Service Manual

INKEL P.A

MA-330/430/630/930

Power Amplifier

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株式会社 インケル
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INKEL

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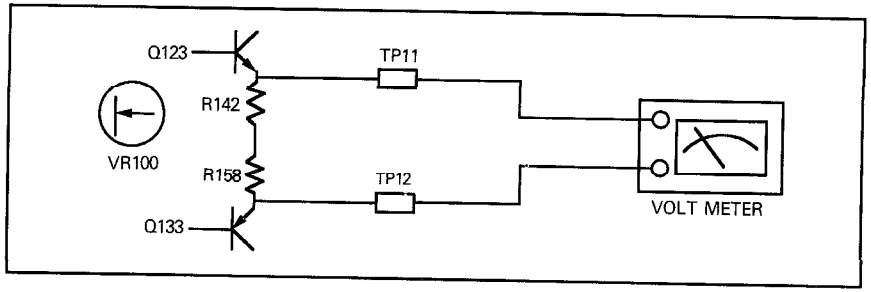
Electrical Adjustment Procedure (MA-330/430/630/930)

• IDLE CURRENT

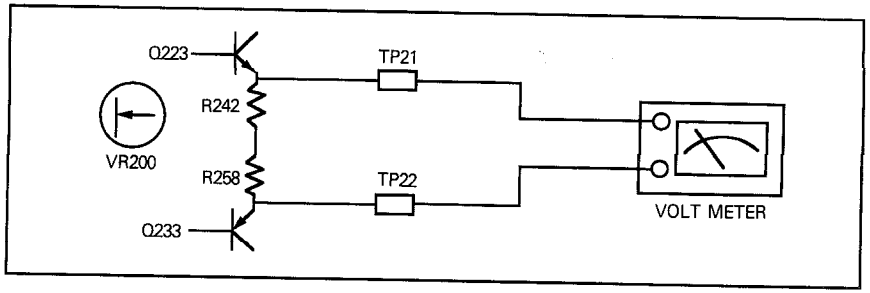
A. **SETTING**
Set the master volume controls minimum.

B. **CONNECTION**

MA-330/430



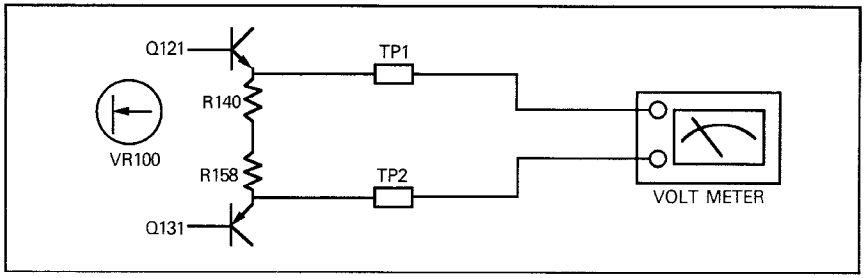
CHANNEL 1



CHANNEL 2

Electrical Adjustment Procedure

MA-630/930



CHANNEL 1, 2

C. ADJUSTMENT

- Adjust VR100 (VR200) so that the current through the R142, R158 (R242, R258) and R140, R158 become 10 milliampere.
- When that voltage across the TP11 to TP12 (TP21 to TP22) and TP1 to TP2 becomes 10 millivolt, the current becomes 10 milliampere.

Specifications (MA-330/430/630/930)

MODEL	MA-330	MA-430	MA-630	MA-930
Rated Output Power/Max Output Power at 8ohm, 1KHz (Bridged Mono) at 8ohm, 1KHz (Stereo for CH) at 4ohm, 1KHz	 200W/270W 75W/ 90W 100W/130W	 400W/430W 125W/130W 200W/220W	 600W/670W 200W/220W 300W/340W	 900W/1000W 300W/330W 450W/520W
Frequency Response (±0.5dB)	20Hz to 20KHz			
Total Harmonic Distortion	Less than 0.03%			
Input Sensitivity	0.775V			
Input Impedance	20Kohms (balanced)			
Slew Rate	60 V/μSec.			
Damping Factor	600 at 8ohm 400Hz			
Power Consumption	550W	950W	1150W	1700W
Weight	11kg	12kg	15kg	17kg
Dimensions	482(W) × 88(H) × 369(D) mm			

NOTE: Specifications and design subject to change without notice for improvement.

The current or wattage consumption of this appliance is to be determined when the amplifier is delivering RATED output power.

Electrical Parts List (MA-330/430)

AMP PCB B'D (MA-330, 430)

Ref. No.	Part No.	Description	Q'ty
CON101, 201	4428598305	WAFER LW-0640-5P	2
CON102, 202	4428598304	WAFER LW-0640-4P	2
CON103, 203	4428596203	WAFER LW-1145-3P	2
CON101, 106, 107, 108, CON109, 201, 206, 207, CON208, 209	3409247971-T	CAP AF 4.7/50	10
C102, 110, 115, 116, C202, 210, 215, 216	3509101231-A	CAP CE 100P	8
C103, 105, 203, 205	3409210141-T	CAP AF 100/25	4
C104, 204	3529330311-A	CAP CE 33P	2
C111, 112, 117, 211, C212, 217	3609472120-T	CAP MA 0.0047M	6
C113, 213	3529470311-A	CAP CE 47P	2
C114, 214	3609473120-T	CAP MA 0.047M	2
C118, 119, 120, 218, C219, 220	3609273120-T	CAP MA 0.027M	6
C123, 223	3529220311-A	CAP CE 22P	2
D101, 102, 105, 106, D121, 122, 201, 202, D205, 206, 221, 222	2058100996	DIODE 1N4006	12
D103, 104, 107, 108, D109, 110, 111, 112, D113, 114, 119, 120, D123, 203, 204, 207, D208, 209, 210, 211, D212, 213, 214, 219, D220, 223	2058304100	DIODE 1N4148	26
D116, 118, 216, 218	2058502068	DIODE ZINER 6.8BM	4
IC101, 201	2118010232	IC TL072	2
L101, 201	2648099940	COIL 1.2UH	2
Q101, 104, 108, 201, Q204, 208	2028407990	TR NPN C4370	6
Q102, 111, 202, 211	2028107984	TR PNP A1659	4
Q103, 137, 203, 237	2008206104-T	TR PNP A970	4
Q105, 205	2008400960	TR NPN C1567	2
Q106, 206	2008206997-T	TR PNP A949	2
Q107, 207	2008606107-T	TR NPN C2229	2
Q109, 209	2028811998	FET N-CH 2SK215	2
Q110, 210	2028611998	FET P-CH 2SJ78	2
Q121, 122, 123, 221, Q222, 223	2028427998	TR NPN 2SC3856	6
Q127, 227	2008606108-T	TR NPN C2240	2
Q131, 132, 133, 231, Q232, 233	2028117994	TR PNP 2SA1492	6
R101, 201	3009561973	RES CF 560	2
R102, 202	3009113973	RES CF 11K	2
R103, 203	3009331973	RES CF 330	2
R104, 204, 221, 224	3009121973	RES CF 120	4
R105, 110, 129, 130, R205, 210, 229, 230	3079151275	RES ERD-2F 150	8
R106, 206	3009202973	RES CF 2K	2
R107, 116, 117, 207, R216, 217	3009104973	RES CF 100K	6
R108, 208	3009222973	RES CF 2.2K	2
R109, 209	3009682973	RES CF 6.8K	2
R111, 112, 211, 212	3009564973	RES CF 560K	4
R113, 213	3079331275	RES ERD-2F 330	2

Ref. No.	Part No.	Description	Q'ty
R114, 137, 138, 139, R153, 154, 155, 214, R237, 238, 239, 253, R254, 255	3079101275	RES ERD-2F 100	14
R115, 215	3079330275	RES ERD-2F 33	2
R118, 119, 125, 218, R219, 225	3009562973	RES CF 5.6K	6
R120, 220	3079680275	RES ERD-2F 68	2
R121, 124	3079121275	RES ERD-2F 120	2
R122, 123, 222, 223	3009393973	RES CF 39K	4
R126, 226	3009102973	RES CF 1K	2
R127, 128, 227, 228	3039223475	RES MO 22K (1W)	4
R131, 132, 231, 232	3079470273	RES ERD-2F 47	4
R133, 233	3079330275	RES ERD-2F 16	2
R134, 135, 136, 150, R151, 152, 234, 235, R236, 250, 251, 252	3089479275	RES NFR 4.7	12
R140, 141, 142, 156, R157, 158, 240, 241, R242, 256, 257, 258	3049478783	RES CE 0.47	12
R170, 171, 270, 271	3079331275	RES ERD-2F 220	4
R172, 173, 231, 272	3009103973	RES CF 10K	4
R174, 274	3059479786	RES CE 4.7/5W	2
VR100, 200	3248310310	RES SEMI 10KB	2

