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# CARVER

## M-500t Power Amplifier

### SERVICE MANUAL

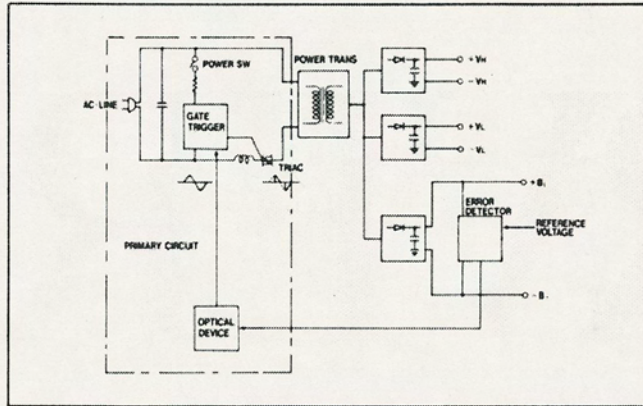
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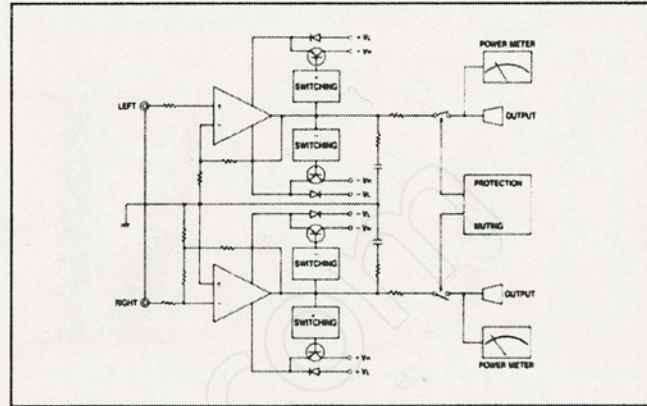


# BLOCK DIAGRAM

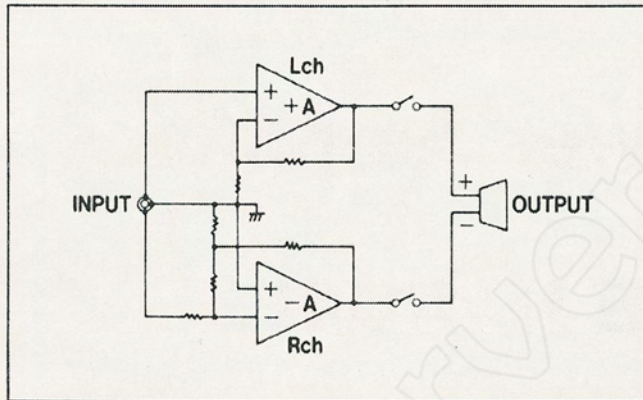
## POWER SUPPLY CONTROL



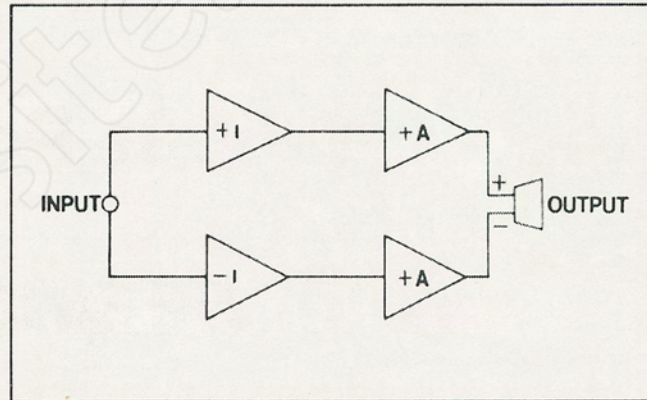
## AMPLIFICATION



## BTL CIRCUIT



## UNIT



## SPECIFICATIONS

- **Sensitivity** ..... 2.0V  
Input : 1000Hz  
Output: 200W
- **Output power** ..... more than 200W  
Input : Main in  
Output: 0.05% THD  
20Hz-20000Hz continuous both CH. driven
- **IM Distortion factor** ..... less than 0.05%  
Input : Aux 60Hz: 7000Hz/4.1  
Output: 200W
- **Frequency response** ..... 20Hz-20000Hz  
Input : Main in  
Output: 1000Hz 20W±0.5dB
- **Signal to noise ration (IHF-A)** ..... more than 100dB  
(input short) Main in
- **Residual noise (IHF-A)** ..... 300μV
- **Damping factor** ..... more than 30  
Input : Aux 150Hz  
Output: 20W

