

# CARVER

## Model TFM-25 SERVICE MANUAL

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# SPECIFICATIONS

Power: 225 watts RMS per channel into 8 ohms both channels driven, 20-20 kHz with no more than 0.5% THD.  
 350 watts RMS per channel into 4 ohms both channels driven, 20-20 kHz with no more than 0.5% THD.  
 350 watts RMS mono output into 8 ohms load.

Frequency Response: +0.5 dB 20-20 kHz.

IM Distortion: Less than 0.5%.

Noise: 100 dB A-weighted referenced to rated power.

Input Impedance: 115 K ohms.

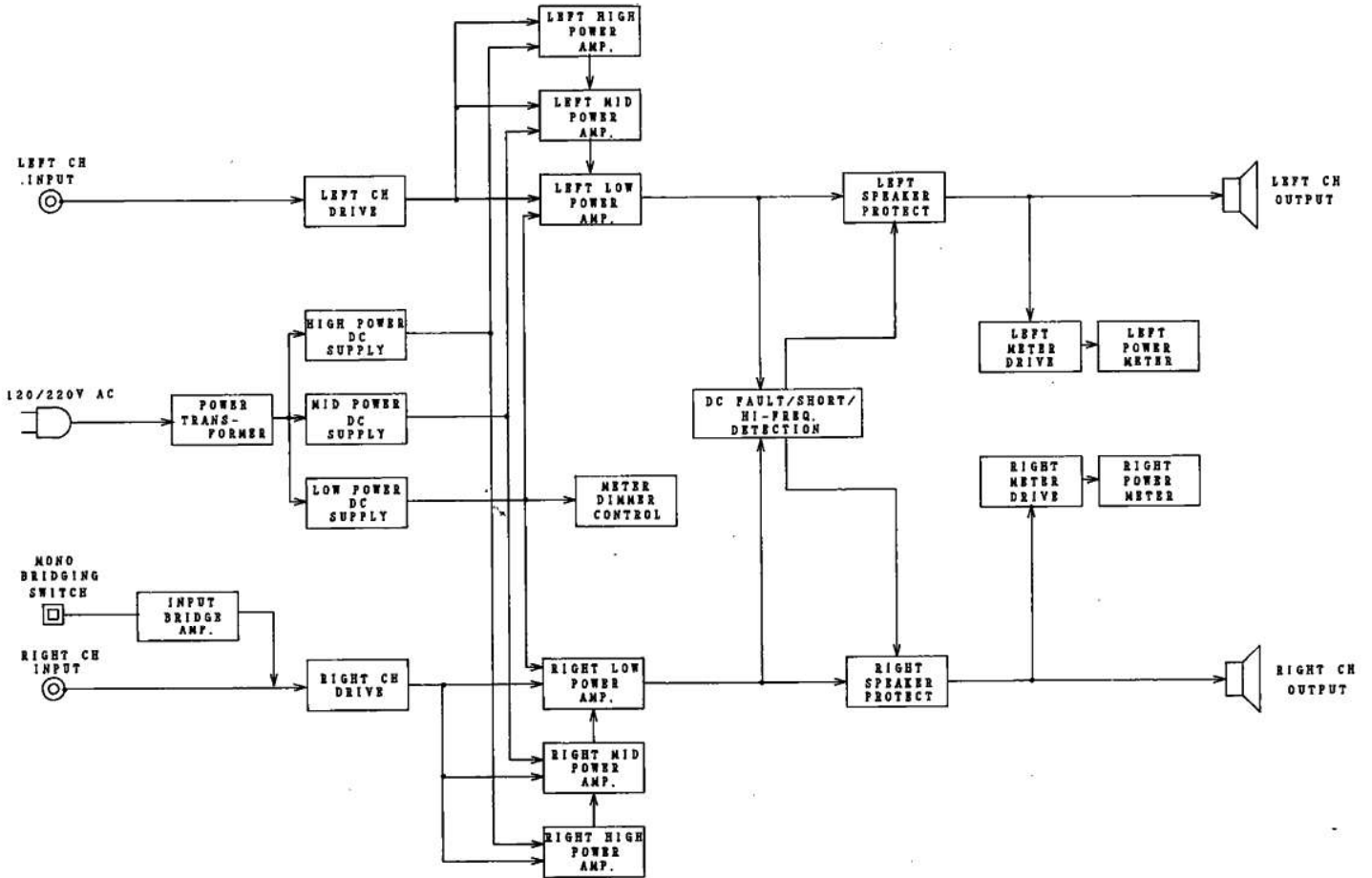
Sensitivity: 1.5 V RMS for rated 8 ohms power.

Gain: 30 dB.

Dimensions: 4.7"H×19"W×14.3"D.

Weight: 26 lbs.

# BLOCK DIAGRAM



# ALIGNMENT PROCEDURES

## Condition

STEREO/MONO switch: STEREO position

## IDLING

1. No input.
2. Preheat for 5 minutes.
3. Connect the DC digital volt meter + / - to the test point TP201(L) / TP203(L).
4. Adjust VR201 until the DC volt meter is 1.00 mV.
5. Connect the DC digital volt meter + / - to the test point TP202(R) / TP204(R).
6. Adjust VR202 until the DC volt meter is 1.00 mV.

## POWER METER

1. Connect the audio generator to RIGHT and LEFT INPUTS.
2. Set the input frequency to 1 kHz.
3. Adjust the input level until output is 21 Vrms (8 ohms, 55 W).
4. Adjust VR401 / VR402 until the LEFT / RIGHT meter show 55 W.

