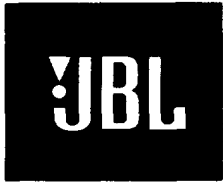


# Technical Manual



# JBL MPA400

## SPECIFICATIONS

	4 ohm/ch	8 ohm/ch	8 ohm/Br	4 ohm Br
<b>Rated Power:</b>	400 W	275 W	800 W	—
<b>Midband Power:</b>	450 W	300 W	—	1200 W
<b>Rated Power:</b>	is minimum continuous sine wave output per channel, with both channels driving their rated load over a power bandwidth of 20 Hz to 15 kHz, as the amplifier's output protective circuitry prevents full power output above 15 kHz. THD = 0.1%.			
<b>Midband Power:</b>	is maximum output power per channel @ 1 kHz, with both channels driven to the onset of clipping. THD > 1%.			
<b>Distortion:</b>	SMPTE-1M, less than 0.05%			
<b>Frequency Response:</b>	20 Hz to 20 kHz, ± 0.1 dB 8 Hz to 100 kHz, +0/-3 dB			
<b>Damping Factor:</b>	Greater than 200			
<b>Dynamic Headroom:</b>	3 dB at 4 ohms			
<b>Noise:</b>	100 dB below rated output (20 Hz to 20 kHz)			
<b>Sensitivity:</b>	1 Vrms for rated power (8 ohms)			
<b>Voltage Gain:</b>	45 (33 dB)			
<b>Input Impedance:</b>	Line: 10 kilohms unbalanced, 20 kilohms balanced			

**Controls:** Front: AC switch, Ch. 1 & Ch. 2 Gain (2 dB detents)  
Rear: Mode select switch (Bridge, Parallel, Stereo)

**Indicators:** Power, Signal Present (2), -20 dB (2), -10 dB (2), Clip (2), Protect (2)

**Connectors:** Input: Barrier Strip & XLR connectors  
Output: 5-Way Binding Posts & Neutrik Speakons

**Cooling:** Continuously variable speed fan, rear-to-front air flow

**Amplifier Protection:** Full short circuit, open circuit, ultrasonic, and RF protection; thermal limiting/muting; stable into reactive or mismatched loads

**Load Protection:** On/Off muting, clip limiting, DC-fault load-grounding relay with internal fault fuses

**Output Circuit Type:** Complementary 2-step linear high efficiency outputs

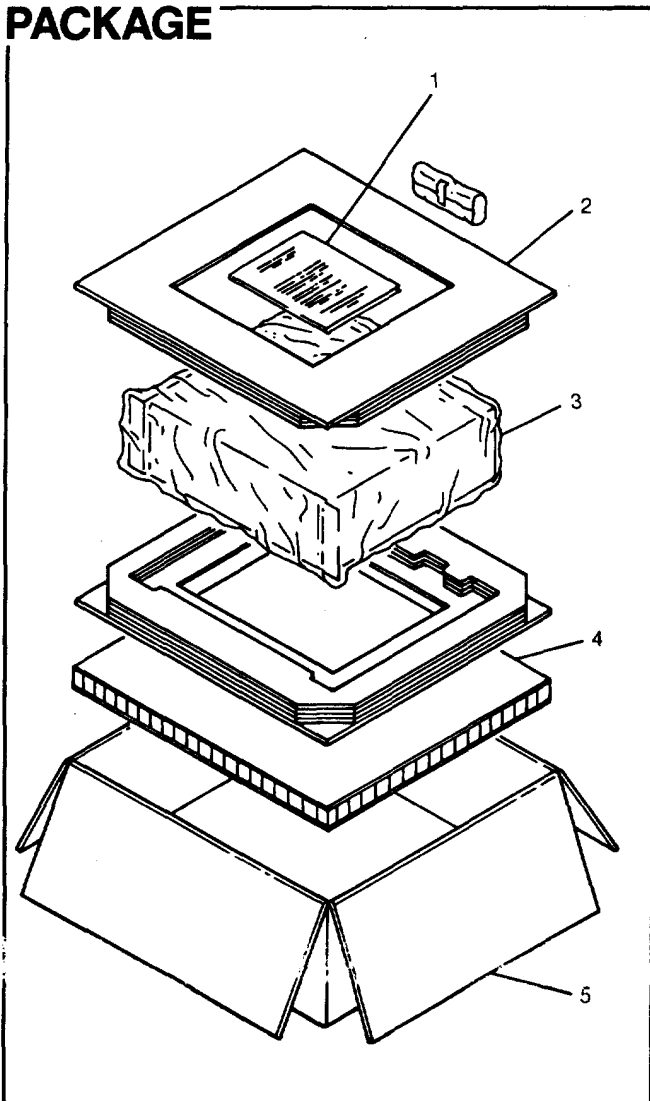
**Power Requirements:** 100, 120, 220-240 VAC, 50-60 Hz