- **Input impedance** ..... 15 Kohm  
at 1000Hz Main in
- **Dynamic head room** ..... stereo +1dB (8Ω)  
mono +1dB (8Ω)
- **Crosstalk**  
Between the channels of stereo equipment  
Output: 20W  
Main in (Input: Shorted)  
1000Hz ..... more than 80dB  
20000Hz ..... more than 60dB
- **Output load**  
Speaker output ..... 8ohm
- **Maximum power consumption** ..... 1100watts
- **AC power supply** ..... 220V, 50/60Hz
- **Netweight** ..... 10.5kg
- **Dimension** ..... W=440 H=110 D=348mm

Specifications and design are subject to change without notice.

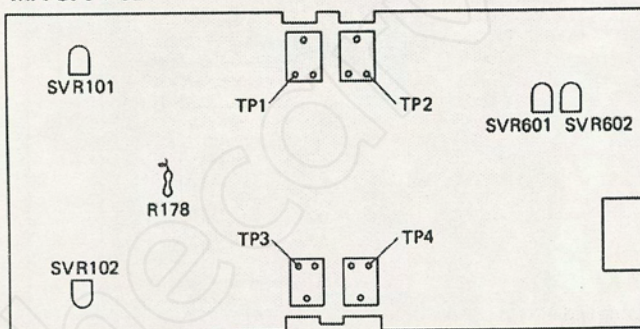


# ALIGNMENT PROCEDURES

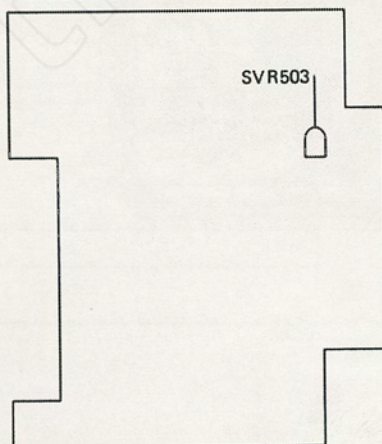
Step	Connect	Ajust	Adjust for
<b>POWER SUPPLY</b>			
1	Rotate SVR503 and SVR504 fully counter-clockwise.		
2	<u>VTVM</u> R178 (test point side)	SVR503	74V
<b>BIAS CURRENT</b>			
3	Preheat for more than 5 minutes.		
4	<u>DC digital voltmeter</u> LIVE/GND TP1/TP2 (L) TP3/TP4 (R)	SVR101 (L) SVR102 (R)	6mV ± 1mV
<b>METER</b>			
5	Confirm that the meters indicate 0 watt at no input.		
6	Input . . . . . 1kHz to input jacks. Output . . . . . Speaker out		Speaker out 100W
7		SVR601 (L) SVR602 (R)	Meters 100W