Power PCB B'D (MA-330, 430)

BRIDGE 200	2058100987	DIODE PBP152	1
CON501, 502	4428596203	WAFER LW-1145-3P	2
CON503	4355917205	CONNECTOR ASS'Y 4P	1
CON504	4355917215	CONNECTOR ASS'Y 4P	1
CON505, 506	4428598303	WAFER LW-0640-3P	2
CON507, 508, 509	4428596002	WAFER LW-5267-2P	2
CON510	4355921721	CON ASS'Y 4P	1
CON503, 504	3419068208	CAP AF 6800/80	2
	3419568280	CAP AF 6800/63 (ONLY FOR MA-330)	
CON505, 506	3408210261	CAP RSA 1000/35	2
C507, 508, 511, 512	3539104531-A	CAP CE 0.1u	4
C509, 510	3408223141	CAP RSA 330/25	2
C517	3509101231-A	CAP CE 100P	1
C521, 567, 568	3609104122-T	CAP MA 0.1M	3
C532, 535	3409210971-T	CAP AF 1/50	2
C533	3409222120-T	CAP MA 0.0022M	1
C534, 538	3409247071-T	CAP AF 47/25	2
C536	3409247871-T	CAP AF 0.47/50	1
C537	3609153120-T	CAP MA 0.015M	1
C539	3509103450-T	CAP CE 0.01/500	1
C540	3408210191	CAP RSA 100/100	1
C541	3409222141-T	CAP AF 220/50	1
C566	3609333120-T	CAP MA 0.033M	1
D504, 507, 524, 525, D526, 527, 528, 529, D530, 531, 532	2058304100	DIODE 1N4148	11
D505	2058502160	DIODE ZINER 16BM	1
D506	2058502082	DIODE ZINER 8.2BM	1
D508, 522, 533, 534	2058100996	DIODE 1N4006	4
D535	2058502240	DIODE ZINER 24BM	1
F501, 502	5508411934	FUSE T630MA	2

The reference have been described by underline are not applicable for the MA-330.

Ref. No.	Part No.	Description	Q'ty
IC501	2128610800	IC 7915	1
IC502	2128610900	IC 7815	1
IC503	2118010590	IC 4558	1
IC504	2118050410	IC TA7317P-1	1
P11, 12, 13	4465998210	TERMINAL 250T	3
Q507	2028107984	TR PNP A1659	1
Q508	2008206997-T	TR PNP A965	1
Q541, 542	2008606104-T	TR NPN C1815	2
Q543	2028406113	TR NPN D880Y	1
RY501, 502	5528009991	RELAY HR703H	2
RY503	5528009790	RELAY HR-cR6	1
R501, 502	3039100572-F	RES MO 10/2W	2
R503	3039101472-F	RES MO 100/1W	1
R508	3009183973	RES CF 1.8K (1/4W)	1
R509, 525, 528, 532	3009333973	RES CF 33K	4
R510, 520, 521, 522, 530	3009104973	RES CF 100K	5
R511	3009152973	RES CF 1.5K	1
R511, 512	2438200515	THERMISTOR NTC 5D-15	2
R512	3009153973	RES CF 15K	1
R513	3009184973	RES CF 180K	1
R514, 515	3009474973	RES CF 470K	2
R516, 526, 531	3009104973	RES CF 10K	3
R517	3009182973	RES CF 1.8K	1
R518	3009202973	RES CF 2K	1
R519	3009473973	RES CF 47K	1
R523, 534, 535	3009472973	RES CF 4.7K	3
R524	3009683973	RES CF 68K	1
R527	3009392973	RES CF 3.9K	1
R529	3009563973	RES CF 56K	1
R533	3009223973	RES CF 22K	1
R536, 537	3059479786	RES CE 4.7/5W	2
R574	3009471973	RES CF 470	1
R575	3039681572-F	RES MO 680/2W	1
R576	3009822973	RES CF 8.2K	1
SP1	4408195110	SPEAKER TERMINAL 4P	1
SW510, 520	4618001110	SW SLIDE	2
TH501	2438209012	THERMISTER YSG-503J	1
TH502	2438007994	POSISTOR PTH 59F04	1

INPUT PCB B'D (MA-330/430/630/930)

CON301, 351	4428598703	WAFER LA-0640-3P	2
CON302, 352	4428598705	WAFER LA-0640-5P	2
CON303	4428595010	WAFER LW-5268-10P	1
CON304, 307	4428594902	WAFER LA-5268-2P	2
CON305	4428594904	WAFER LA-5268-4P	1
C301, 302, 306, 311, C356, 351, 352	3409210141-T	CAP AF 100/25	7
C303, 353	3529050311-A	CAP CE 5P	2
C304, 305, 354, 355, 359	3529220311-A	CAP CE 22P	
C307, 312, 357, 362	3409210071-T	CAP AF 10/50	4
C309	3409247071-T	CAP AF 47/50	1
C310	3529330311-A	CAP CE 33P	1
C313, 363	3409104122-T	CAP MA 0.1M	2
C314, 315, 364, 365	3409247971-T	CAP AF 4.7/50	4
C360	3529470311-A	CAP CE 47P	1
C361	3609333120-T	CAP MA 0.033M	1
D301, 302, 351, 352, 355	2058304100	DIODE 1N4148	5
IC301, 302, 303, 304	2118010332	IC5532	
Q301, 302, 303, 304, Q311, 312, 313, 314	2008606104-T	TR NPN 2SC1815	8

Ref. No.	Part No.	Description	Q'ty
RY301	5528009960	RELAY RZ12W	1
R301, 351	3009823973	RES CF 82K	2
R302, 352	3009105973	RES CF 1M	2
R303, 304, 305, 306, R332, 353, 354, 355, R356, 368, 369, 382	3009153973	RES CF 15K	12
R307, 309, 357, 359	3009101973	RES CF 100	4
R308, 310, 318, 322, R358, 360, 377	3009104973	RES CF 100K	7
R311, 361	3009123973	RES CF 12K	2
R312, 362	3009223973	RES CF 22K	2
R313, 363	3009393973	RES CF 39K	2
R316, 317	3009563973	RES CF 56K	2
R321, 326, 327, 371, R372, 376	3009102973	RES CF 1K	6
R323, 328, 373, 378	3009222973	RES CF 2.2K	4
R331, 381	3009184973	RES CF 180K	2
R366, 367	3009303973	RES CF 30K	2
R370	3009330973	RES CF 33	1
VR301, 302	3238093710	VOLUME RK11K12P (10KA)	2

LED B'D (MA-330/430/630/930)

CON401	4355922401	CON ASS'Y 10P	1
D401, 402, 413, 414	2308257262-T	SLR 54GG 70F-150 R5	4
D403, 404, 411, 412, 421	2308252222-T	SLR 54GR 70F-150 R5	5
R401, 402, 403, 404, R405, 406, 411, 412, R413, 414, 415, 416, R421	3009122973	RES CF 1.2K	13

JACK B'D (MA-330/430/630/930)

CON501, 601	4428598703	WAFER LA-0640-3P	2
CR501, 601	3539103521-A	CAP CE 0.01U	2
JACK501, 601	4438093510	XLR JACK BELTON	2
JACK502, 602	4438097310	JACK PHONE	2

Electrical Parts List (MA-630/930)

