 220k ohm
90 to 110 mV	56k ohm OR 180k ohm
110 to 135 mV	47k ohm OR 150k ohm
135 to 165 mV	39k ohm OR 120k ohm
165 to 200 mV	33k ohm OR 100k ohm
to mV	ohm OR ohm

9. After having soldered in the resistor, repeat steps 1 through 5.

* If the feedback resistors of power amplifier (R 613, R614) are 10 kohm then select from column A if 33 kohm then select from column B.

ALIGNMENT

- * R_{x1} (Right) R_{x2} (left) For Idle Arent Alignment
- R_{y1} (Right) R_{y2} (left) For DC OFFSET Adjustment (If "+" reading)
- R_{y3} (Right) R_{y4} (left) For DC OFFSET Adjustment (If "-" reading)

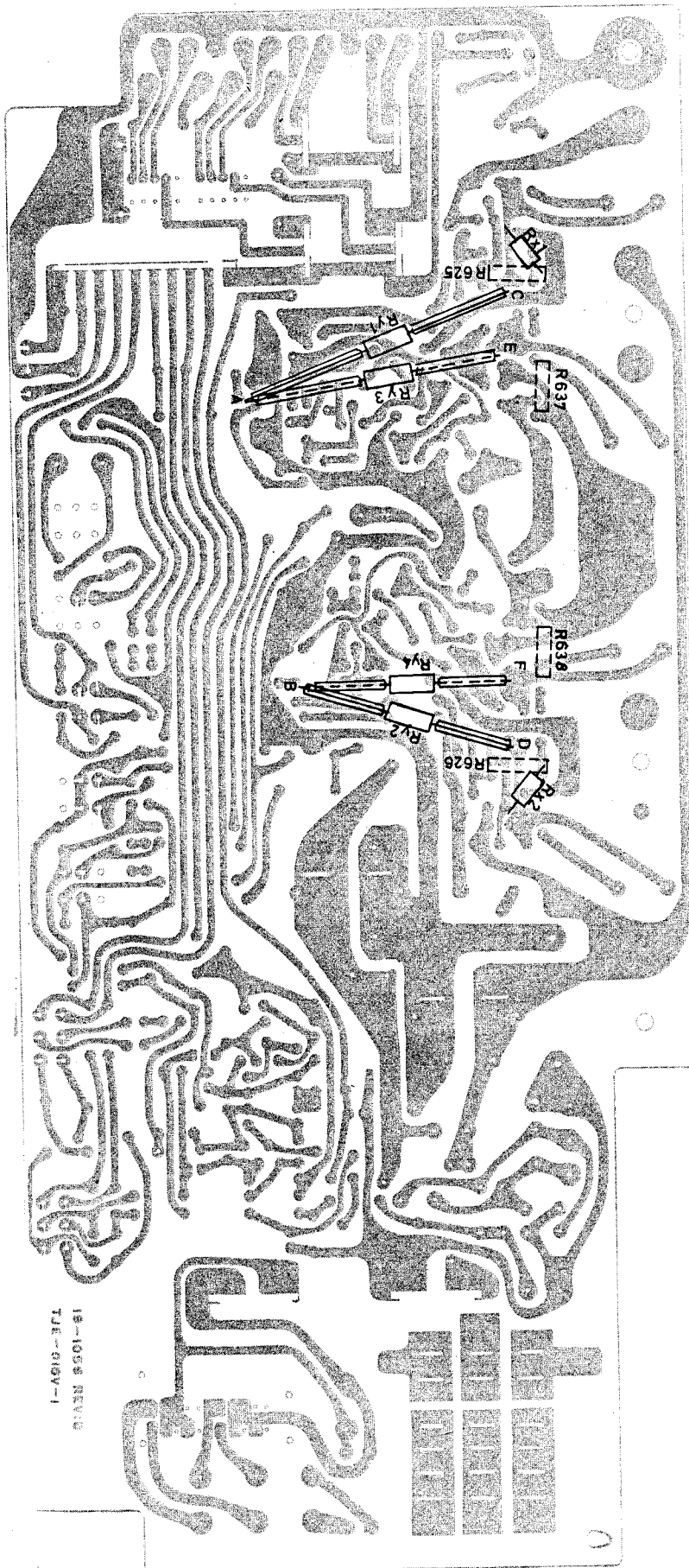
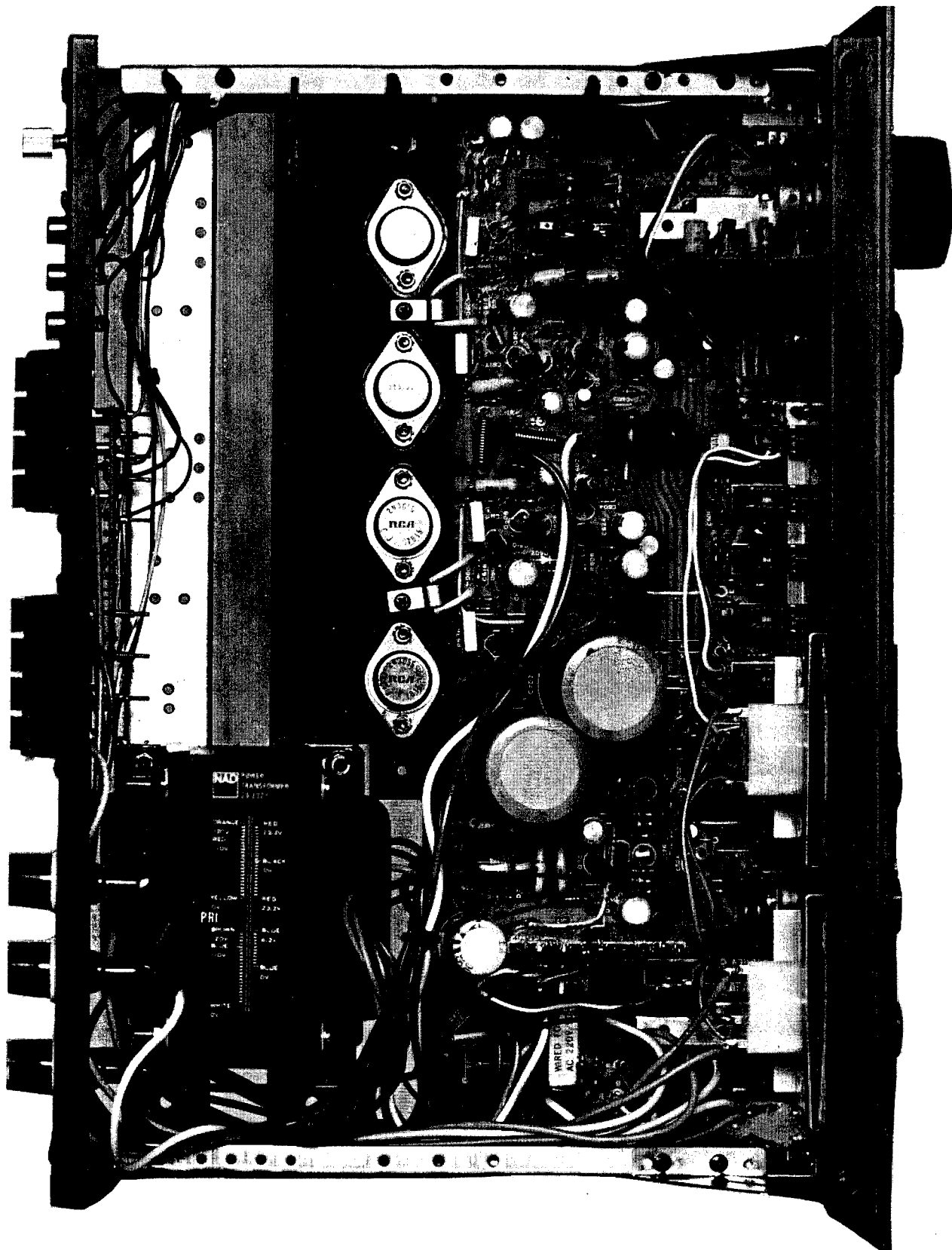