## ALIGNMENT POINTS

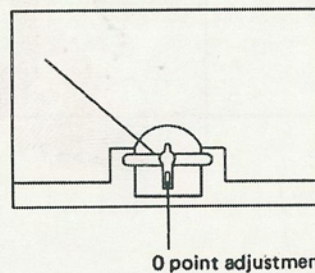
**MA-375 PCB**



**PS-533 PCB**



**METER UNIT**



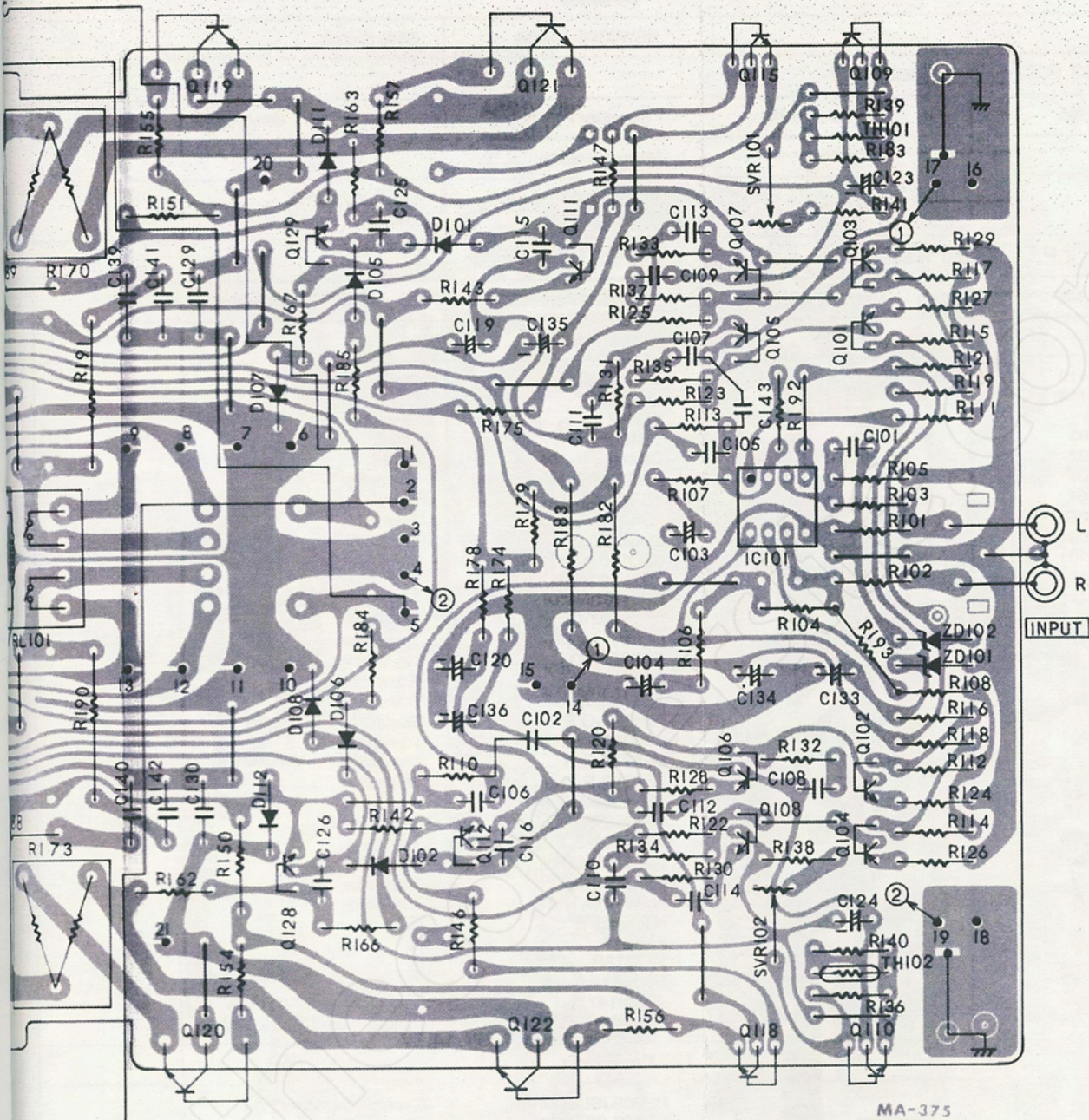






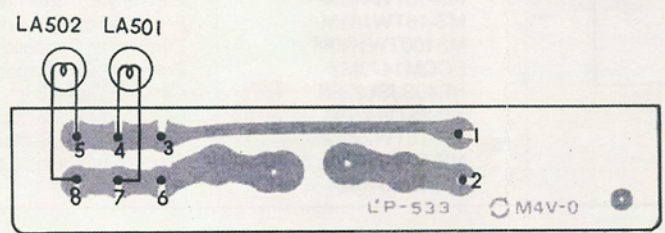






MA-375

**MAIN AMP BOARD (LP-533)**





### 1. IS-533 P.C. Board Assembly

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
<b>Switches</b>				
	1		HSW0302-01-330	Slide Switch

### 2. LP-533 P.C. Board Assembly

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
<b>Miscellaneous</b>				
LA501	1		BF352-53001A	Lamp, 8V, 0.25A
LA502	1		BF352-53002A	Lamp, 8V, 0.25A