## ALIGNMENT POINTS

### MA-801 Main Amp P.C.Board

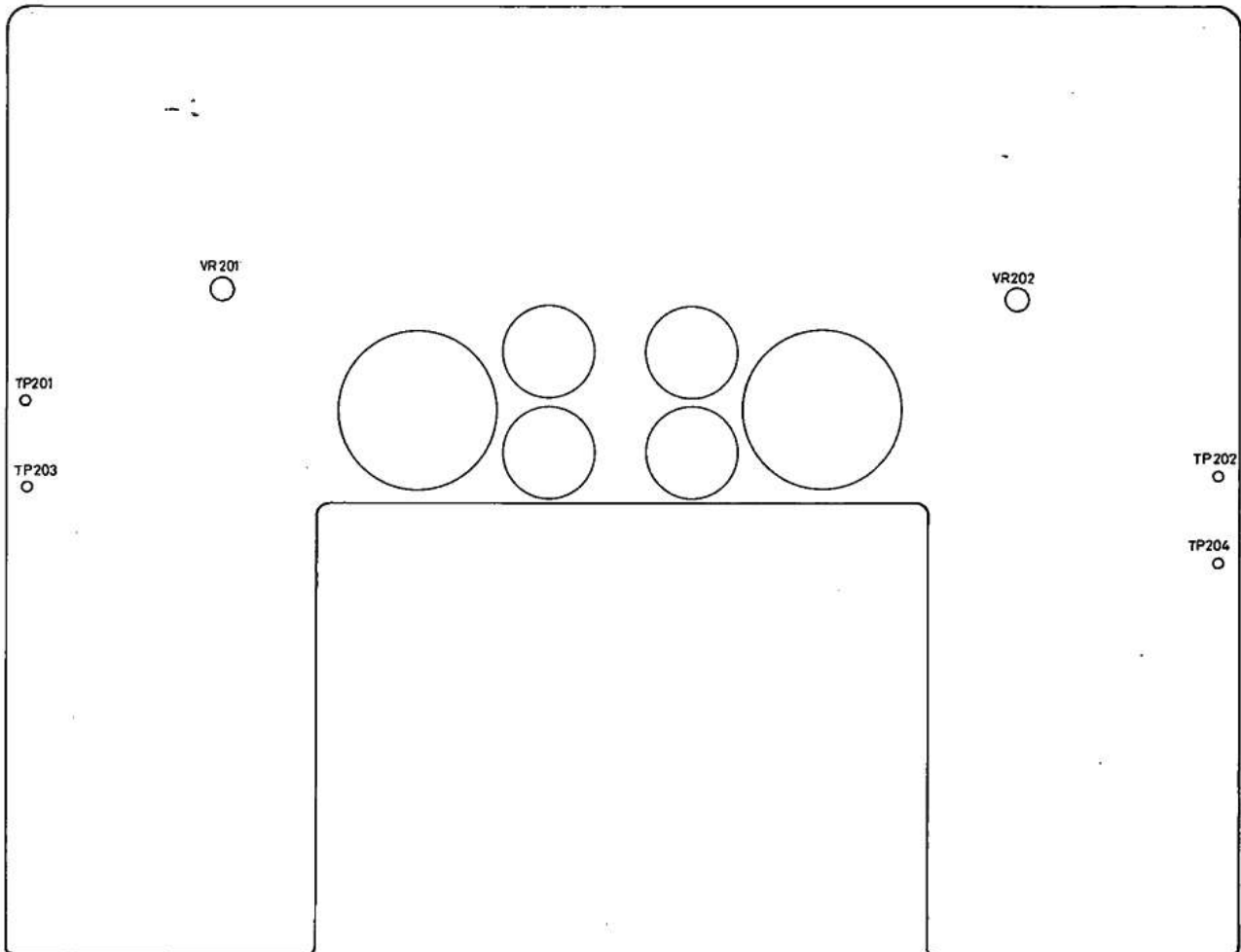


Fig. 1

### MD-801 Meter Drive P.C.Board

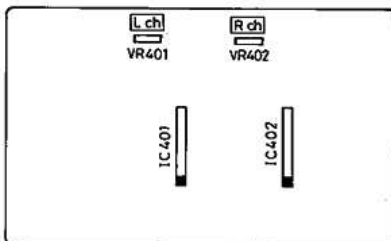


Fig. 2

# VOLTAGE CONVERSION

220 V/50 Hz Version

## Bill of Materials

Q'ty	Part No.	Description
1	530-10130-00	TFM-25 FINISHED GOODS
1	530-10088-00	LABEL 220 V AC 50 HZ
1	530-10058-00	LABEL VOLTAGE CONVERSION
1	530-10013-00	LABEL MILITARY CONVERSION

## Direction for Change

1. Remove the lead wire from 6-pin to 4-pin.
2. Change the lead wire of T501 (5-pin) from 2-pin to 3-pin.
3. Put the label 530-10088-00 (220 V AC 50 Hz) on printed in 120 V AC 60 Hz.
4. Using spray adhesive, mount label 530-10058-00 (VOLTAGE CONVERSION ) to inside top cover.
5. Apply label 530-10013-00 (MILITARY CONVERSION) to bottom of unit.

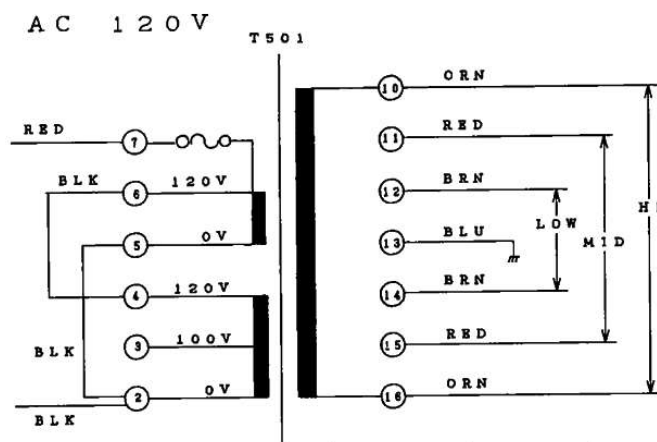


Fig. 3

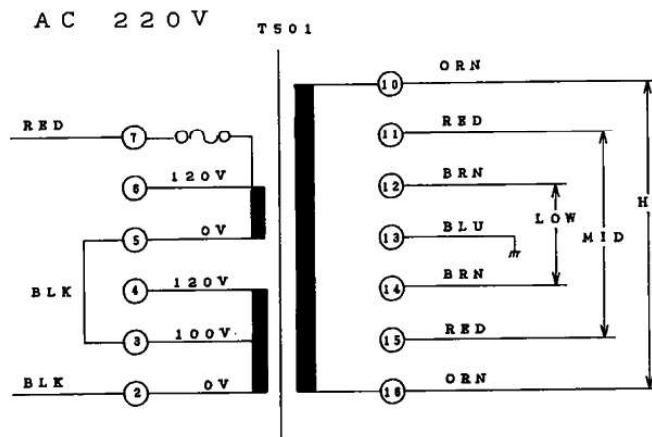
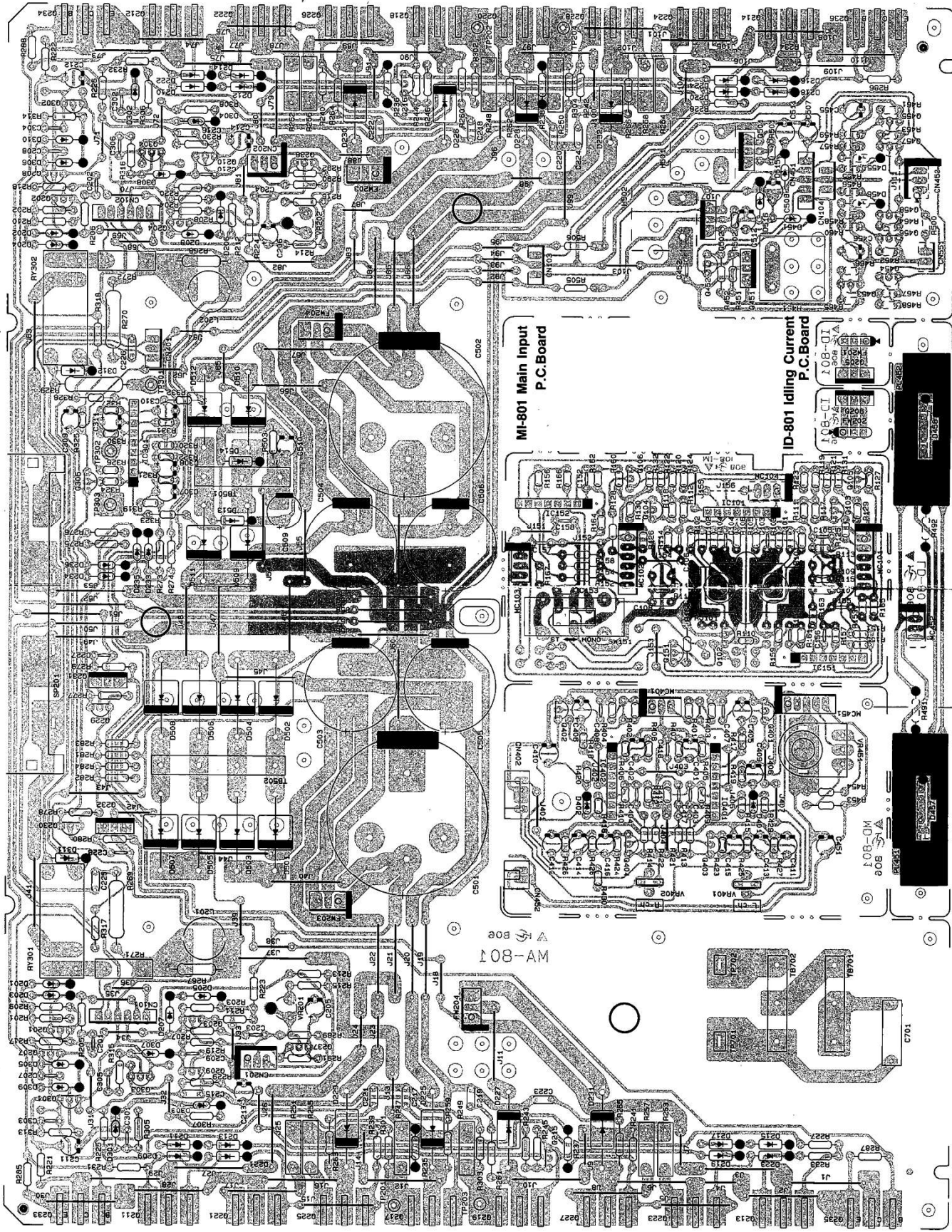