Ref. No.	Part No.	Description	Q'ty
AMP PCB B'D (MA-630, 930)			
CON101, 103	4428598305	WAFER LW-0640-5P	2
CON102	4428595002	WAFER LW-5267-2P	1
CON104	4428598303	WAFER LW 0640 3P	1
CON105	4678699430	CNT PLUG 3P	1
CON106	4355921803	CON WIRE 2P	1
CR123	3529220311-A	CAP CE 22P	1
C101, 106, 107, 108, 109	3409247971-T	CAP AF 4.7/50	5
C102, 115, 116	3509101231-A	CAP CE 100P	3
C103, 105	3409210141-T	CAP AF 100/25	2
C104	3529330311-A	CAP CE 33P	1
C110	3529680311-A	CAP CE 68P	1
C111, 112, 117	3609472120-T	CAP MA 0.0047M	3
C113	3529560311-A	CAP CE 56P	1
C114, 120	3609473120-T	CAP MA 0.047M	2
C118, 119	3609273120-T	CAP MA 0.027M	2
C121	3609104122-T	CAP MA 0.1M	1
C122	3509271231-A	CAP CE 270P	1
C132, 135	3409210971-T	CAP AF 1/50	2
C133	3609222120-T	CAP AF 0.0022M	1
C134, 138	3409247071-T	CAP AF 47/50	2
C136	3409247871-T	CAP AF 0.47/50	1
C137	3609153120-T	CAP MA 0.015M	1
C139	3509103450-T	CAP CE 0.01/500	1
C516	3609333120-T	CAP MA 0.033M	1
D101, 105, 106, 121, D122, 133, 134	2058100996	DIODE 1N4006	7
D103, 104, 107, 108, D109, 110, 111, 112, D113, 114, 119, 120, D123, 124, 125, 126, D127, 128, 129, 130, D131, 132, 502	2058304100	DIODE 1N4148	23
D116, 118	2058502100	DIODE ZINER 10BM	2
IC101	2118010232	IC TL072	1
IC103	2118010590	IC 4558	1
IC104	2118050410	IC TA7317P-1	1
L101	2648099940	COIL 1.2UH	1
Q101, 104, 108	2028407990	TR NPN C4370	3
Q102, 111	2028107984	TR PNP A1659	2
Q103, 137	2008206104-T	TR PNP A970	2
Q105	2008400960	TR NPN C1567	1
Q106	2008206997-T	TR PNP A949	1
Q107	2008606107-T	TR NPN C2229	1
Q109	2028811998	FET N-CH 2SK215	1
Q110	2028611998-T	FET P-CH 2SJ78	1
Q121, 122, 123, 124, Q125, 126	2028427998	TR NPN 2SC3856	6
Q127	2008606108-T	TR NPN C2240	1
Q131, 132, 133, 134, 135, 136	2028117994	TR PNP 2SA1492	6
Q141, 142	2008606104-T	TR NPN C1815	2
RY501	5528009810	RELY 31H42	1
R101	3009561973	RES CF 560	1
R102	3009113973	RES CF 11K	1
R103	3009331973	RES CF 330	1
R104	3009121973	RES CF 120	1
R105, 110, 129, 130, 170, 171	3079151275	RES ERD-2F150	6

Ref. No.	Part No.	Description	Q'ty
R170, 171	3072221275	RES ERD-2F220 (only for MA-630)	2
R106, 179	3009202973	RES CF 2K	2
R107, 109	3009183973	RES CF 18K	
R107	3009113973	RES CF 11K (for only MA-630)	1
R109	3009223973	RES CF 22K (for only MA-630)	1
R108	3009222973	RES CF 2.2K	1
R111, 112	3009564973	RES CF 560K	2
R113	3079331275	RES ERD-2F330	1
R114	3079680275	RES ERD-2F68	1
R115, 131, 132	3079470275	RES ERD-2F47	3
TH1, R116, 117, 183, R186, 193	3009104973	RES CF 100K	6
R118, 119, 125	3009562973	RES CF 5.6K	3
R120, 146, 147, 148, R149, 150, 151, 164, R165, 166, 167, 168, R169	3079101275	RES ERD-2F100	13
R121, 124	3079121275	RES ERD-2F120	2
R122, 123	3009393973	RES CF 39K	2
R126	3009102973	RES CF 1K	1
R127, 128	3039223475	RES MO 22K (1W)	2
R133	3079150275	RES ERD-2F15	1
R134, 135, 136, 137, R138, 139, 152, 153, R154, 155, 156, 157	3089479275	RES ERD-2F4.7	12
R140, 141, 142, 143, R144, 145, 158, 159, R160, 161, 162, 163	3049478783	RES CE 0.47	12
R172, 173, 181, 188, 194	3009103973	RES CF 10K	5
R174	3059479782	RES CE 4.7 (5W)	1
R175	3009153973	RES CF 15K	1
R176	3009184973	RES CF 180K	1
R177, 178	3009474973	RES CF 470K	2
R180	3009182973	RES CF 1.8K	1
R182	3009473973	RES CF 47K	1
R184, 197, 198	3009472973	RES CF 4.7K	3
R185	3009683973	RES CF 68K	1
R187, 191, 196	3009333973	RES CF 33K	3
R189	3009392973	RES CF 3.9K	1
R192	3009563973	RES CF 56K	1
R196	3009223973	RES CF 22K	1
R199	3009152973	RES CF 1.5K	1
R504	3039101572-F	RES MO 100 (1W)	1
VR100	3248310320	RES SEMI 10KB	1

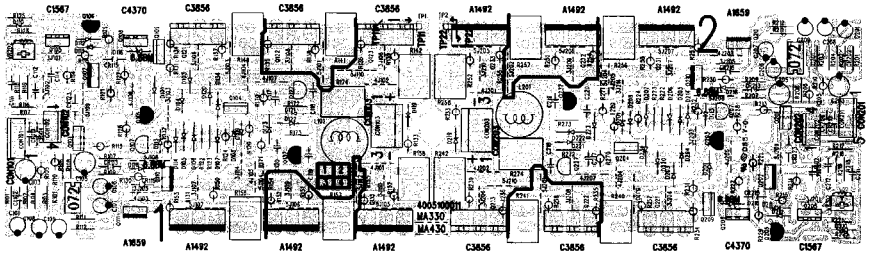
POWER B'D			
BRIDGE200	2058100998	DIODE PBP152	
CON406	4355921721	CON ASS'Y 4P	
CON501, 502, 503	4428598303	WAFER LW-0640-3P	3
CON504	4355922115	CON ASS'Y 5P	2
CON505	4355922108	CON ASS'Y 5P	1
CON507, 508	4678699430	CNT3P	2
CON512	4428595002	WAFER LW-5267-2P	1
CON513	4355922005	CON ASS'Y 3P	1
CON514	4355922011	CON ASS'Y 3P	1
C501, 502, 503, 504	3419568298	CAP AF 6800/100	4
	3419068208	CAP AF 6800/80 (only for MA-630)	
C505, 506	3408210261	CAP RSA 1000/35	2

Ref. No.	Part No.	Description	Q'ty
C507, 508, 511, 512	3539104531-A	CAP CE 0.1	4
C509, 510	3408233141	CAP RSA 330/25	2
C514, 515, 564, 565	3609104122-T	CAP MA 0.1M	4
C517	3509101231-A	CAP CE 100P	1
C521	3408210191	CAP RSA 100/100	1
C522	3409222141-T	CAP AF 220/50	1
D501, 511, 512	2058100996	DIODE 1N4006	3
D504	2058304100	DIODE 1N4148	1
D505	2058502160	DIODE ZINER 16BM	1
D506	2058502082	DIODE ZINER 8.2BM	1
D513	2058502240	DIODE ZINER 24BM	1
F501, 502	5508411934	FUSE T630MA	2
IC501	2128610800	IC 7915	1
IC502	2128610900	IC 7815	1
Q506	2028406113	TR NPN D880Y	1
Q507, 510	2028107984	TR PNP A1659	2
Q508	2008206997-T	TR PNP A965	1
RY503	5528009790	RELAY HR-CR6	1
R501, 502	3039100572-F	RES MO 10/2W	2
R503, 504	3059479786	RES CE 4.7 (5W)	2
R506	3009561273	RES CF 560 (1/4W)	1
R507	3009333973	RES CF 33K	1
R508	3009104973	RES CF 100K	1
R511, 512	2438200515	THERMISTOR TH5D	2
R521	3009822973	RES CF 8.2K	1
R522	3039681572-F	RES MO 680/2W	1
SP1	4408195110	SPEAKER TERMINAL 4P	1
SW501, 502	4618001110	SLIDE SW	2
10RED, 20BLU, 30BLK	4465998210	TERMINAL 250T	3

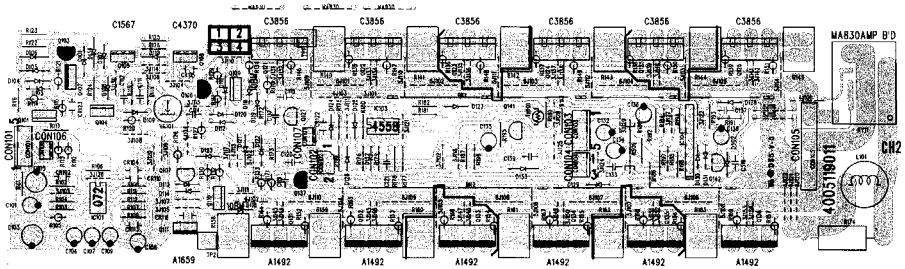
The reference have been described by underline are not applicable for the MA-630.