**Power Consumption:** Please refer to chart in MPA Series Owner's Manual

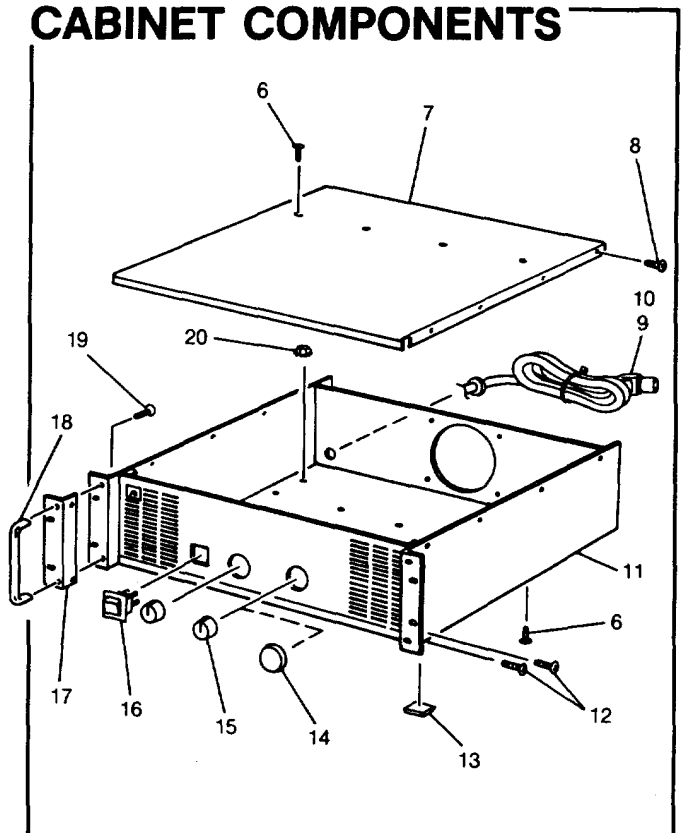
**Dimensions:** 48.3 cm (19") rack mounting  
45.5 cm (17.9") deep (rear support ears)  
8.9 cm (3.5") high (2 spaces)

**Weight:** 19.1 kg. (42 lbs.) net, 21.2 kg. (47 lbs.) shipping

## PACKAGE



## CABINET COMPONENTS



## COMPONENT PARTS LIST

Item	Part No.	Qty.	Description	Ref. Des.
<b>COMPLETE ASSEMBLIES</b>				
A	WP-004106-00	1	AC PCB Ass'y, MPA 2 spc	
C	FG-004102-10	2	Main PCB Ass'y, MPA400	
D	WP-004108-00	1	Output PCB Ass'y, MPA 2 spc	
E	WP-004005-01	1	Std. Input PCB Ass'y, MPA Series	
G	WP-002753-00	1	Display PCB Ass'y, MPA Series	