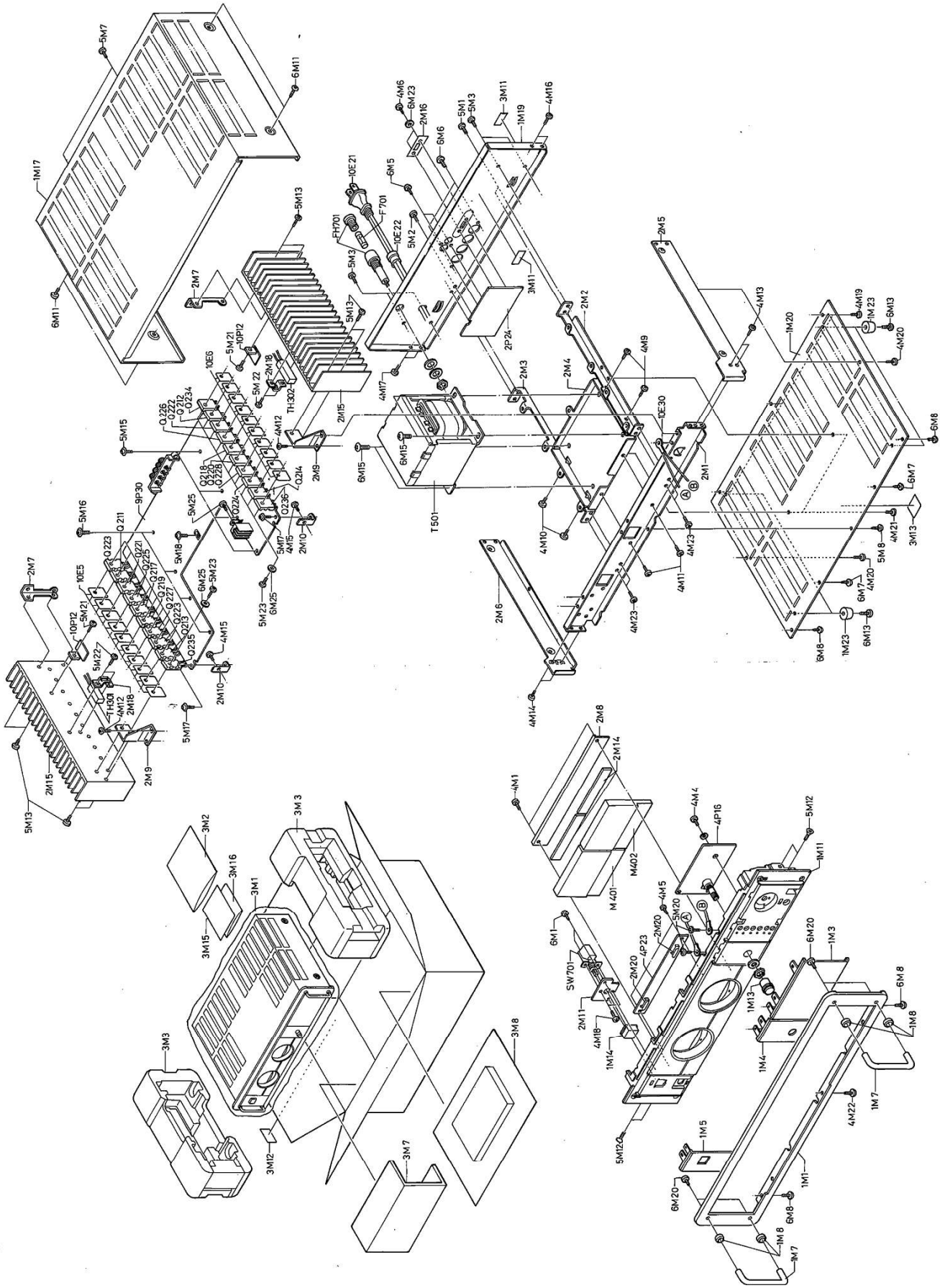
Fig. 4

MA-801 Main Amp P.C.Board



# EXPLODED VIEWS

## Main Unit and Packing





# PARTS LIST

## MAIN AMP PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
<b>P.C. BOARD</b>			
9E30	1	MA-801	PRINTED CIRCUIT BOARD
<b>SEMICONDUCTORS</b>			
0201-208	8	155176	DIODE
0209-220	12	1N4002	DIODE
0221-224	4	10EL54-AT	DIODE
0225-232	8	30DF2FC	DIODE
0233-236, 301-310	14	05446	DIODE
0311,312	2	1N4002	DIODE
0451	1	Z050-057	ZENER DIODE,1/2W,5.7V
0501-512	12	6A2-F	DIODE
0513,514	2	1N4002	DIODE
0515,516	2	Z050-157	ZENER DIODE,1/2W,15.7V
Q201,202	2	2SA1370-E,F	TRANSISTOR
Q203,204, 207,208	4	2SC3467-E,F	TRANSISTOR
Q209,210	2	2SA1370-E,F	TRANSISTOR
Q215,216, 229	3	2SC2240-GR	TRANSISTOR
Q230	1	2SA970-6R	TRANSISTOR
Q231	1	2SA1306A-0,Y	TRANSISTOR
Q232	1	2SC3298A-0,Y	TRANSISTOR
Q237,238	2	2SA1015-GR	TRANSISTOR
Q301,302	2	2SC2240-GR	TRANSISTOR
Q303-305	3	2SA970-6R	TRANSISTOR
Q451	1	2SD2012	TRANSISTOR
Q452	1	2SC1815-Y,GR	TRANSISTOR
Q501	1	2SD2012	TRANSISTOR
Q502	1	2SB1375	TRANSISTOR
<b>IC301</b>			
1	1	TA7317P	IC
<b>CAPACITORS</b>			
C201-204	4	HM605JSL101K	CERAMIC CAPACITOR
C205,206	2	NS-50TW4R7M	ELECTROLYTIC CAPACITOR
C207-210	4	HM605JSL680K	CERAMIC CAPACITOR
C211-214	4	NS100TW1R0M	ELECTROLYTIC CAPACITOR
C215,216	2	MY-50VU104J	MYLAR CAPACITOR
C217-224	8	NY100V5104K	MYLAR CAPACITOR
C225,226	2	NY100VU73J	MYLAR CAPACITOR
C227,228	2	HM605JYB102K	CERAMIC CAPACITOR
C301,302	2	HE705JSL271K	CERAMIC CAPACITOR
C303-306	4	HE705JYF103Z	CERAMIC CAPACITOR
C307,308	2	NS-25TW470M	ELECTROLYTIC CAPACITOR
C309	1	NS-25TW220M	ELECTROLYTIC CAPACITOR
C310	1	NS-25TW330M	ELECTROLYTIC CAPACITOR
C311	1	NS-50TW47M	ELECTROLYTIC CAPACITOR
C315	1	HE505JYB102K	CERAMIC CAPACITOR
C452	1	HE705JYF103Z	CERAMIC CAPACITOR
C501,502	2	BC00103MH60GH	ELECTROLYTIC CAPACITOR
C503,504	2	BC63332H240HC	ELECTROLYTIC CAPACITOR
C505,506	2	BC35682H240HC	ELECTROLYTIC CAPACITOR
C507,508	2	NS-25TW470M	ELECTROLYTIC CAPACITOR
C509	1	NS-35TW471M-KF	ELECTROLYTIC CAPACITOR
C510	1	NS-50TW1R0M	ELECTROLYTIC CAPACITOR
C511,512	2	NS-25TW470M	ELECTROLYTIC CAPACITOR
C701	1	YE103	METALIZED FILM CAPACITOR
<b>RESISTORS</b>			
R201-204	4	KA25ST911J	CARBON RESISTOR
R205-208	4	KA25ST102J	CARBON RESISTOR
R209-212	4	FR25T430J-LP	FLAME PROOF RESISTOR
R213,214	2	KA25ST193J	CARBON RESISTOR
R215,216	2	KA25ST122J	CARBON RESISTOR