Top & Bottom View of P.C. Boards

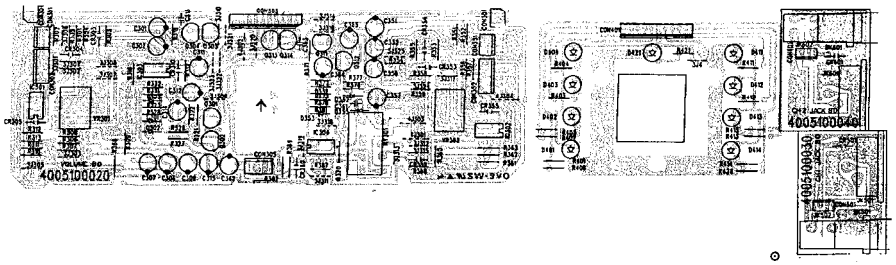
AMP B'D (MA-330/430) 4005100011



AMP B'D (MA-630/830/930) 4005119011

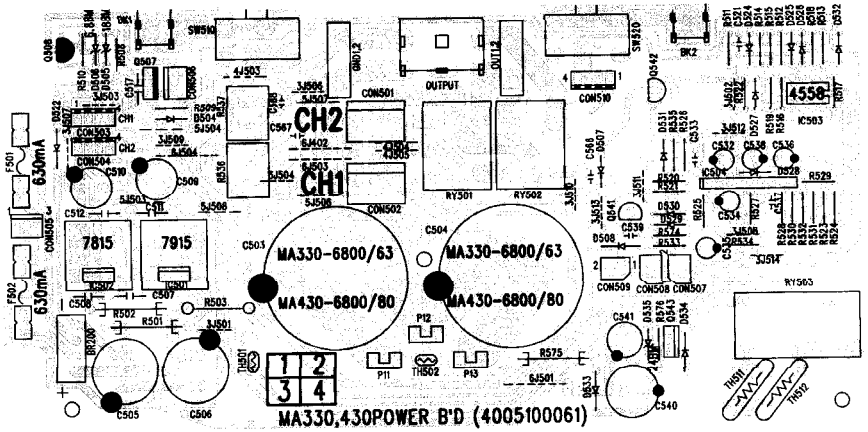


INPUT B'D

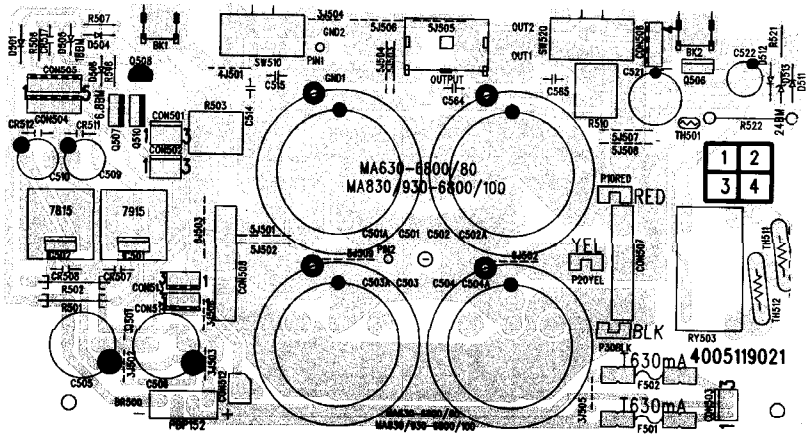


Top & Bottom View of P.C. Boards

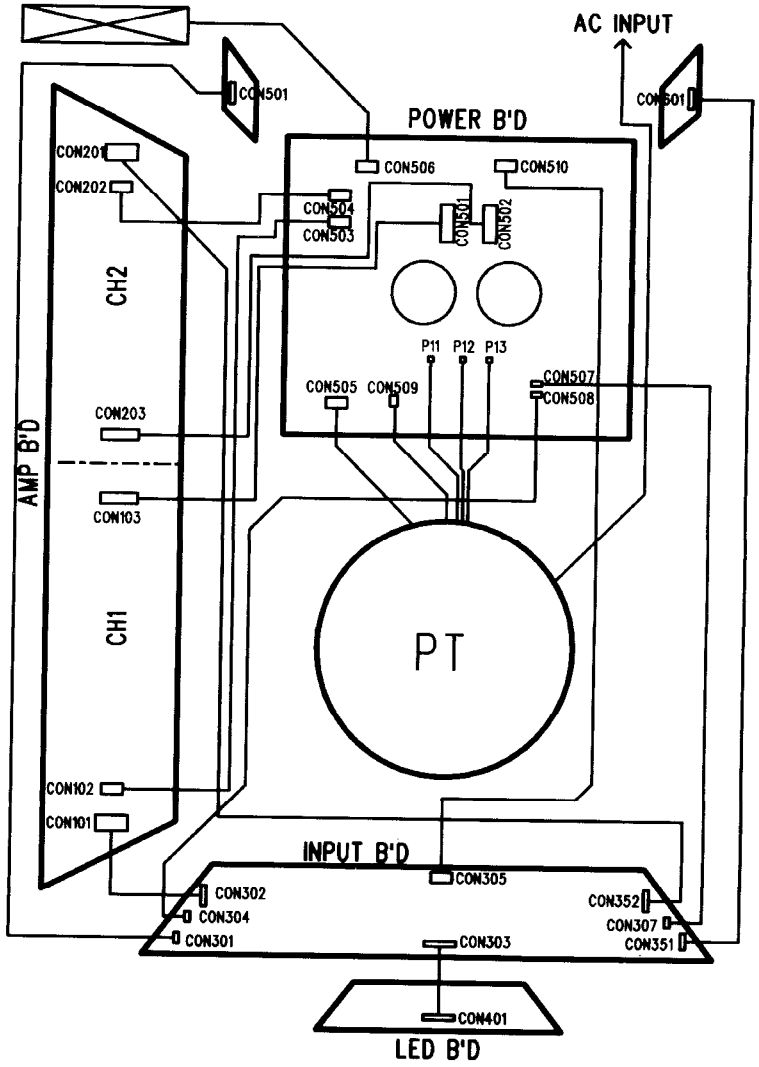