JBL MPA400 REV B

# JBL MPA400

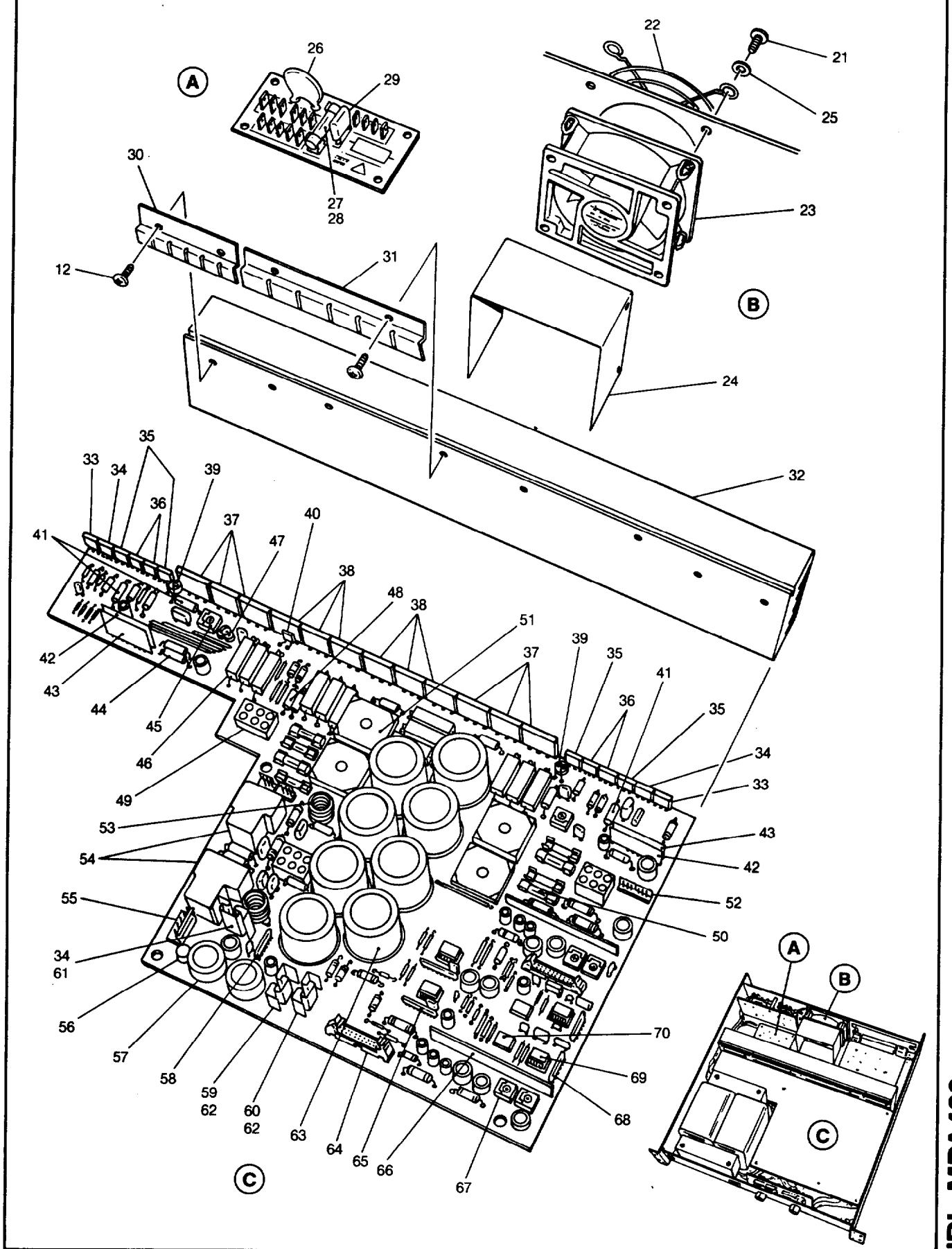
## COMPONENT PARTS LIST

Item	Part No.	Qty.	Description	Ref. Des.
<b>INDIVIDUAL ASSEMBLIES</b>				
0	MPA-MPA SVC	1	MPA Service Manual	
1	TD-007500-00	1	Owner's Manual, MPA Series	
2	PM-004003-00	2	Shipping Insert	
3	PM-004000-00	1	Shipping Bag	
4	PM-004001-00	1	Shipping Pad	
5	PM-002750-00	1	Shipping Carton, MPA 2 spc	
6	SC-082051-PL	10	Scrw, Tap, PHP, 8 x 5/16", Blk	
7	CH-002750-00	1	Top Cover	
8	SC-083061-PF	9	Scrw, #8 x 3/8", FHP, Blk	
9	WC-003053-00	1	AC Cord (100/120V)	
10	WC-003069-00	1	AC Cord (230V)	
11	CH-002751-00	1	Chassis, MPA 2 spc	
12	SC-100061-PS	8	Scrw, 10-32 x 3/8", PHP, SEMS, Blk	
13	PL-000000-AF	4	Adhesive Foot	
14	PL-002753-00	2	Security Cover	
15	PL-002752-00	2	Knob, MPA Series	
16	SW-002750-00	1	Power Switch	
17	CH-002752-00	2	Rack Ear, MPA 2 spc	
18	CH-002753-00	2	Handle, MPA 2 spc	
19	SC-100000-SC	4	Scrw, 10-32 x 1/4", PPH, Blk	
20	NW-080500-KP	11	8-32 Keps Nut	
21	PL-000045-PL	4	Rivet, Plastic, Screw Type	
22	MS-000071-00	1	Fan Guard, MPA 2 spc	
23	MS-000052-MS	1	3.5" Fan, 24 VDC	
24	PL-000018-00	1	Fan Shroud	
25	NW-080002-00	4	Washer, #8 Flat	
26	RE-000170-NR	1	Thermistor, NTC, 30A Cur. Lim (100 & 120V models only)	R90102