R217-220	4	KA25ST100J	CARBON RESISTOR
R221-224	4	FR25ST100J-LP	FLAME PROOF RESISTOR
R225-228	4	KA25ST100J	CARBON RESISTOR
R229,230	2	KA25ST102J	CARBON RESISTOR
R231-234	4	KA25ST222J	CARBON RESISTOR
R235-238	4	KA50XT272J	CARBON RESISTOR
R239-242	4	KA25ST221J	CARBON RESISTOR
R243,244	2	KA25ST220J	CARBON RESISTOR
R245,246	2	KA25ST270J	CARBON RESISTOR
R247-258	12	HPC76R05K-LF	CEMENT RESISTOR
R259-266	8	FR50ST100J-LP	FLAME PROOF RESISTOR
R267,268	2	SA-1WT47J-LP	METAL OXIDE RESISTOR
R269,270	2	SA-2WT47J-LP	METAL OXIDE RESISTOR
R271,272	2	HPC75R05K-LF	CEMENT RESISTOR
R273,274	2	KA25ST101J	CARBON RESISTOR
R275,276	2	KA25ST222J	CARBON RESISTOR
R277,278	2	KA25ST302J	CARBON RESISTOR
R279,280	2	KA25ST102J	CARBON RESISTOR
R281,282	2	KA25ST222J	CARBON RESISTOR
R283,284	2	KA25ST562J	CARBON RESISTOR
R285-288	4	KA25ST101J	CARBON RESISTOR
R289,290	2	KA25ST132J	CARBON RESISTOR
R291,292	2	KA25ST302J	CARBON RESISTOR
R301-304	4	KA25ST151J	CARBON RESISTOR
R305-308	4	KA25ST472J	CARBON RESISTOR
R313-316	4	KA25ST101J	CARBON RESISTOR
R317,318	2	KA25ST393J	CARBON RESISTOR
R319-322	4	KA16ST563J	CARBON RESISTOR
R323	1	KA16ST104J	CARBON RESISTOR
R324	1	KA16ST473J	CARBON RESISTOR
R325	1	KA16ST223J	CARBON RESISTOR
R326	1	KA16ST473J	CARBON RESISTOR
R327	1	KA16ST224J	CARBON RESISTOR
R328	1	KA16ST203J	CARBON RESISTOR
R329	1	SA-2WT471J-LP	METAL OXIDE RESISTOR
R330	1	KA16ST563J	CARBON RESISTOR
R331	1	KA16ST333J	CARBON RESISTOR
R332	1	KA16ST183J	CARBON RESISTOR
R451	1	KA16ST471J	CARBON RESISTOR
R452,501, 502	3	KA16ST102J	CARBON RESISTOR
R503	1	KA25ST103J	CARBON RESISTOR
R505,506	2	FR25ST560J-LP	FLAME PROOF RESISTOR

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
VR201,202	2	SVR-06T3B501	SEMI-VARIABLE RESISTOR
<b>COILS</b>			
L201,202	2	104001	AIR-CORE COIL
<b>MISCELLANEOUS</b>			
H451	1	OSH-1625-HP	HEAT SINK
9E28	46	E100	JUMP WIRE
9E29	67	E200	JUMP WIRE
CH101,102	2	B6B-EH-A	CONNECTOR
CN103	1	B3B-EH-A	CONNECTOR
CN201,202	2	52011-0310	CONNECTOR
CN401	1	B3B-EH-A	CONNECTOR
CN451	1	B5B-EH-A	CONNECTOR
EL501	1	59BS1692	GND LUG
FW203,204	2	M203-770	MICRO SOCKET ASS'Y
RY301,302	2	AJR39091	RELAY
SP201	1	YK031-0353	SOCKET 4P (S.P.)
T3501	1	WF-3	TERMINAL PIN
T3502	1	WF-4	TERMINAL PIN
T3701,702	2	WF-3	TERMINAL PIN
TP201-204, 301-303	7	RP-001	TERMINAL PIN
TP701,702	2	59BS4795	GND LUG