Fig. 1 Patten Side View

INSIDE VIEW OF UNIT



PARTS LOCATION OF PCB

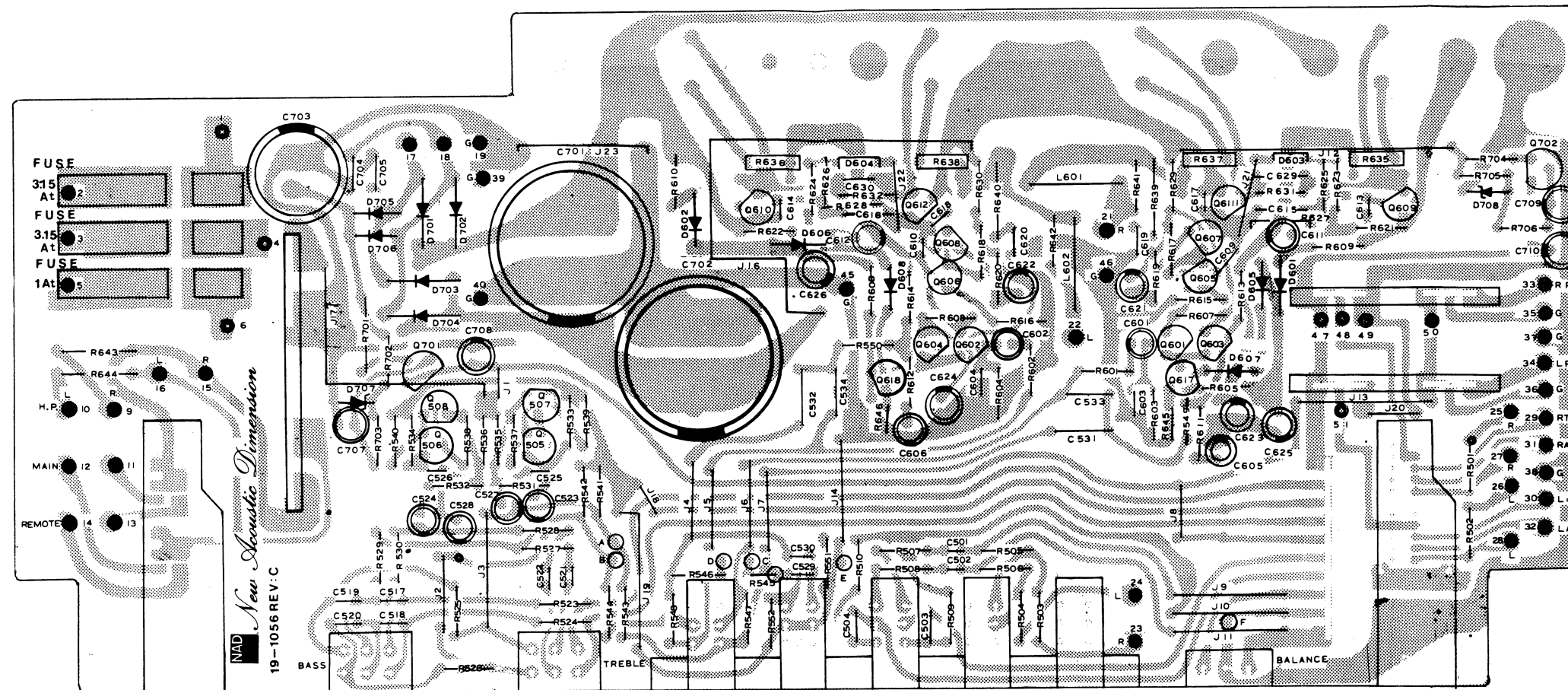


Fig. 2

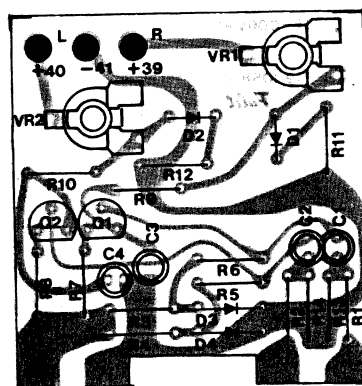


Fig. 3