### 3. MA-375 P.C. Board Assembly

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
<b>Semiconductors</b>				
D101~110	10		1N4148	Diode
D111~114	4		1N4002	Diode
D201	1		DS442	Diode
D202,203	2		1N4002	Diode
D301,302	2		DS442	Diode
Q101,102	2		2SC1980-S,T	Transistor
Q103,104	2		2SA921-S,T	Transistor
Q105,106	2		2SA1110-Q,R	Transistor
Q107,108	2		2SC2590-Q,R	Transistor
Q109,110	2		2SC1567-Q,R	Transistor
Q111,112	2		2SC2590-Q,R	Transistor
Q113,114	2		2SA1110-Q,R	Transistor
Q115	1		2SC2591-Q,R	Transistor
Q116,117	2		2SA1111-Q,R	Transistor
Q118	1		2SC2591-Q,R	Transistor
Q119~122	4		2SD845-O,R	Transistor
Q123~126	4		2SB755-O,R	Transistor
Q127	1		2SA777-Q,R	Transistor
Q128,129	2		2SC1509-Q,R	Transistor
Q130	1		2SA777-Q,R	Transistor
Q201	1		2SA722-S,T	Transistor
Q202	1		2SC1328-S,T	Transistor
Q203	1		2SA722-S,T	Transistor
Q204~206	3		2SC1328-S,T	Transistor
Q207	1		2SC1509-Q,R	Transistor
Q301,302	2		2SC1980-S,T	Transistor
Q303,304	2		2SA921-S,T	Transistor
IC101	1		NJM072DE	IC
IC301	1		AN6912	IC
IC601	1		TA7318P	IC
TH101,102	2		SDT65	Thermistor
ZD101,102	2		ZD50-147	Zener Diode, 1/2W, 14.7V
ZD601,602	2		ZD50-117	Zener Diode, 1/2W, 11.7V
<b>Capacitors</b>				
C101	1		HE90SJSL471K	Ceramic Capacitor
C102	1		HE40SJSL220K	Ceramic Capacitor
C103,104	2		MS-16TW471M	Electrolytic Capacitor
C105	1		HE40SJSL560K	Ceramic Capacitor
C106	1		HE50SJSL820K	Ceramic Capacitor
C107~110	4		HE50SJSL101K	Ceramic Capacitor
C111~114	4		MY-50VS683J	Mylar Capacitor
C115~118	4		HM60SJSL220K	Ceramic Capacitor
C119~122	4		MS100TW1R0M	Electrolytic Capacitor
C123,124	2		MS-50TW1R0M	Electrolytic Capacitor
C125~128	4		MY-50VS103J	Mylar Capacitor
C129~132	4		ECQM1473MZ	Polyester Film Capacitor
C133	1		MS-16TW470M	Electrolytic Capacitor
C134	1		MS-16TW101M	Electrolytic Capacitor
C135~138	4		MS100TW1R0M	Electrolytic Capacitor
C139~142	4		ECQM1473MZ	Polyester Film Capacitor
C143	1		HE40SJSL220K	Ceramic Capacitor
C201	1		NP-25TW470M	Electrolytic Capacitor
C202	1		MS-16TW221M	Electrolytic Capacitor
C203	1		MS-50TW470M	Electrolytic Capacitor
C601	1		MY-50VS103J	Mylar Capacitor



Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
C602	1		MY-50VS103J	Mylar Capacitor
C605,606	2		MS-16TW470M-RT	Electrolytic Capacitor
<b>Resistors</b>				
R101	1		KA25ST333J	Carbon Resistor
R102	1		KA25ST153J	Carbon Resistor
R103	1		KA25ST102J	Carbon Resistor
R104	1		KA25ST133J	Carbon Resistor
R105	1		KA25ST333J	Carbon Resistor
R106	1		KA25ST102J	Carbon Resistor
R107	1		KA25ST112J	Carbon Resistor
R108	1		KA25ST102J	Carbon Resistor
R110	1		MF25ST223J	Metal Film Resistor
R111	1		KA25ST102J	Carbon Resistor
R112	1		KA25ST272J	Carbon Resistor
R113	1		MF25ST223J	Metal Film Resistor
R114,115	2		KA25ST272J	Carbon Resistor
R116	1		KA25ST153J	Carbon Resistor
R117	1		KA25ST272J	Carbon Resistor
R118,119	2		KA25ST153J	Carbon Resistor
R120	1		KA25ST102J	Carbon Resistor
R121	1		KA25ST153J	Carbon Resistor
R122,123	2		KA25ST102J	Carbon Resistor
R124	1		KA25ST152J	Carbon Resistor
R125	1		KA25ST102J	Carbon Resistor
R126,127	2		KA25ST152J	Carbon Resistor
R128	1		KA25ST221J	Carbon Resistor
R129	1		KA25ST152J	Carbon Resistor
R130,131	2		KA25ST221J	Carbon Resistor
R132	1		KA25ST102J	Carbon Resistor
R133	1		KA25ST221J	Carbon Resistor
R134,135	2		KA25ST102J	Carbon Resistor
R136	1		KA25ST332J	Carbon Resistor
R137	1		KA25ST102J	Carbon Resistor
R138	1		KA25ST561J	Carbon Resistor
R139	1		KA25ST332J	Carbon Resistor
R140,141	2		KA25ST561J	Carbon Resistor
R142~145	4		KA25ST471J	Carbon Resistor
R146~149	4		KA25ST560J	Carbon Resistor
R150~153	4		KA50ST680J	Carbon Resistor
R154,155	2		KA25ST4R7J	Carbon Resistor
R156	1		KA25ST4R7J	Carbon Resistor
R157~161	5		KA25ST4R7J	Carbon Resistor
R162~165	4		KA25ST271J	Carbon Resistor
R166~169	4		KA25ST472J	Carbon Resistor
R170~173	4		ERF5GEKR22N	Cement Resistor
R174~177	4		KA25ST100J	Carbon Resistor
R178~181	4		KA25ST220J	Carbon Resistor
R182	1		SA-2WT682J	Metal Oxide Resistor
R183	1		KA25ST561J	Carbon Resistor
R183	1		SA-2WT682J	Metal Oxide Resistor
R184,185	2		KA25ST183J	Carbon Resistor
R188~191	4		SA-2WT100J	Metal Oxide Resistor
R192	1		KA25ST303J	Carbon Resistor
R193	1		KA25ST224J	Carbon Resistor
R201~203	3		KA25ST563J	Carbon Resistor
R204	1		KA25ST102J	Carbon Resistor
R205	1		KA25ST563J	Carbon Resistor
R206	1		KA25ST223J	Carbon Resistor
R207	1		KA25ST562J	Carbon Resistor
R208	1		KA25ST102J	Carbon Resistor
R209	1		KA25ST104J	Carbon Resistor
R210	1		KA25ST473J	Carbon Resistor
R211	1		KA25ST223J	Carbon Resistor
R212	1		KA50ST271J	Carbon Resistor
R215	1		KA25ST102J	Carbon Resistor
R216	1		KA25ST561J	Carbon Resistor
R218	1		KA25ST223J	Carbon Resistor
R301~306	6		KA25ST103J	Carbon Resistor
R307~310	4		KA25ST474J	Carbon Resistor
R311,312	2		KA25ST182J	Carbon Resistor
R313~327	14		KA25ST103J	Carbon Resistor
R328,329	2		KA25ST683J	Carbon Resistor
R330	1		KA25ST912J	Carbon Resistor
R331	1		KA25ST822J	Carbon Resistor



Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
R601,602	2		SA-2WT182J	Metal Oxide Resistor
R603,604	2		KA25ST823J	Carbon Resistor
R612,613	2		SA-1WT332J	Metal Oxide Resistor
R614,615	2		KA25ST103J	Carbon Resistor
SVR101,102	2		SVR-08T3B501	Semi-Variable Resistor
SVR601,602	2		SVR-08T3B301	Semi-Variable Resistor
<b>Miscellaneous</b>				
	4		JP-Y24C01	Jump Wire
	2		KL-290D-1	Meter
	2		UI2-10005-200A	Thermal Relay
RL101	39		5E-T05-AT	Jump Wire
	1		180008	Relay