## MAIN INPUT PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
<b>P.C. BOARD</b>			
2E24	1	MI-801	PRINTED CIRCUIT BOARD
<b>SEMICONDUCTORS</b>			
Q102	1	25C2878-A,B	TRANSISTOR
Q103,104	2	25C2240-GR	TRANSISTOR
Q105,106	2	2SA970-6R	TRANSISTOR
Q151	1	2SA1015-Y,GR	TRANSISTOR
<b>IC101,151, 152</b>			
3	3	NJM4565LB	I.C
<b>CAPACITORS</b>			
C101,102	2	ECGV1H474JZ	METALLIZED FILM CAPACITOR
C103,104	2	HE505JSL121K	CERAMIC CAPACITOR
C105,106	2	HE405JSL470K	CERAMIC CAPACITOR
C107,108	2	MY-50VU103J	MYLAR CAPACITOR
C109,110	2	S76R3TW221M-RT	ELECTROLYTIC CAPACITOR
C151,152	2	HE705JSL271K	CERAMIC CAPACITOR
C153	1	ECGV1H104JZ	METALLIZED FILM CAPACITOR
C155-158	4	HE705JYF103Z	CERAMIC CAPACITOR
<b>RESISTORS</b>			
R101,102	2	MF16ST222G	METAL FILM RESISTOR
R103,104	2	MF16ST104G	METAL FILM RESISTOR
R105,106	2	MF16ST471G	METAL FILM RESISTOR
R110	1	KA16ST105J	CARBON RESISTOR
R111,112	2	KA16ST104J	CARBON RESISTOR
R113,114	2	MF16ST273G	METAL FILM RESISTOR
R115,116	2	MF16ST103G	METAL FILM RESISTOR
R117,120	4	KA16ST162J	CARBON RESISTOR
R121-124	4	KA16ST822J	CARBON RESISTOR
R125-128	4	KA16ST472J	CARBON RESISTOR
R129-132	4	KA16ST202J	CARBON RESISTOR
R151-154	4	MF16ST123D	METAL FILM RESISTOR
R155-158	4	MF16ST102D	METAL FILM RESISTOR
R159,160	2	MF16ST911G	METAL FILM RESISTOR
R161,162	2	MF16ST562G	METAL FILM RESISTOR
R163,164	2	MF16ST102G	METAL FILM RESISTOR
R165	1	MF16ST303G	METAL FILM RESISTOR
R166	1	MF16ST222G	METAL FILM RESISTOR
R167	1	KA16ST472J	CARBON RESISTOR
R168	1	KA16ST204J	CARBON RESISTOR
<b>SWITCHES</b>			
SW151	1	SSB022	SLIDE SWITCH
<b>MISCELLANEOUS</b>			
2E21	5	E100	JUMP WIRE
NC101,102	2	M206-766	MICRO SOCKET ASS'Y
NC103	1	M203-762	MICRO SOCKET ASS'Y
RJ101	1	T5764-AA	RCA JACK 2P

## METER DRIVE PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C. BOARD 4E16	1	MD-801	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
D401,402	2	1S5176	DIODE
Q401-404	4	2SC1815-Y+GR	TRANSISTOR
IC401,402	2	NJM4558L	I.C
CAPACITORS			
C401,402	2	NS-16TW220M	ELECTROLYTIC CAPACITOR
C403,404	2	HE405JSL470K	CERAMIC CAPACITOR
C405,406	2	NS-16TW220M	ELECTROLYTIC CAPACITOR
C407,408	2	HE505JSL101K	CERAMIC CAPACITOR
C409,410	2	NS-50TW4R7M	ELECTROLYTIC CAPACITOR
C411,414	4	NS-16TW101M	ELECTROLYTIC CAPACITOR
C415,416	2	NS-25TW470M	ELECTROLYTIC CAPACITOR
C417,418	2	HE705JYF103Z	CERAMIC CAPACITOR
C451	1	NS-25TW100M	ELECTROLYTIC CAPACITOR
RESISTORS			
R401,402	2	KA16ST155J	CARBON RESISTOR
R403,404	2	KA16ST133J	CARBON RESISTOR
R405,406	2	KA16ST473J	CARBON RESISTOR
R407,408	2	KA16ST561J	CARBON RESISTOR
R409,410	2	KA16ST203J	CARBON RESISTOR
R411,412	2	KA16ST432J	CARBON RESISTOR
R413,414	2	KA16ST202J	CARBON RESISTOR
R415,416	2	KA16ST102J	CARBON RESISTOR
R417,418	2	KA16ST101J	CARBON RESISTOR
R419,420	2	KA16ST394J	CARBON RESISTOR
R421,422	2	KA16ST180J	CARBON RESISTOR
R423,426	4	KA16ST911J	CARBON RESISTOR
R427,428	2	KA16ST820J	CARBON RESISTOR
R429,430	2	KA16ST304J	CARBON RESISTOR
R431,432	2	KA25ST223J	CARBON RESISTOR
R453	1	KA16ST472J	CARBON RESISTOR
R454	1	KA16ST562J	CARBON RESISTOR
VR401,402	2	SVR-06S3B504	SEMI-VARIABLE RESISTOR
VR451	1	EVJ-2KA323814	ROTARY POTENTIOMETER
MISCELLANEOUS			
4E14	7	E100	JUMP WIRE
CN402	1	S4B-EH	CONNECTOR
CN452	1	S2B-EH	CONNECTOR
MC401	1	MZ03-763	MICRO SOCKET ASS'Y
MC451	1	MZ05-765	MICRO SOCKET ASS'Y

## INDICATOR PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C. BOARD 4E23	1	LD-801	PRINTED CIRCUIT BOARD
MISCELLANEOUS			
MC452	1	MZ02-761	MICRO SOCKET ASS'Y
PL451,452	2	BF310-05081A	LAMP, 12V, 0.15A

## IDLING CURRENT PCB ASS'Y

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
P.C. BOARD 10E12	2	ID-801	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
Q205,206	2	2SC1846-R	TRANSISTOR
MISCELLANEOUS			
FW201,202	2	4685243809-J-Z	3-LEAD, FLAT CABLE

## OTHER PARTS

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
MISCELLANEOUS			
W701,702	2	0155200A17-D-E	SOLDER PLATED WIRE
W703,704	2	0155200B08-E-E	SOLDER PLATED WIRE
W705	1	0155200B15-E-E	SOLDER PLATED WIRE
W706	1	0155200R15-E-E	SOLDER PLATED WIRE
W707	1	0155200Q21-E-E	SOLDER-PLATED WIRE
W708	1	0155200Q25-E-E	SOLDER PLATED WIRE
W709,710	2	0155200R23-E-E	SOLDER PLATED WIRE
W711	1	0155200Q26-D-E	SOLDER PLATED WIRE
W712	1	0155200R26-D-E	SOLDER PLATED WIRE
W713	1	0155200A30-E-L	SOLDER PLATED WIRE
W714,715	2	0155200T30-E-E	SOLDER PLATED WIRE
W717	2	U9-#018015	UL TYPE TUBE
MC402	1	MZ04-764	MICRO SOCKET ASS'Y
10E28	3	ND-5167	CORD CLAMP
10E29	6	8K-1	CORD CLAMP