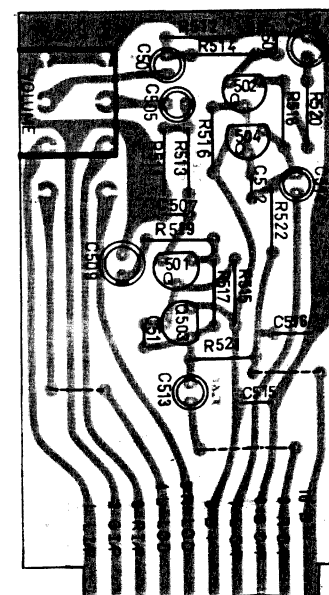


Fig. 4

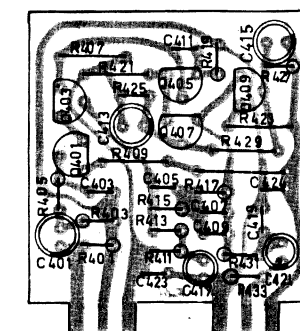
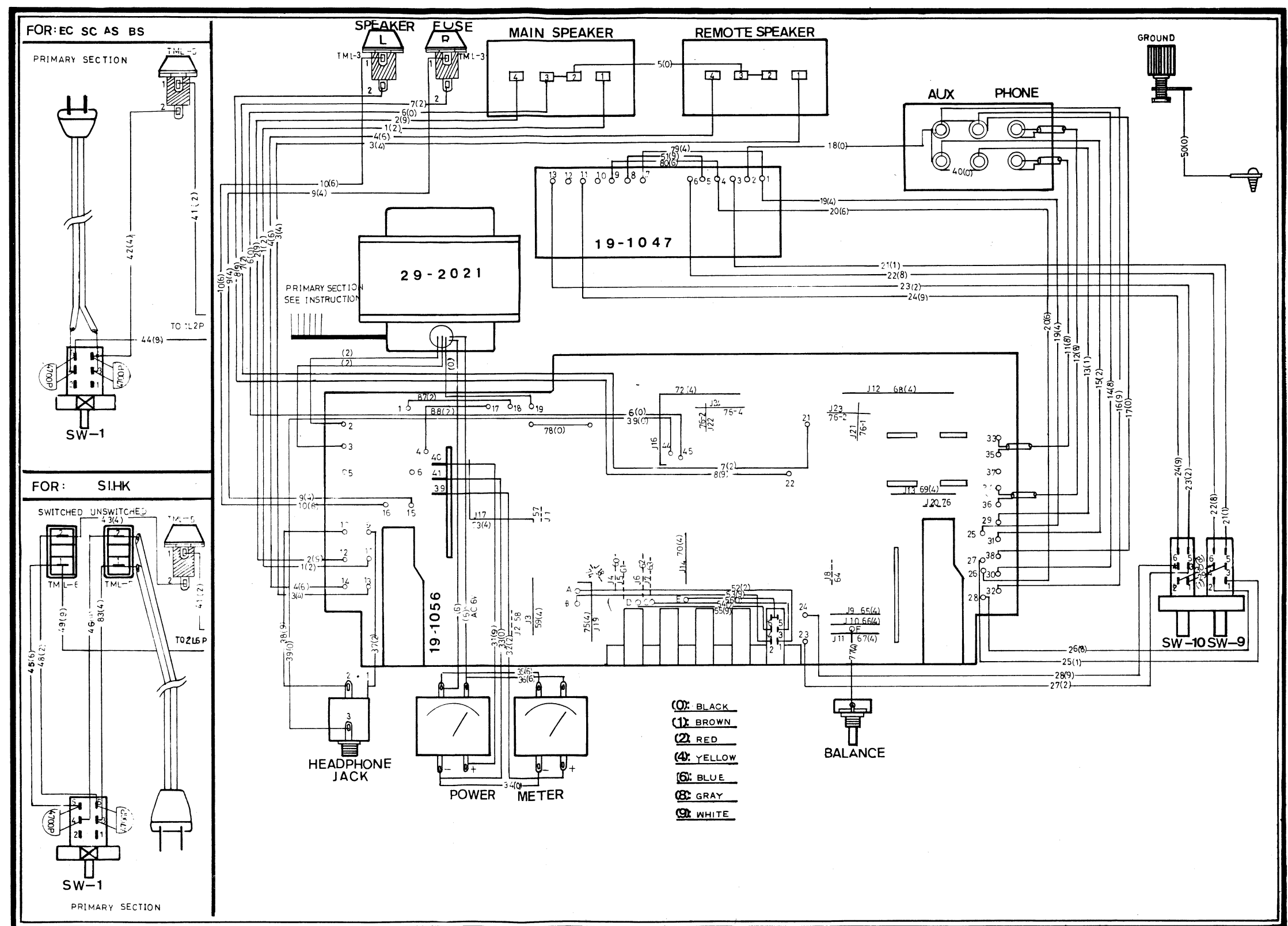
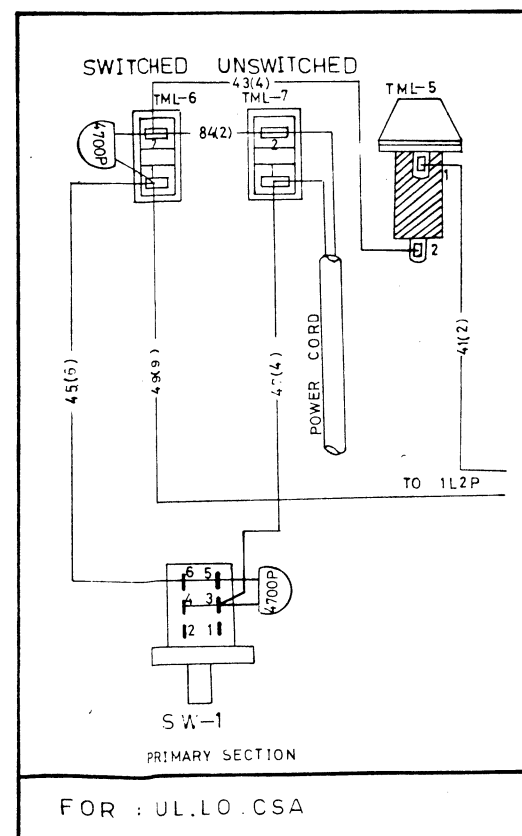
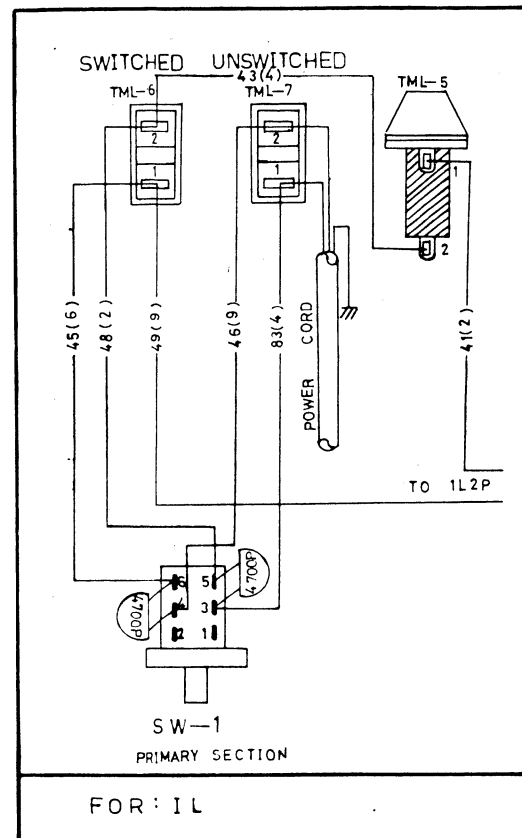
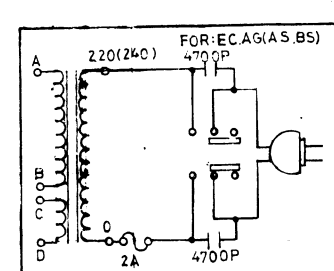
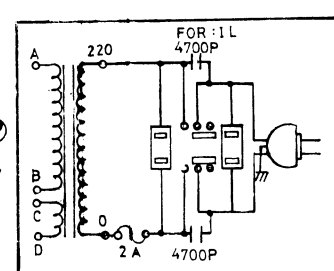
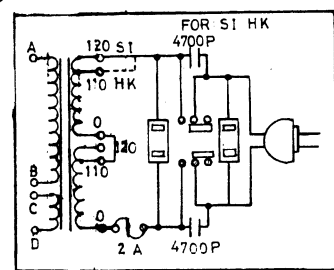
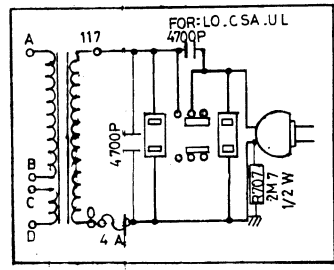