26	RE-000160-NR		Thermistor, NTC, 15A Cur. Lim (230V models only)	R901
27	MS-000050-MS	1	Fuse, 20A, 250V (100 & 120V models only)	F901
28	MS-120250-FU	1	Fuse, 12A, 250V (230V models only)	F901
29	CA-368250-AS	1	Cap, Surge, 0.068µF 250VAC	C901
30	CH-400003-00	2	Clamp, TO-220	
31	CH-000624-AX	2	Clamp, TO3, 6 Finger	
32	CH-410008-00	1	Heatsink, MPA 2 spc	
33	QD-000019-QD	2	Xstr, PNP TO-220, 230V, 1A	Q501, Q601
34	QD-000018-QD	3	Xstr, NPN TO-220, 230V, 1A	Q51, Q502, Q602
35	QD-000810-DX	4	Diode, Rectifier, TO-220, 100V, 8A	D501, D502, D601, D602
36	QD-000031-QD	4	FET, NCHAN, TO-220, 60V, 50A	Q503, Q504, Q603, Q604
37	QD-003281-NP	6	Xstr, NPN, TO-3P, 200V, 15A	Q505, Q506, Q507, Q605, Q606, Q607
38	QD-001302-PN	6	Xstr, PNP, TO-3P, 200V, 15A	Q508, Q509, Q510, Q608, Q609, Q610
39	QD-004004-VP	4	Diode, D041, 400V, 1A	D505, D506, D605, D606
40	RW-000006-VP	2	Res., PTC, 60C, 0.1K max cold	R598, R698
41	RE-.27005-EM	4	Res., MF, 2.7, 5%, 2W	R509, R512, R609, R612
42	IC-000009-00	2	SMT Module, Neg. Step Driver	U502, U602
43	IC-000008-00	2	SMT Module, Pos. Step Driver	U501, U502
44	RE-130005-EM	4	Res. MOFF, 3K, 5%, 2W	R514, R526, R614, R626
45	PT-110000-AT	2	Var. Res., 100, 20%, 0.15W	VR501, VR601