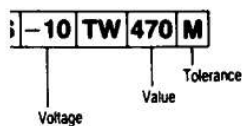
## EXPLODED VIEWS

REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
SEMICONDUCTORS			
Q211,212	2	2SC3280-R,0	TRANSISTOR
Q213,214	2	2SA1301-R,0	TRANSISTOR
Q217,218	2	2SC3281-R,0	TRANSISTOR
Q219,220	2	2SA1302-R,0	TRANSISTOR
Q221,222	2	2SC3281-R,0	TRANSISTOR
Q223,224	2	2SA1302-R,0	TRANSISTOR
Q225,226	2	2SC3281-R,0	TRANSISTOR
Q227,228	2	2SA1302-R,0	TRANSISTOR
Q233,234	2	2SC3281-R,0	TRANSISTOR
Q235,236	2	2SA1302-R,0	TRANSISTOR
COILS			
T501	1	NPT-27645	POWER TRANSFORMER
SWITCHES			
SW701	1	ESB-99713V	POWER SWITCH
MISCELLANEOUS			
F701	1	FU-621034-312	FUSE
M401,402	2	KL290B-19	METER
1M 1	1	M21755-1	FRONT PANEL
1M 3	1	N31103-1	SUB PANEL, R
1M 4	1	N45660-1	SUB PANEL, C
1M 5	1	N45659-1	SUB PANEL, L
1M 7	2	N44093A-BK1	HANDLE
1M 8	4	N44092-BK1	HANDLE SPACER
1M11	1	N10545-1	FRONT BASE
1M13	1	N44260-T-BK1	KNOB 12
1M14	1	N45417-BK	PUSH BUTTON
1M17	1	N21765	CABINET
1M19	1	N21766-1	REAR PANEL
1M20	1	N21767	BOTTOM PLATE
1M23	4	NO-7104	FOOT
2M 1	1	N21760	CENTER CHASSIS
2M 2	1	N30888A	CENTER CHASSIS, R
2M 3	1	N30889A	CENTER CHASSIS, L
2M 4	1	N31100	SUPPORT CHASSIS(PT)
2M 5	1	N31098	SIDE CHASSIS R
2M 6	1	N31099	SIDE CHASSIS L
2M 7	2	N44605	FITTINGS (HEAT SINK)
2M 8	1	N45658	METER BRACKET
2M 9	2	N45656	ANGLE (HEAT SINK)
2M10	2	N45453	ANGLE (HEAT SINK)
2M11	1	N45715	ANGLE (SWITCH)
2M14	2	N45716	CUSTOM
2M15	2	N30896-85	HEAT SINK
2M16	1	N44236	LOCK PLATE
2M18	2	N42222-2	FITTINGS (THERMAL RELAY)
2M20	2	N45667	INSULATION PLATE
3M11	2	N45335	LABEL, SERIAL NO.
3M13	1	N44043	LABEL, SA1965(LIGHTNING FLASH)
4M 1	2	T88+26X08-Y	TAP SCREW B, BIND HEAD, Y
4M 4,5	3	TPPW07+26X08-Y	TAP SCREW P-W ASSY, P HEAD, Y
4M 6	2	TSB+26X05-B	TAP SCREW S, BIND HEAD, B
4M 9-M23	34	TSB+30X06-Y	TAP SCREW S, BIND HEAD, Y
5M 1-M 3	8	TSB+30X06-B	TAP SCREW S, BIND HEAD, B
5M 7,8	3	TSB+30X08-B	TAP SCREW S, BIND HEAD, B
5M12,113	12	TSS+30X08-Y	TAP SCREW S, FLAT HEAD, Y
5M15-M18	11	TSC+30X08-Y	TAP SCREW S, WASHER FACED, Y
5M20-M22	8	TBB+30X08-Y	TAP SCREW B, BIND HEAD, Y
5M23	20	TBA+30X14-Y	TAP SCREW B, (FOR POWER IC)
5M25	1	TSB+30X08-Y	TAP SCREW S, BIND HEAD, Y
6M 1	2	TPM+30X08-Y	TAP SCREW P, ROUND HEAD, Y
6M 5-M 8	8	TPM+30X10-B	TAP SCREW P, ROUND HEAD, B
6M11	4	TSB+40X06-B	TAP SCREW S, BIND HEAD, B
6M13	4	TSP+40X10-Y	TAP SCREW S, PAN HEAD, Y
6M15	4	TBT+40X08-Y	TAP SCREW, TRUSS, Y
6M20	4	SSPS2+40X10-B	SCREW-SP ASSY, PAN HEAD, B
6M23	2	2AWX0826-05-B	PLAIN WASHER, B
6M25	20	2AWX0830-05-Y	PLAIN WASHER, Y
FH701	1	FH-032C	FUSE HOLDER
TH301,302	2	UI2-10005-280A	THERMAL RELAY
10E 5,6	20	AC262	MICA
10E21	1	ACC-022E5-4EE1	LINE CORD
10E22	1	SR-4N-4	CORD STOPPER
10E30	1	R-040-11-15	CABLE ASS'Y
PACKING PARTS			
MISCELLANEOUS			
3M 1	1	N41318-1	POLYETHYLENE BAG
3M 2	1	N40487	POLYETHYLENE BAG (ACCESSORIES)
3M 3	2	N21794	PACKING PAD
3M 6	1	N21793-1	INNER CARTON
3M 7	1	N45750	FRONT PAD
3M 8	1	N45752	PACKING PAD
3M12	1	N42235	SHEET, SERIAL NUMBER
3M15	1	CARVER-WC	CARD, WARRANTY REGISTRATION
3M16	1	OH-940A	INSTRUCTION MANUAL
P.C. BOARD ASS'Y			
REF. NO.	Q'TY	CARVER PART NO.	DESCRIPTION
2P24	1		MAIN INPUT PCB ASS'Y
4P16	1		METER DRIVE PCB ASS'Y
4P23	1		INDICATOR PCB ASS'Y
9P30	1		MAIN AMP PCB ASS'Y
10P12	1		IDLING CURRENT PCB ASS'Y

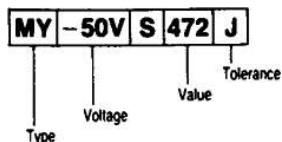


## Capacitors Description

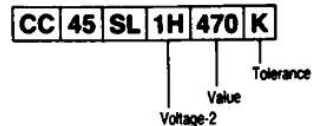
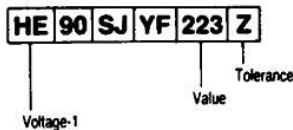
### Electrolytic



### • Mylar · Styrol



### • Ceramic

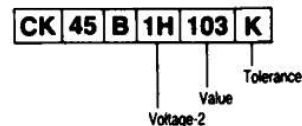


### Electrolytic

Type	Voltage	Value	Tolerance
Low Leak	-10: 10V	R47: 0.47 $\mu$ F	K: $\pm 10\%$
Non-Pole	-50: 50V	4R7: 4.7 $\mu$ F	M: $\pm 20\%$
Standard	6R3: 6.3V	470: 47 $\mu$ F	
		471: 470 $\mu$ F	
		472: 4700 $\mu$ F	