Fig. 5

WIRING DIAGRAM



CIRCUIT DIAGRAM



PARTS LIST

90-1056 MAIN SECTION

ITEM	PARTS NO	DESCRIPTION	Q' TY	SYMBOL NO
1	16-1/2C331J	CARBON RES. 330 OHM 1/2W + - 5%	2	R643, 644
2	16-1/2C5R6J	CARBON RES. 5.6 OHM 1/2W + - 5%	1	R701
3	16-1/4C100J	CARBON RES. 10 OHM 1/4W + - 5%	2	R641, 642
4	16-1/4C101J	CARBON RES. 100 OHM 1/4W + - 5%	5	R617, 620, 629, 630, 706
5	16-1/4C102J	CARBON RES. 1K 1/4W + - 5%	4	R601, 602, 703, 704
6	16-1/4C103J	CARBON RES. 10K 1/4W + - 5%	3	R529, 530, 705
7	16-1/4C104J	CARBON RES. 100K 1/4W + - 5%	4	R533, 534, 541, 542
8	16-1/4C152J	CARBON RES. 1.5K OHM 1/4W + - 5%	2	R611, 612
9	16-1/4C153J	CARBON RES. 15K OHM 1/4W + - 5%	4	R523-526
10	16-1/4C155J	CARBON RES. 1.5M OHM 1/4W + - 5%	2	R531, 532
11	16-1/4C221J	CARBON RES. 220 OHM 1/4W + - 5%	4	R609, 610, 631, 632
12	16-1/4C222J	CARBON RES. 2.2K 1/4W + - 5%	4	R607, 608, 621, 622
13	16-1/4C273J	CARBON RES. 27K 1/4W + - 5%	4	R549, 550, 507, 508
14	16-1/4C331J	CARBON RES. 330 OHM 1/4W + - 5%	4	R615-618
15	16-1/4C332J	CARBON RES. 3.3K OHM 1/4W + - 5%	1	R702
16	16-1/4C390J	CARBON RES. 39 OHM 1/4W + - 5%	2	R539, 540
17	16-1/4C391J	CARBON RES. 390 OHM 1/4W + - 5%	2	R605, 606
18	16-1/4C392J	CARBON RES. 3.9K OHM 1/4W + - 5%	2	R535, 536
19	16-1/4C393J	CARBON RES. 39K OHM 1/4W + - 5%	2	R603, 604
20	16-1/4C472J	CARBON RES. 4.7K OHM 1/4W + - 5%	8	R501-506, 623, 624
21	16-1/4C474J	CARBON RES. 470K OHM 1/4W + - 5%	4	R551, 552, 547, 548
22	16-1/4C562J	CARBON RES. 5.6K OHM 1/4W + - 5%	6	R509, 510, 545, 546, 537, 538
23	16-1/4C563J	CARBON RES. 56K OHM 1/4W + - 5%	2	R543, 544
24	16-1/4C681J	CARBON RES. 680 OHM 1/4W + - 5%	2	R625, 626
25	16-1/4C682J	CARBON RES. 6.8K OHM 1/4W + - 5%	2	R627, 628
26	16-1/4C822J	CARBON RES. 8.2K OHM 1/4W + - 5%	2	R627, 628
27	16-1002	0.47 OHM + - 5% 2W MPC 70	4	R635-638
28	16-2A100K	METAL OXIDE RES. 10 OHM 2W + - 10%	2	R639, 640
29	17-0.63E107Y	ELEC CAPA 100UF 6.3V + 50 - 10%	2	C621, 622
30	17-2.5E475Y	ELEC CAPA 4.7UF 25V + 75 - 10%	6	C523, 524, 527, 528, 601, 602
31	17-0.63E476Y	ELEC CAPA 47UF 6.3V + 50 - 10%	2	C605, 606
32	17-2.5E476Y	ELEC CAPA 47UF 25V + 50 - 10%	4	C707-710
33	17-3.5E107Y	ELEC CAPA 100UF 35V + 50 - 10%	4	C623-626
34	17-3.5E108Y	ELEC CAPA 1000UF 35V + 50 - 10%	1	C703
35	17-3.5E476Y	ELEC CAPA 47UF 35V +50 -10%	2	C611, 612
36	17-3.5P688Y	ELEC CAPA 6800UF 35V	2	C701, 702
37	17-5D101K	CER. CAPA 100P + - 10% 50V	4	C613, 614, 617, 618
38	17-5D103M	CER. CAPA 0.01UF + - 20% 50V	2	C704, 705
39	17-5D104M	CER. CAPA 0.1UF + - 20% 50V	4	C619, 620, 627, 628
40	17-5D201K	CER. CAPA 200PF + - 10% 50V	2	C603, 604
41	17-5D220K	CER. CAPA 22PF + - 10% 50V	2	C525, 526
42	17-5D470K	CER. CAPA 47PF + - 10% 50V	2	C609, 610
43	17-5D471K	CER CAPA 470PF + - 10% 50V	2	C501, 502
44	17-5F103M	MYLAR CAPA 0.01UF 50V + -20%	2	C615, 616
45	17-5F104J	MYLAR 0.1UF	2	C623, 624
46	17-5F152J	MYLAR CAPA 0.0015UF 50V + - 5%	2	C521, 522
47	17-5F154K	MYLAR CAPA 0.15UF 50V + - 10%	2	C503, 504
48	17-5F274K	MYLAR CAPA 0.27UF 50V + - 10%	2	C533, 534
49	17-5F334K	MYLAR CAPA 0.33UF 50V + - 10%	2	C531, 532
50	17-5F473J	MYLAR CAPA 0.047UF 50V + - 5%	4	C517-520
51	17-5F822J	MYLAR CAPA 0.0082UF 50V + - 5%	2	C529, 530
52	19-1056	P. C. B. (MAIN AMP)	1	
53	29-1040	INDUCTOR 0.6 x 15T	2	L601, 602
54	29-4028	VOLUME CONTROL GM 70E-50KB x 2	2	
55	29-4045	VOLUME CONTROL VM10E-250KW	1	
56	30-2115	TEANSISTOR 2N6552	4	Q607-610
57	30-1002	DIODE IN4002	2	D703, 704
58	30-1016	ZENER DIODE 23V 0.5W	2	D707, 708
59	30-1017-1	DIODE GI3B	4	D701-704
60	30-1019	DIODE BAW 62	6	D601, 602, 605-608
61	30-1024	VARISTOR SV04	2	D604, 603
62	30-2004R	TRANSISTOR 2N3055	2	Q613, 614
63	30-2077	TRANSISTOR 2SC1384Q	1	Q701
64	30-2081	TRANSISTOR 2AS608E	6	Q601-604, 617, 618
65	30-2096	TRANSISTOR BC556	3	Q507, 508, 702
66	30-2101	TRANSISTOR 2SC 1571G	4	Q505, 506, 605, 606
67	30-2114M	TRANSISTOR MJ2955	2	Q615, 616
68	30-2116	TRANSISTOR 2N6555	2	Q611, 612
69	30-1024	SELECTOR SW. SRZ-V044N (12.5)	1	
70	31-1040	PUSH SW. 5 KEY 2U	1	
71	31-1051	ROTARY SW. SRZ-V043 (12.5)	1	
72	16-1/4C183J	CARBON RES. 18K OHM 1/4W + - 5%	2	R545, 546
73	16-1/4C333J	CARBON RES. 33K OHM 1/4W + - 5%	2	R613, 614