Item	Part No.	Qty.	Description	Ref. Des.
46	RE-.02205-FW	12	Res., WW, 0.22, 10%, 3W	R515, R516, R517, R520, R521, R522, R615, R616, R617, R620, R621, R622
47	RE-000050-NR	2	Thermistor, NTC, 50 ohm	R599, R699
48	QD-005402-DX	4	Diode, Rectifier, D027, 200V, 3A	D507, D508, D607, D608
49	CO-000047-CO	3	Header, Vert. Pin 6p	J52, J501, J601
50	MS-15.125-MS	8	Fuse, 15A, 125V, 5mm x 20mm	F501-504, F601-604
51	QD-400400-BX	4	Diode, Bridge Rect., 400V, 40A	BR501, BR502, BR601, BR602
52	CO-000074-00	2	Header, Polarized, 8p	J502, J602
53	XF-200014-CR	2	Inductor, 2µH, 14 AW	L501, L601
54	SW-000029-SW	2	Relay, Spkr Prot., SPDT, 24 VDC	K501, K601
55	CO-000046-CO	1	Header, .156, 5p	J51
56	QD-1.5200-BX	1	Diode, Bridge Rect., 200V, 1.5A	BR51
57	CA-822035-AE	2	Cap, EL, 2200µF 35V	C53, C54
58	RN-127002-BM	1	Res. Ntwk., 8 pin SIP, 2.7K	RN51
59	QD-007815-QD	1	Regulator, Pos 15V, TO-220	U52
60	QD-007915-QD	1	Regulator, Neg 15V, TO-220	U51
61	MS-000048-HS	1	Heatsink, TO-220 Isol.	
62	MS-001220-HS	2	Heatsink, TO-220 AAVID 5939B	
63	CA-915050-AE	8	Cap, EL, 15000µF 50V	C508, C509, C510, C511, C608, C609, C610, C611
64	CO-000055-CO	2	14p Header/Locking Std.	J503, J603
65	RN-110002-BM	2	Res. Ntwk., 8p, SIP, 1K	RN502, RN602
66	IC-000010-00	2	SMT Module, Housekeeping	U503, U603
67	PT-250000-AT	4	Res., Var., 5K, 20%, 0.15W CF	VR502, VR503, VR602, VR603
68	RN-210002-BM	2	Res. Ntwk., 8p, SIP, 10K	RN501, RN601
69	IC-005532-OP	4	IC, Dual OpAmp, NE5532	U505, U506, U605, U606
70	QD-000009-VT	2	Vactrol VTL5C4	U504, U604
71	CO-000001-DB	2	Dual 5-Way Binding Post	
72	HW-060150-SO	2	Standoff, 6-32 x 29/32"	
73	NW-100700-NW	4	#10 Flat Washer	
74	NW-100710-NW	4	#10 Ext. Flatwasher	
75	SC-100000-SC	4	Scrw, 10-32 x 1/4", PPH, Blk	
76	SC-060042-PP	5	Scrw, 6-32 x 1/4", PHP, SEMS, Blk	
77	CO-000036-CO	3	Neutrik Speakon, 4p, PC mt	J74, J706, J806
78	CA-147100-BD	2	Cap, Ceramic, 470pF 100V	C701, C801
79	CH-400016-00	1	Blank Upper Input Panel	
80	SC-080051-PS	4	Scrw, 8-32 x 5/16", PHP, SEMS, Blk	
81	CO-000035-CO	1	Barrier Strip, Rt. Angle, PC mt	J31
82	SW-000041-SW	1	DPDT Toggle Sw, Rt. Angle, PC mt	SW31
83	SC-030000-SC	4	Scrw, 3mm x 4mm, PHP, Blk	
84	NW-0401-NW	4	#4 Flat Washer	
85	CO-000037-CO	2	XLR Recept., Horiz., PC mt	J301, J401
86	CO-000049-CO	1	5p Header, 0.1 ctr	J33
87	CO-000057-CO	1	26p Header/Locking Std.	J32
88	XF-001000-00	1	Xfmr, MPA400	
89	SC-100061-PS	4	Scrw, 10-32 x 3/8", PHP, SEMS, Blk	
90	CO-000043-CO	1	Box Header, 26p	J1
91	WC-000026-WC	1	26p Ribbon Cable Ass'y	
92	CO-000044-CO	2	Box Header, 14p	
93	WC-000015-WC	2	14p Ribbon Cable Ass'y	

# JBL MPA400

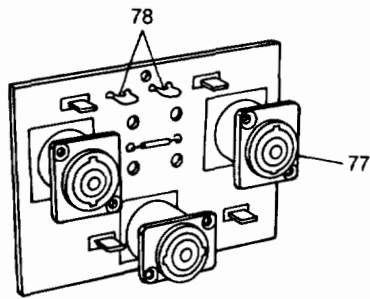
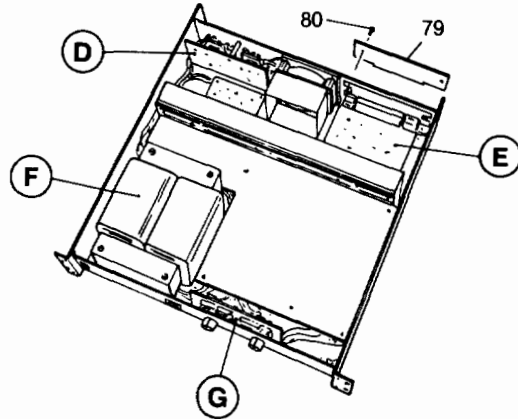
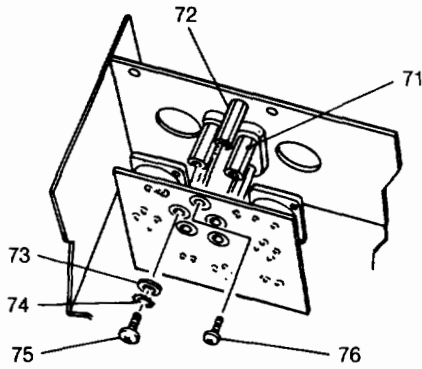
## COMPONENT EXPLODED VIEW