### Electrolytic · Styrol

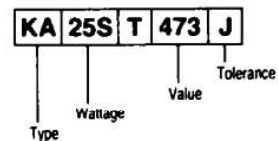
Type	Voltage	Value	Tolerance
Mylar	-25V: 25V	4R7: 4.7pF	G: $\pm 2\%$
Styrol	125V: 125V	470: 47pF	J: $\pm 5\%$
	-63T: 63V	471: 470pF	K: $\pm 10\%$
		472: 4700pF	M: $\pm 20\%$
		473: 0.047 $\mu$ F	
		474: 0.47 $\mu$ F	
		(1000pF=0.001 $\mu$ F)	



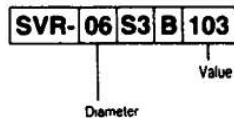
Voltage-1	Voltage-2	Value	Tolerance
HC: 25V	1E: 25V	4R7: 4.7pF	C: $\pm 0.25$ pF
HE: 50V	1H: 50V	470: 47pF	D: $\pm 0.5$ pF
H: 100V	2H: 500V	471: 470pF	F: $\pm 1$ pF
HK: 250V		472: 4700pF	J: $\pm 5\%$
HM: 500V		473: 0.047 $\mu$ F	K: $\pm 10\%$
		474: 0.47 $\mu$ F	M: $\pm 20\%$
		(1000pF=0.001 $\mu$ F)	Z: +80~-20%

## Resistors Description

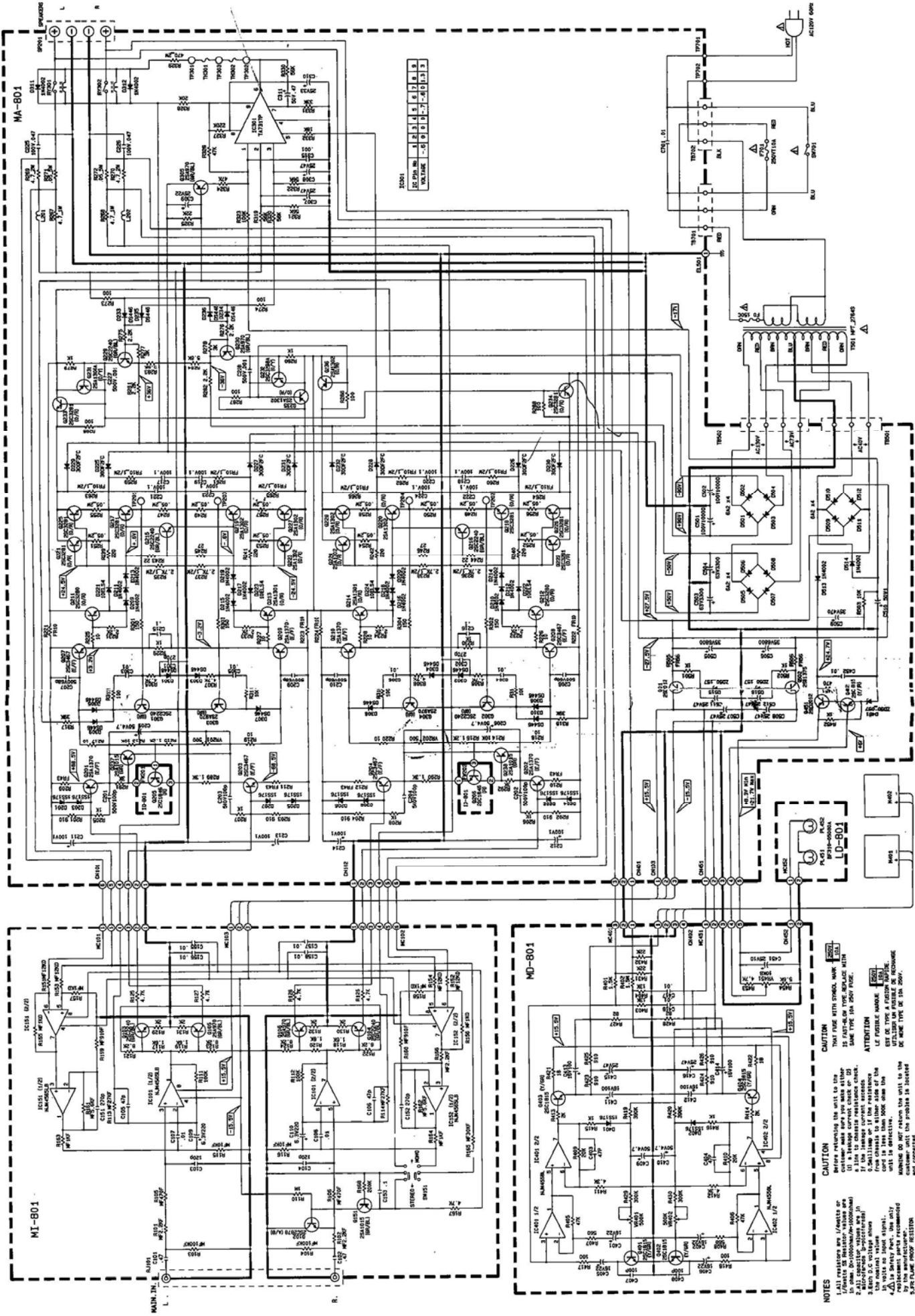
### Fixed



### • Semi-Variable



Type	Wattage	Value	Tolerance	Diameter
CE: Cement Case	-2W: 2W	R47: 0.47 $\Omega$	M: $\pm 20\%$	08: 8 $\phi$
FR: Flame Proof	10W: 10W	4R7: 4.7 $\Omega$	K: $\pm 10\%$	10: 10 $\phi$
KA: Carbon	16S: 1/6W	470: 47 $\Omega$	J: $\pm 5\%$	06: 6 $\phi$
MF: Metal Film	20S: 1/5W	471: 470 $\Omega$	G: $\pm 2\%$	
RF: Fusible	25S: 1/4W	472: 4.7k $\Omega$	F: $\pm 1\%$	
SA: Metal Oxide	50S: 1/2W	473: 47k $\Omega$	D: $\pm 0.5\%$	
	50X: 1/2W	474: 470k $\Omega$		
	S3W: 3W	475: 4.7M $\Omega$		



IC101	7805
IC102	7808
IC103	7805P
IC104	7805
IC105	7805
IC106	7805
IC107	7805
IC108	7805
IC109	7805
IC110	7805
IC111	7805
IC112	7805
IC113	7805
IC114	7805
IC115	7805
IC116	7805
IC117	7805
IC118	7805
IC119	7805
IC120	7805
IC121	7805
IC122	7805
IC123	7805
IC124	7805
IC125	7805
IC126	7805
IC127	7805
IC128	7805
IC129	7805
IC130	7805

**NOTES**

1. All resistors are  $\pm 1\%$  tolerance unless otherwise specified.
2. All capacitors are  $\pm 10\%$  tolerance unless otherwise specified.
3. All diodes are silicon unless otherwise specified.
4. All transistors are silicon unless otherwise specified.
5. All integrated circuits are silicon unless otherwise specified.
6. All components are to be used as specified unless otherwise indicated.
7. All components are to be used as specified unless otherwise indicated.
8. All components are to be used as specified unless otherwise indicated.
9. All components are to be used as specified unless otherwise indicated.
10. All components are to be used as specified unless otherwise indicated.