90-1057 High Level Pre-Amp Section

ITEM	PARTS NO	DESCRIPTION	Q' TY	SYMBOL NO
74	16-1/4C224J	CARBON RES. 220K OHM 1/4W + - 5%	2	R511, 512
75	16-1/4C392J	CARBON RES. 3.9K OHM 1/4W + - 5%	2	R521, 522
76	16-1/4C561J	CARBON RES. 560 OHM 1/4W + - 5%	2	R513, 514
77	16-1/4C562J	CARBON RES. 5.6K OHM 1/4W + - 5%	4	R515-516
78	16-1/4C821J	CARBON RES. 820 OHM 1/4W + - 5%	2	R519, 520
79	17-0.63E107Y	ELEC CAPA 100UF 6.3V + 50 - 10%	2	C509, 510
80	17-2.5E476Y	ELEC CAPA 4.7UF 25V + 75 - 10%	4	C515, 506, 513, 514
81	17-5D101K	CER. CAPA 100PF + - 10% 50V	2	C507, 508
82	17-5D102M	CER. CAPA 1000PF + - 20% 50V	2	C515, 516
83	17-5D220K	CER. CAPA 22PF + - 10% 50V	2	C511, 512
84	19-1057	P. C. B.	1	
85	29-4059	VOLUME CONTROL 100KB x 2	1	
86	30-2096	TRANSISTOR BC556	2	Q503, 504
87	30-2101	TRANSISTOR 2SC1571G	2	Q501, 502