POWER B'D (MA-330/430) 4005100061



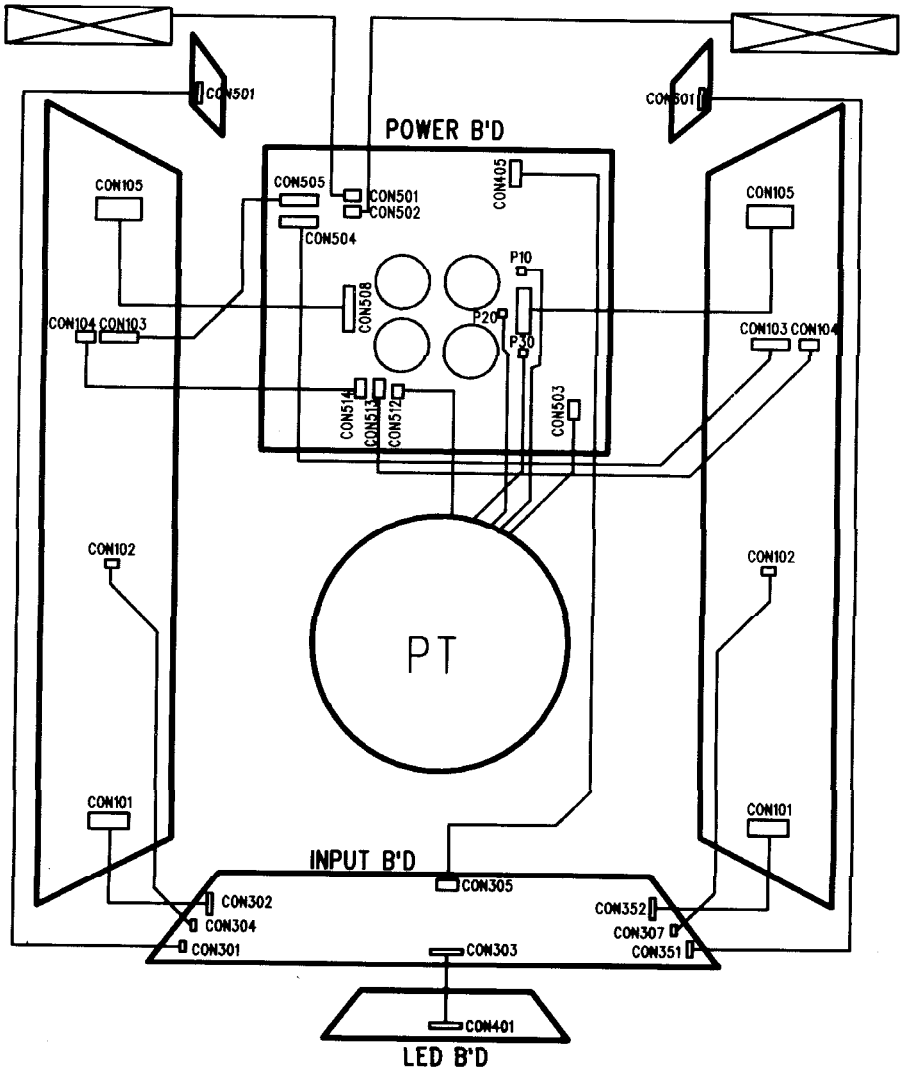
POWER B'D (MA-630/930) 4005119021



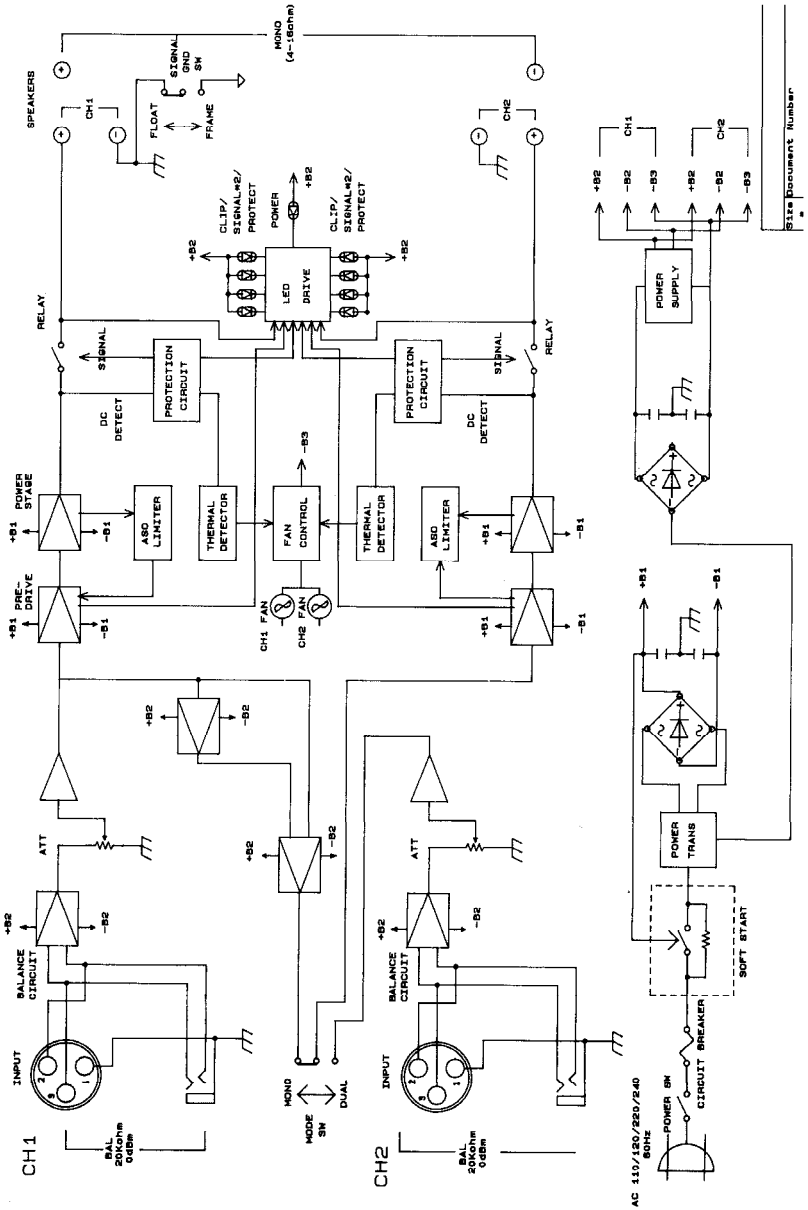
Wiring Diagram (MA-330/430)



Wiring Diagram (MA-630/930)



Block Diagram (MA-330/430/630/930)



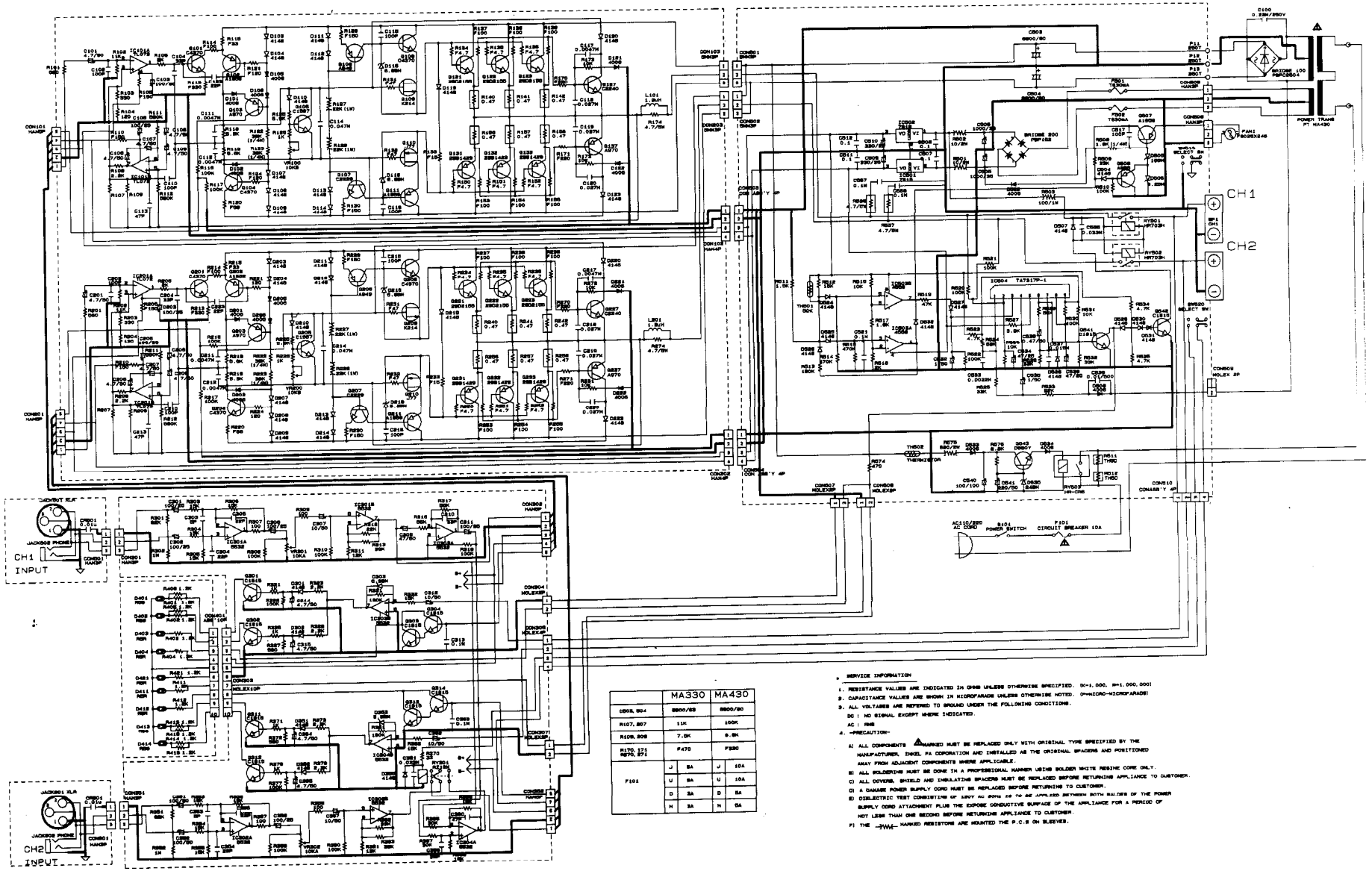
Mechanical Parts List (MA-330/430)