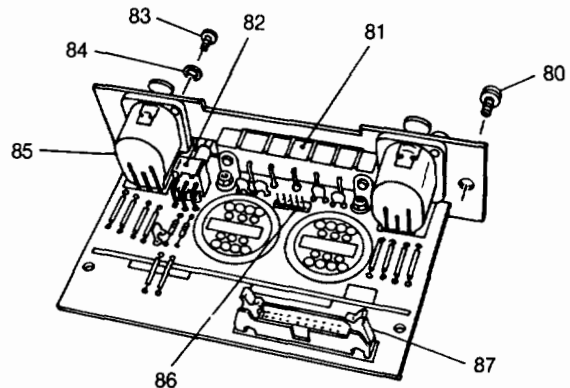
JBL MPA400

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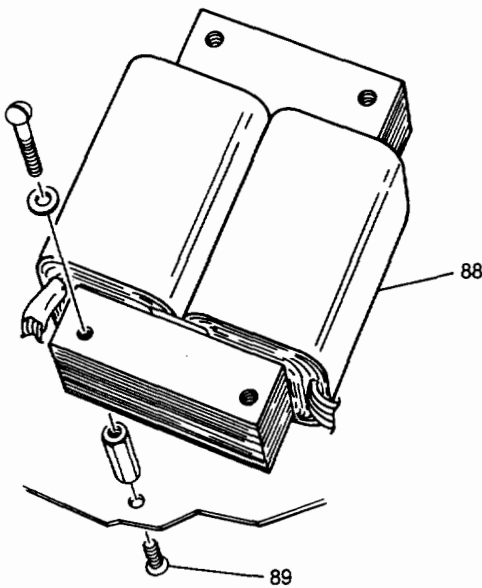
## CIRCUIT BOARDS



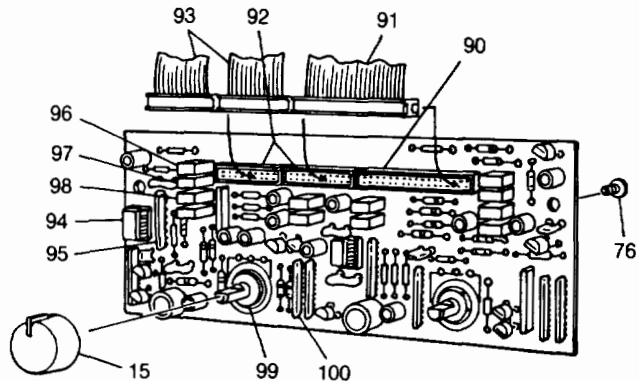
**D**  
Front and Rear View



**E**



**F**



**G**

## JBL MPA400 COMPONENT PARTS LIST

Item	Part No.	Qty.	Description	Ref. Des.
94	IC-000012-00	2	IC, Dual OpAmp, OP275	U101, U201
95	RN-210002-BM	4	Res. Ntwk., 8p, SIP, 10K	RN101, RN102 RN201, RN202
96	QD-002750-00	4	LED, Red, .125" x .245", Capped	LD101.1, LD103.1, LD201.1, LD203.1
97	QD-002752-00	2	LED, Yellow, .125" x .245", Capped	LD101.2, LD201.2

Item	Part No.	Qty.	Description	Ref. Des.
98	QD-002751-00	6	LED, Green, .125" x .245", Capped	LD102.1, LD102.2, LD103.2, LD202.1, LD202.2, LD203.2
99	PT-310000-CR	2	Potentiometer, 10K, 0.2W	VR101, VR201
100	RN-110002-BM	4	Res. Ntwk., 8p, SIP, 1K	RN103, RN104, RN203, RN204

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