90-1058 Meter Driver Section

88	13-6004	PIN	3	
89	16-1/4C101J	CARBON RES. 100 OHM 1/4W + - 5%	2	R807, 808
90	16-1/4C103J	CARBON RES. 10K 1/4W + - 5%	4	R809-812
91	16-1/4C104J	CARBON RES. 100K OHM 1/4W + - 5%	2	R805, 806
92	16-1/4C123J	CARBON RES. 12K 1/4W + - 5%	2	R813, 814
93	16-1/4C473J	CARBON RES. 47K 1/4W + - 5%	2	R801, 802
94	16-1/4C334J	CARBON RES. 330K 1/4W + - 5%	2	R804, 803
95	17-1E106Y	ELEC CAPA 10UF 10V + 50 - 10%	2	R803, 804
96	17-2.5E475Y	ELEC CAPA 4.7UF 25V + 75 - 10%	2	C801, 802
97	19-1058	P. C. B. (METER DRIVER)	1	
98	29-4023-1	SEMIFIXED RES. 20KB	2	
99	30-1019	DIODE BAW62	4	D801-804
100	30-2090	TRANSISTOR BC546	2	Q801, 802

90-1062 Phono Pre-Amp Section

101	16-1/4C101J	CARBON RES. 100 OHM 1/4W + - 5%	4	R405, 406, 431, 432
102	16-1/4C102J	CARBON RES. 1K 1/4W + - 5%	4	R425-428
103	16-1/4C105J	CARBON RES. 1M 1/4W + - 5%	2	R417, 418
104	16-1/4C106J	CARBON RES. 10M 1/4W + - 5%	2	R411, 412
105	16-1/4C162J	CARBON RES. 1.6K 1/4W + - 5%	2	R413, 414
106	16-1/4C221J	CARBON RES. 220 OHM 1/4W + - 5%	2	R423, 424
107	16-1/4C222J	CARBON RES. 2.2K 1/4W + - 5%	2	R409, 410
108	16-1/4C331J	CARBON RES. 330 OHM 1/4W + - 5%	2	R419, 420
109	16-1/4C333J	CARBON RES. 33K 1/4W + - 5%	2	R429, 430
110	16-1/4C334J	CARBON RES. 330K 1/4W + - 5%	2	R433, 434
111	16-1/4C392J	CARBON RES. 3.9K 1/4W + - 5%	2	R407, 408
112	16-1/4C474J	CARBON RES. 470K 1/4W + - 5%	2	R401, 402
113	16-1/4C563J	CARBON RES. 56K 1/4W + - 5%	2	R403, 404
114	16-1/4C820J	CARBON RES. 82 OHM 1/4W + - 5%	2	R421, 422
115	16-1/4C823J	CARBON RES. 82K OHM 1/4W + - 5%	2	R415, 416
116	17-0.63E476Y	ELEC CAPA 47UF 6.3V + 50 - 10%	6	C413-418
117	17-2.5E475Y	ELEC CAPA 4.7UF 25V + 75 - 10%	2	C421, 422
118	17-2.5E106Y	ELEC CAPA 10UF 25V + 50V - 10%	2	C401, 402
119	17-5D100K	CER. CAPA 10PF + - 10% 50V	2	C411, 412
120	17-5D101K	CER. CAPA 100PF + - 10% 50V	2	C419, 420
121	17-5D102M	CER. CAPA 1000PF + - 20% 50V	4	C423-426
122	17-5D500K	CER. CAPA 50PF + - 10% 50V	2	C403, 404
123	17-5F102J	MYLAR CAPA 0.001UF 50V + - 5%	2	C405, 406
124	17-5F152J	MYLAR CAPA 0.0015UF 50V + - 5%	4	C407-410
125	18-1004-8	CORE ASS'Y	2	
126	19-1062	P. C. B. (EQ)	2	
127	30-2084-3	TRANSISTOR BC549	2	Q403, 404
128	30-2085-2	TRANSISTOR BC546B	2	Q401, 402
129	30-2090-2	TRANSISTOR BC546B	2	Q409, 410
130	30-2096	TRANSISTOR BC556A	4	Q405-408

Other

131	12-2007	SPEAKER TERMINAL SOCKET	2	
132	12-2008	PHONE JACK	1	
133	12-2015	DIN JACK	1	
134	16-1/4C224J	CARBON RES. 220K + - 5% 1/4W	2	R555, 556
135	16-1/4C154J	CARBON RES. 150K + - 5% 1/4W	2	R553, 554
136	19-1047	PCB	1	
137	31-1025T	PUSH SWITCH 2 KEY	1	
138	35-1013	POWER METER	2	