No.	Description	Part No.	Q'ty	Remark
1	MAIN CHASSIS	046121690831	1	ONLY MA-430
1-1	MAIN CHASSIS	046121690851	1	ONLY MA-330
2	FOOT	6335999510	4	
3	FOOT FELT	6735994110	4	
4	BOLT M10×75Y	8078100751	1	ONLY MA-430
5	*RUBBER PT*	*6715995210*	2	*ONLY MA-430*
6	TRANS FORMER PWR.	2828080400	1	ONLY MA-430
6-1	TRANS FORMER PWR.	2828075610	1	ONLY MA-330
7	PT MTG. BRACKET	6503988310	1	ONLY MA-430
8	INSULATION PLATE	6705995010	1	ONLY MA-430
9	FOOT	6735993920	1	ONLY MA-430
10	DIODE KBPC3504	2058100998	1	
11	FAN F8025×25B	7308999010	1	
12	BRACKET FAN	0465059682l0	2	
13	COVER FAN	6538999110	1	
14	PROTECTOR	8545995410	4	
15	PCB BRACKET	6505968010	2	
16	PCB POWER BD	4005100060	1	
17	RUBBER SPONGE	6715994710	1	
18	PCB JACK CH2 BD	4005100040	1	
19	SHIELD FENCE	6165169010	1	
20	INSULATION PLATE	6735991410	1	
21	JACK BKT.	6505959710	2	
22	PCB JACK CH1 BD.	4005100030	1	
23	SPEAKON JACK	4438095410	1	
24	CIRCUIT BREAKER	5568224833	1	
25	AC INLET	4448997310	1	
26	PCB VR BD.	4005100020	1	
27	HEAT SINK	7502095010	2	
28	PCB MAIN BD.	4005119010	2	
29	PATTERN BKT.	6165169110	2	
30	SPACER	6705998510	3	
31	SPACER HOLDER	6705998410	3	
32	COOL SHEET	1625999010	2	
33	SPONGE	6715997610	6	
34	TR BRACKET	6503984910	4	
35	WIRE CLAMP	6538998310	2	
36	FRONT PANEL	048601994510	1	
37	HANDLE	048603995220	2	
38	HANDLE BRACKET	6503986820	2	
39	DECORATION PANEL	048521995211	1	ONLY MA-430
39-1	DECORATION PANEL	048521995215	1	ONLY MA-330
40	PCB LED BD.	4005100050	1	
41	LED LENS	8523997210	9	
42	POWER SWITCH	4625996610	1	
43	CONTROL KNOB	048523998313	2	
44	TOP COVER	046122095920	1	
S1	ASSY SCREW	8095997010	9	
S2	SCREW #3BTC4×14Y	8109340141	8	
S3	SCREW BM3×6B	8009130063	5	
S4	ASSY SCREW	8095996920	8	
S5	ASSY SCREW	8095997110	3	
S6	SCREW BM4×10B	8009140103	3	
S7	SCREW #3BTC4×8B	8109340083	8	
S8	SCREW #2BTC3×8B	8109230083	12	
S9	SCREW #3FTC4×8B	8129330083	2	
S10	SCREW #3BTC3×6B	8109330063	12	
S11	ASSY SCREW	058095997920	1	
S12	ASSY SCREW	8095996910	4	ONLY MA-330
W1	WASHER SPRING ϕ10B	8309100013	2	ONLY MA-430
W2	WASHER PLAIN ϕ10Y	8319100011	1	ONLY MA-430
W3	THD WASHER IN ϕ4Y	8329040011	1	
N1	NUT M10B	8209110013	1	ONLY MA-430

Mechanical Parts List (MA-630/930)

No.	Description	Part No.	Q'ty	Remark
1	MAIN CHASSIS	046121690811	1	(DOM.)
2	FOOT	6335999510	4	
3	FOOT FELT	6735994110	4	
4	BOLT M10×75Y	8078100751	1	
5	RUBBER PT	6715996210	2	
6	TRANS FORMER PWR.	2828080300	1	
7	PT MTG. BRACKET	6503988310	1	
8	INSULATION PLATE	6705995010	1	
9	FOOT	6735993920	1	
10	DIODE KBPC3504	2058100998	1	
11	FAN F8025×24B	7308999010	2	
12	BRACKET FAN	046505968210	4	
13	COVER FAN	6538999110	2	
14	PROTECTOR	8545995410	4	
15	PCB BRACKET	6505968010	2	
16	PCB POWER BD.	4005119020	1	
17	RUBBER SPONGE	6715994710	1	
18	PCB JACK CH2 BD.	4005100040	1	
19	SHIELD FENCE	6165169010	1	
20	INSULATION PLATE	6735991410	1	
21	JACK BKT.	6505959710	2	
22	PCB JACK CH1 BD.	4005100030	1	
23	SPEAKON JACK	4438095410	1	
24	CIRCUIT BREAKER	5568224833	1	
25	AC INLET	4448997310	1	
26	PCB VR BD.	4005100020	1	
27	HEAT SINK	7502095010	2	
28	PCB MAIN BD.	4005119010	2	
29	PATTERN BKT.	6165169110	4	
30	SPACER	6705998510	6	
31	SPACER HOLDER	6705998410	6	
32	COOL SHEET	1625999010	4	
33	SPONGE	6715997610	6	
34	TR BRACKET	6503984910	4	
35	WIRE CLAMP	6538998310	4	
36	FRONT PANEL	048601994510	1	
37	HANDLE	048603995220	2	
38	HANDLE BRACKET	6503986820	2	
39	DECORATION PANEL	048521995212	1	(DOM.)
40	PCB LED BD.	4005100050	1	
41	LED LENS	8523997210	9	
42	POWER SWITCH	4625996610	1	
43	CONTROL KNOB	048523998313	2	
44	TOP COVER	046122095910	1	
S1	ASSY SCREW	8095997010	9	
S2	SCREW #3BTC4×14Y	8109340141	8	
S3	SCREW BM3×6B	8009130063	5	
S4	ASSY SCREW	8095996920	16	
S5	ASSY SCREW	8095997110	6	
S6	SCREW BM4×10B	8009140103	6	
S7	SCREW #3BTC4×8B	8109340083	8	
S8	SCREW #2BTC3×8B	8109230083	12	
S9	SCREW #3FTC4×8B	8129330083	2	
S10	SCREW #3BTC3×6B	8109330063	12	
S11	ASSY SCREW	058095997920	1	
W1	WASHER SPRING ϕ10B	8309100013	2	
W2	WASHER PLAIN ϕ10Y	8319100011	1	
W3	THD WASHER INϕ4Y	8329040011	1	
N1	NUT M10B	8209110013	1	

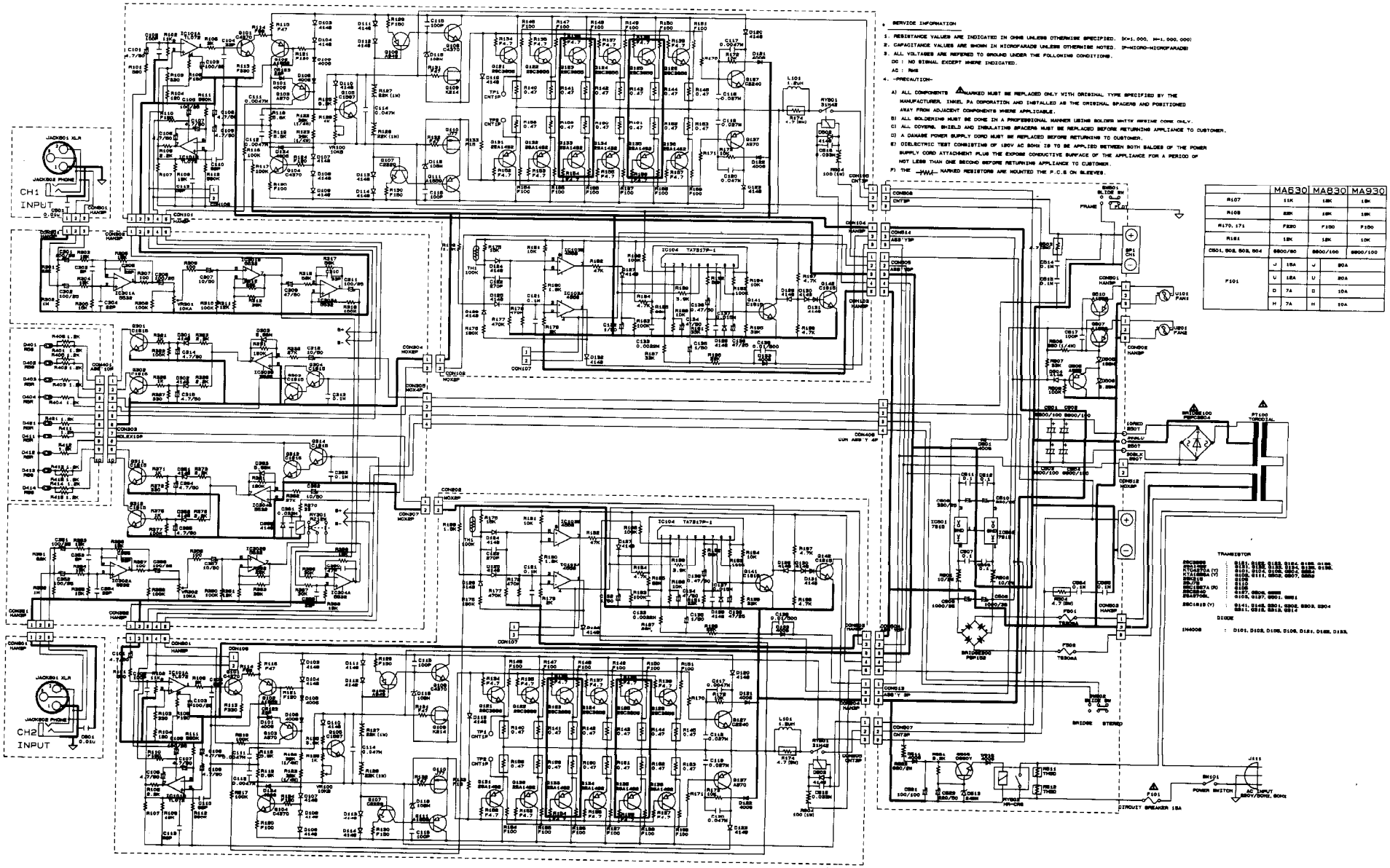
Schematic Diagram (MA-330/430)