**CAUTION**

Before returning the unit to the customer, make sure you have either:

1. Replaced the fuse with the same type and rating.
2. Checked the fuse holder for a loose connection.
3. Checked the fuse holder for a short circuit.
4. Checked the fuse holder for a bad connection.
5. Checked the fuse holder for a bad connection.

**ATTENTION**

IF THE FUSE IS TYPE A FUSE, MAKE SURE YOU USE THE CORRECT TYPE OF FUSE.

**CAUTION**

THE FUSE WITH SYMBOL MARK IS FAST-BLOW TYPE. REPLACE WITH SAME TYPE 1A 250V FUSE.

**ATTENTION**

IF THE FUSE IS TYPE A FUSE, MAKE SURE YOU USE THE CORRECT TYPE OF FUSE.

**CAUTION**

DO NOT RETURN THE UNIT TO THE CUSTOMER UNTIL THE PROBLEM IS IDENTIFIED AND CORRECTED.

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1989 CARVER CORPORATION

Printed in Japan

# CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # TFM-25-2

Model: TFM-25

Serial Nos. As Needed

REASON: To prevent components from discoloring the PCB and to improve circuit reliability.

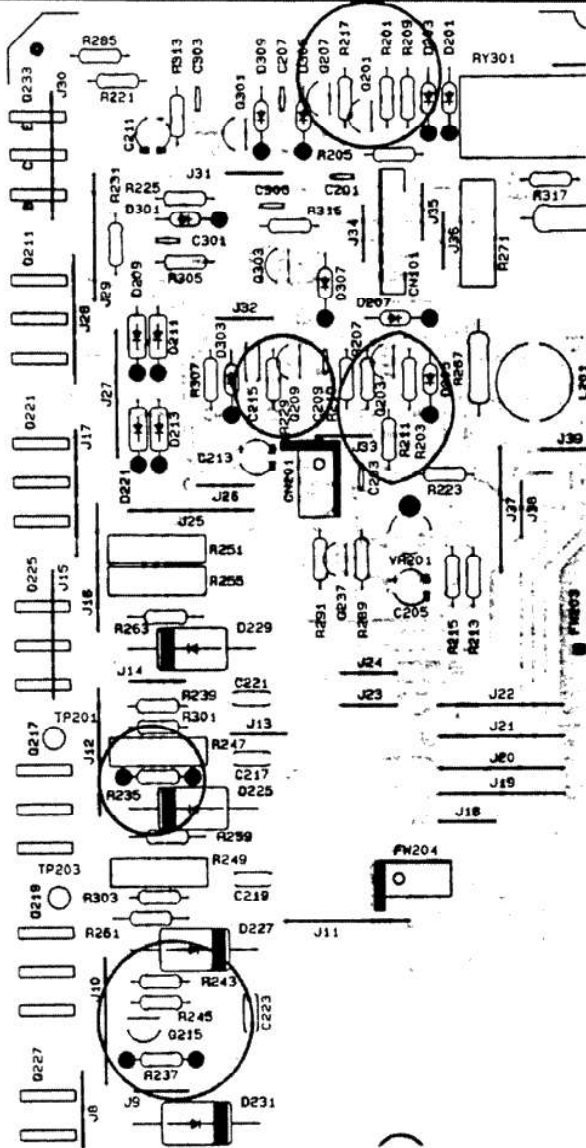
Date: 4/15/92

### DELETE

- Qty 4 43 ohm 1/4W Flame Proof Resistor (R209-212)  
P/N FR25ST430J-LP
- Qty 2 1kΩ 1/4W Carbon Resistor (R229,230)  
P/N KA25ST102J
- Qty 2 22 ohm 1/4W Carbon Resistor (R243,244)  
P/N KA25ST220J
- Qty 2 27 ohm 1/4W Carbon Resistor (R245,246)  
P/N KA25ST270J

### ADD

- Qty 4 62 ohm 1/4W Flame Proof Resistor (R209-212)  
P/N RM062-QJT
- Qty 2 1.5kΩ 1/4W Carbon Resistor (R229,230)  
P/N 251-00074-00
- Qty 2 22 ohm 1/4W Flame Proof Resistor (R243,244)  
P/N RM022-QJT
- Qty 2 27 ohm 1/4W Flame Proof Resistor (R245,246)  
P/N RM027-QJT
- Qty 4 2.7kΩ 1/2W Carbon Resistor (R235-238)  
P/N 251-10080-03



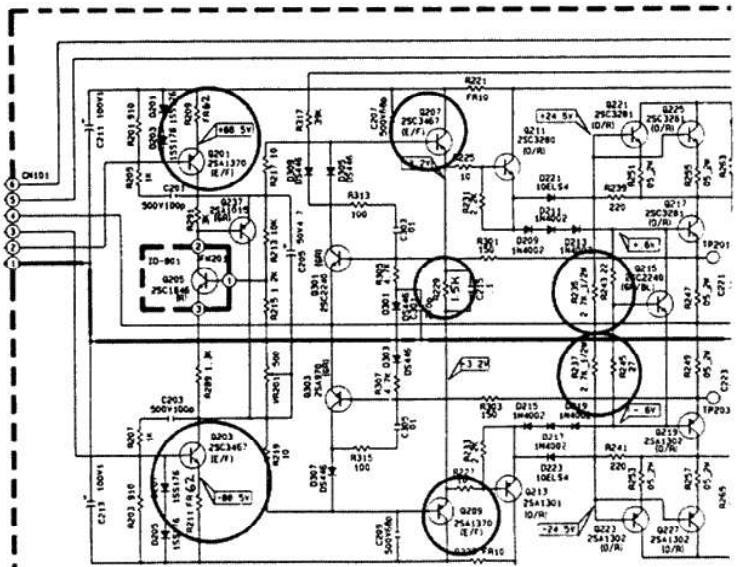
MA-801 Main Amp P.C.Board

## PROCEDURE

If the predriver or driver transistors (Q201-204, Q207-210) have shorted or exhibit signs of discoloring the PC Board:

1. Remove and replace Q201, Q202, Q209, Q210 (P/N 2SA1370-E,F), and remove and replace Q203, Q204, Q207, Q208 (P/N 2SC3467-E,F) with new transistors. Install the new transistors so they are 3/8" to 1/2" above the PCB.
2. Replace R209-R212 43 ohm 1/4W flame proof resistors with 62 ohm 1/4W flame proof resistors.
3. Replace R229, R230 1kΩ 1/4W resistors with 1.5kΩ 1/4W resistors.
4. Replace R243, R244 with 22Ω 1/4W flame proof resistors, and R245, R246 with 27Ω 1/4W flame proof resistors.
5. Verify that R235-R238 are 2.7kΩ 1/2W resistors (some units may have 1/4W resistors).

NOTE: Lift all flame proof resistors 1/8"-1/4" off the PCB before soldering into place. Check idle current; reset if necessary (see Service Manual).



Left Channel Only Shown

Service Approval

*B. Coffey* 4/15/92

Engineering Approval

*W. Richardson*

4-15-92