## 4. PS-533 P.C. Board Assembly

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
<b>Semiconductors</b>				
D401	1		RGP30G-5001L	Diode
D401	1		30DF2FC	Diode
D402	1		RGP30G-5001L	Diode
D402	1		30DF2FC	Diode
D403	1		RGP30G-5001L	Diode
D403	1		30DF2FC	Diode
D404	1		RGP30G-5001L	Diode
D404	1		30DF2FC	Diode
D409~412	4		1N4002	Diode
D502	1		GP30D-L	Diode
D502	1		1N5402-F	Diode
D503	1		GP30D-L	Diode
D503	1		1N5402-F	Diode
D504	1		GP30D-L	Diode
D504	1		1N5402-F	Diode
D505	1		GP30D-L	Diode
D505	1		1N5402-F	Diode
D506	1		DBA10C	Diode
D507~509	3		1N4002	Diode
D511	1		DS442	Diode
D516,517	2		1N4002	Diode
D518	1		1B4B42	Diode
Q401,402	2		2SA1111-Q,R	Transistor
Q403,404	2		2SC2591-Q,R	Transistor
Q405,406	2		2SD1047-E	Transistor
Q407,408	2		2SB817-E	Transistor
Q501	1		2SC1815-Y,GR	Transistor
Q502	1		2SA921-S,T	Transistor
Q503~505	3		2SC1815-Y,GR	Transistor
Q506,507	2		2SA1015-Y,GR	Transistor
Q508	1		2SC1815-Y,GR	Transistor
PC501	1		TLP631	Photo Coupler
ZD501	1		ZD50-200	Zener Diode, 1/2W, 20.0V
ZD502	1		ZD50-100	Zener Diode, 1/2W, 10.0V
<b>Capacitors</b>				
C401~404	4		HE70SJYB272K	Ceramic Capacitor
C409~412	4		HE12SJYB103K	Ceramic Capacitor
C413~416	4		HE50SJYB102K	Ceramic Capacitor
C501	1		MMS104M	Metallized Film Capacitor
C502	1		ECQU1A104ME	Metallized Film Capacitor
C503,504	2		ECQU1A332ME	Metallized Film Capacitor
C506	1		MY-50VS393J	Mylar Capacitor
C507	1		MF-630TD103M	Metallized Film Capacitor
C507	1		TDXM-2J103KZBT	Metallized Film Capacitor
C508,509	2		BC80682YC60GH4	Electrolytic Capacitor
C510,511	2		BC50682XB50CC3	Electrolytic Capacitor
C512,513	2		BC80222M250CC2	Electrolytic Capacitor
C514	1		MF-630TD103M	Metallized Film Capacitor
C514	1		TDXM-2J103KZBT	Metallized Film Capacitor
C515	1		MF-630TD103M	Metallized Film Capacitor
C515	1		TDXM-2J103KZBT	Metallized Film Capacitor
C517	1		MS-50TW1R0M	Electrolytic Capacitor
C521	1		MF-630TD103M	Metallized Film Capacitor



Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
C521	1		TDXM-2J103KZBT	Metallized Film Capacitor
C525	1		NS-25TW101M	Electrolytic Capacitor
C526	1		NS-16TW101M	Electrolytic Capacitor
C527	1		MS-16TW100M	Electrolytic Capacitor
C528	1		MS-25TW4R7M	Electrolytic Capacitor
C529	1		ECQM1H224V	Polyester Film Capacitor
<b>Resistors</b>				
R405~408	4		KA25ST102J	Carbon Resistor
R409~412	4		KA50ST103J	Carbon Resistor
R413~416	4		KA25ST100J	Carbon Resistor
R417~420	4		KA25ST223J	Carbon Resistor
R501	1		KA50ST180J	Carbon Resistor
R504	1		KA50ST274J	Carbon Resistor
R505	1		KA50ST683J	Carbon Resistor
R506	1		KA25ST683J	Carbon Resistor
R508	1		KA25ST101J	Carbon Resistor
R509	1		KA25ST103J	Carbon Resistor
R510	1		KA50ST103J	Carbon Resistor
R511	1		KA25ST224J	Carbon Resistor
R512	1		KA25ST223J	Carbon Resistor
R513	1		KA25ST103J	Carbon Resistor
R514	1		KA25ST472J	Carbon Resistor
R515~517	3		KA25ST103J	Carbon Resistor
R518~519	2		KA25ST104J	Carbon Resistor
R520	1		KA25ST100J	Carbon Resistor
R521	1		KA25ST4R7J	Carbon Resistor
R522	1		KA25ST273J	Carbon Resistor
R523	1		KA25ST153J	Carbon Resistor
R524,525	2		KA50ST223J	Carbon Resistor
R526	1		KA25ST182J	Carbon Resistor
R527	1		KA25ST102J	Carbon Resistor
SVR503	1		SVR-08T3B503	Semi-Variable Resistor
<b>Coils</b>				
L501	1		SF-HP-8A-01	Choke Coil
<b>Miscellaneous</b>				
	1		FS-014	Receptacle
	1		FS-015	Receptacle
	1		FS-016	Receptacle
	3		JP-Y24C01	Jump Wire
	4		1S3MPB	Mica
	1		59BS4795	Gnd Lug