	MA330	MA430
D803, 804	S800/S3	S800/S0
R107, 207	11K	100K
R108, 208	7.5K	9.5K
R170, 171 R670, 671	F470	F330
F101	J 5A	J 10A
	U 5A	U 10A
	D 5A	D 5A
	H 5A	H 5A

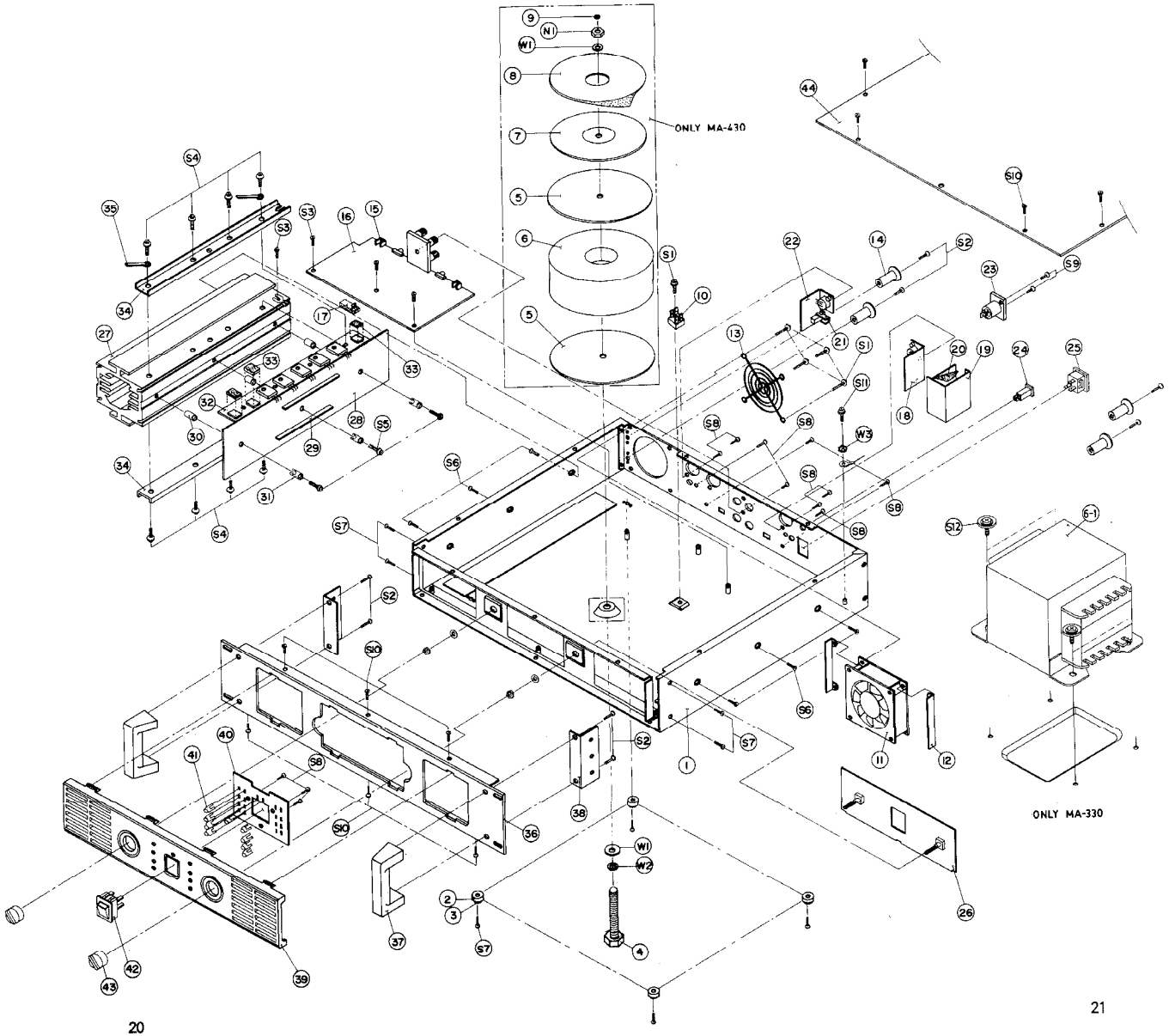
- SERVICE INFORMATION
1. RESISTANCE VALUES ARE INDICATED IN OHMS UNLESS OTHERWISE SPECIFIED. K=1,000, M=1,000,000
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED. P=MICRO-MICROFARADS
3. ALL VOLTAGES ARE REFERED TO GROUND UNDER THE FOLLOWING CONDITIONS.
   DC : NO SIGNAL EXCEPT WHERE INDICATED.
   AC : RMS
4. -PRECAUTION-
   A) ALL COMPONENTS ⚠MARKED MUST BE REPLACED ONLY WITH ORIGINAL TYPE SPECIFIED BY THE MANUFACTURER, PANEL FA CORPORATION AND INSTALLED AS THE ORIGINAL SPACERS AND POSITIONED AWAY FROM ADJACENT COMPONENTS WHERE APPLICABLE.
   B) ALL SOLDERING MUST BE DONE IN A PROFESSIONAL MANNER USING SOLDER WHITE RESINE CORE ONLY.
   C) ALL COVERS, SHIELD AND INSULATING SPACERS MUST BE REPLACED BEFORE RETURNING APPLIANCE TO CUSTOMER.
   D) A GARADE POWER SUPPLY CORD MUST BE REPLACED BEFORE RETURNING TO CUSTOMER.
   E) DIELECTRIC TEST CONSISTING OF 1KV AC 60Hz 2S TO BE APPLIED BETWEEN BOTH BLADES OF THE POWER SUPPLY CORD ATTACHMENT PLUG THE EXPOSE CONDUCTIVE SURFACE OF THE APPLIANCE FOR A PERIOD OF NOT LESS THAN ONE SECOND BEFORE RETURNING APPLIANCE TO CUSTOMER.
   F) THE —W— MARKED RESISTORS ARE MOUNTED THE P.C.B ON SLEEVES.

Schematic Diagram (MA-630/930)

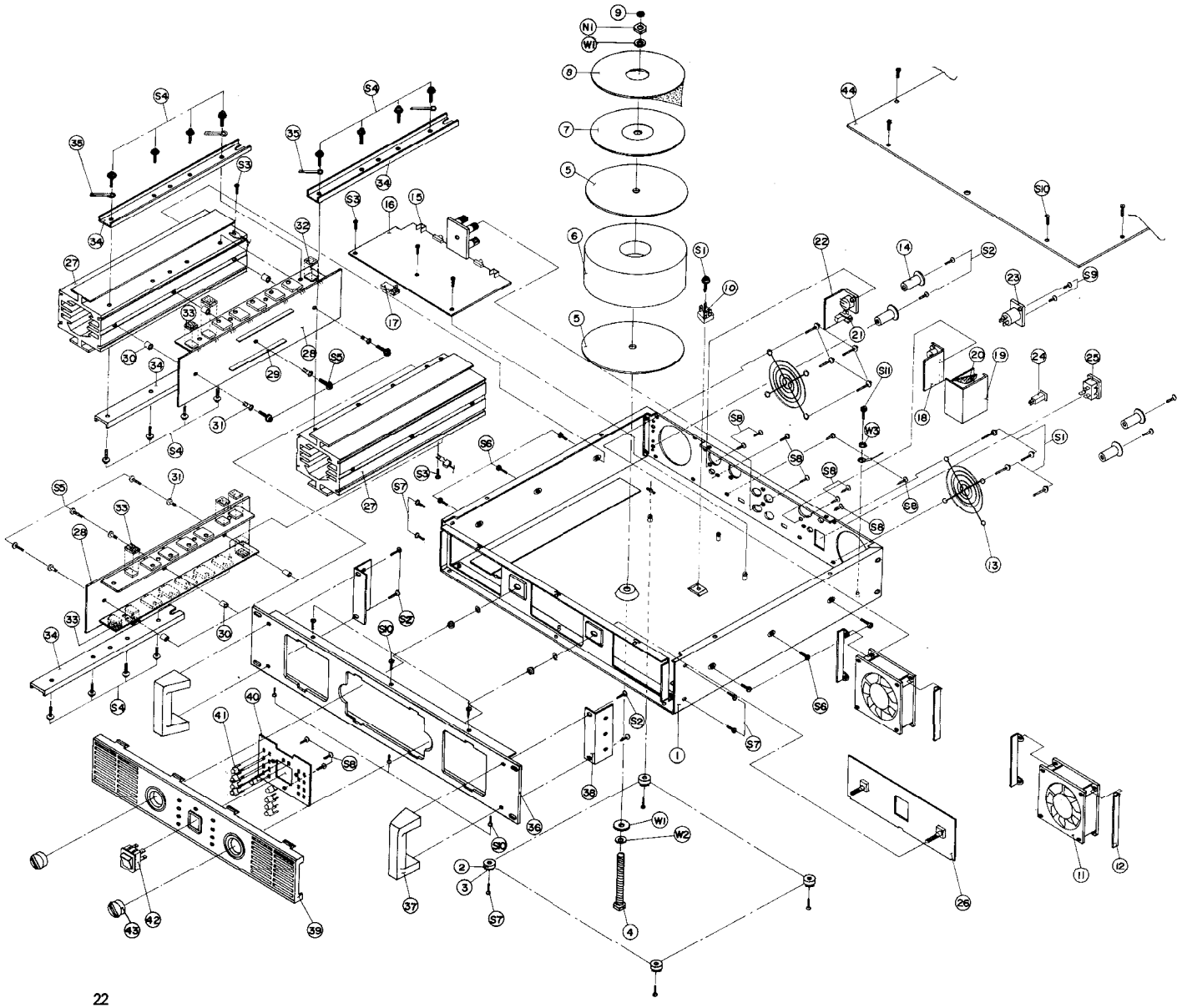


	MA630	MA830	MA930
R107	11K	18K	18K
R108	22K	18K	18K
R170, 171	F220	F100	F100
R181	18K	18K	10K
C501, 502, 503, 504	6800/80	6800/100	6800/100
F101	J 15A	J 30A	
	U 12A	U 20A	
	D 7A	D 10A	
	H 7A	H 10A	

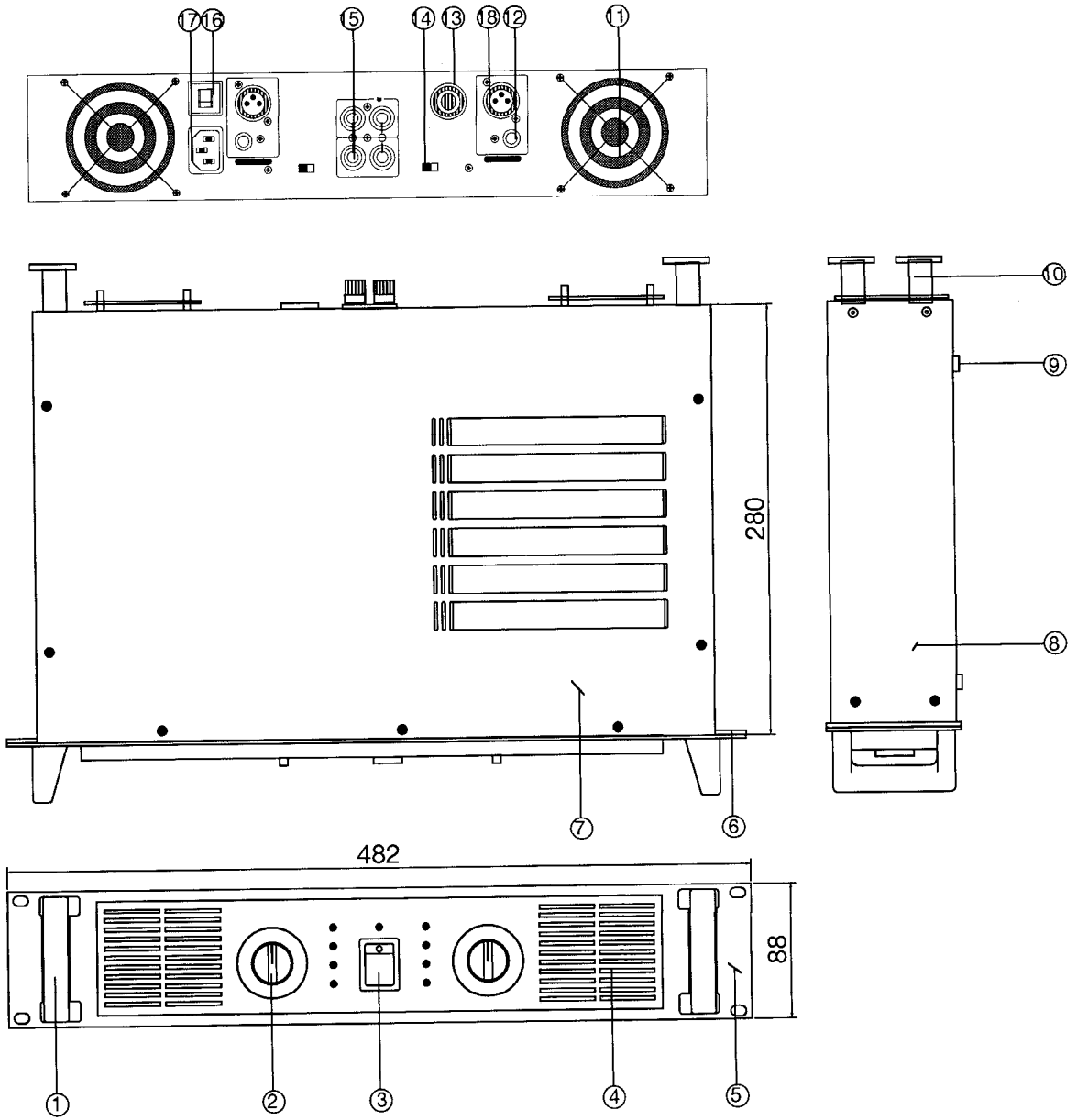
Exploded View of Cabinet & Chassis (MA-330/430)



Exploded View of Cabinet & Chassis (MA-630/930)



Exploded View of Cabinet & Chassis (MA-630/930)



No.	Description	Part No.	Q'ty	Remark
1	HANDLE	048603995220	2	
2	CONTROL KNOB	048523998313	2	
3	POWER SWITCH	4625996610	1	
4	DECORATION PANEL	048521995212	1	
5	FRONT PANEL	048601994510	1	
6	HANDLE BRACKET	6503986820	2	
7	TOP COVER	046122095910	1	
8	MAIN CHASSIS	046121690842	1	
9	FOOT	6335995510	1	
10	PROTECTOR	8545995410	4	
11	COVER FAN	6538999110	2	
12	JACK BOARD	4438097310	2	
13	SPEAKON JACK	4618001110	2	
14	SW SLIDE	4618001110	2	
15	SPEAKER TERMINAL 4P	4408195110	1	
16	CIRCUIT BREAKER	5568224833	1	
17	AC INLET	4448997310	1	
18	XLR JACK	4438093510	2	