## 5. Inner Construction Parts

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
<b>Switches</b>				
11E1	1		ESB70231T	Power Switch
11E19	1		HSW0302-01-330	Slide Switch
<b>P.C.Board Assembly</b>				
12E1	1		16A1P01B	P.C.Board Ass'y (MA-375)
12E2	1		16A1P01B-1	P.C.Board Ass'y (SPS-375)
12E3	1		16A1P02C	P.C.Board Ass'y (PS-533)
12E5	1		16A1P02C-1	P.C.Board Ass'y (IS-533)
12E6	1		16A1P02C-2	P.C.Board Ass'y (LP-533)
<b>Miscellaneous</b>				
1E3	1		NPT-1644	Power Transformer
1E4	1		NPT-1654	Power Transformer
5E26	4		1S3MPB	Mica
10E11	8		AC243	Mica
10E12	4		NO.18A	Mica
10E13	4		NO.24B	Insulator Bush
2M1	1		N20B22A	Front Chassis
2M2	1		N30553	Center Chassis
2M3	1		N30554	Support Chassis (P.T.)



Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
2M4	2		N30555	Joint Angle
2M5	1		N30556	Fittings (Lamp)
2M6	2		N42388	Fittings (Thermal Relay)
2M7	1		N30557A	Heat Sink
2M8	2		N30559	Heat Sink
2M9	1		N30558	Shower-Glass
2M10	2		N42666	Cushion
2M11	3		N41960	Cabinet Mat
2M12	4		N42667	Meter Cushion
2M13	1		N42669	Shield Paper (Lamp)
2M14	2		N42710	Meter Cushion
2M15	1		N42711	Cushion
2M16	1		N42789	Spacer
2M17	1		N42792	Cushion
2M20	1		N42635	Fittings (P.C.B.)
2M21	2		N43125	Spacer
3M29	4		TSP+40X14-B	Tap Screw S, Pan Head, B
3M30	2		VJR-3	Snake Lug
4M1	2		SSP+20X06-B	Screw, Pan Head, B
4M2	2		TBB+26X06-Y	Tap Screw B, Bind Head, Y
4M3	19		TSB+30X06-Y	Tap Screw S, Bind Head, Y
4M8	8		TSB+30X06-B	Tap Screw S, Bind Head, B
4M10	14		TSB+30X08-Y	Tap Screw S, Bind Head, Y
4M11	4		TSB+30X10-Y	Tap Screw S, Bind Head, Y
4M12	16		TSB+30X12-Y	Tap Screw S, Bind Head, Y
4M13	17		TSC+30X06-Y	Tap Screw S, Washer Faced, Y
4M17	2		TSS+30X06-Y	Tap Screw S, Flat Head, Y
4M18	2		SSS+30X12-Y	Screw, Flat Head, Y
4M19	3		TPM+30X08-B	Tap Screw P, Round Head, B
4M20	4		ZB+STR30X12-2Y	Tap Screw, Bind Head, Y
4M21	11		TSB+40X08-B	Tap Screw S, Bind Head, B
4M22	7		TSB+40X10-Y	Tap Screw S, Bind Head, Y
4M23	4		TSB+40X14-B	Tap Screw S, Bind Head, B
4M24	2		TSB+40X12-Y	Tap Screw S, Bind Head, Y
4M25	1		TST+40X18-Y	Tap Screw S, Truss, Y
4M26	15		2AWX0830-05-Y	Plain Washer, Y
4M27	6		2AWX1040-08-B	Plain Washer, B
4M28	2		2BNX30-2Y	Nut, Hexagonal Head
4M29	3		59BS1692	GND Lug
4M30	4		3TWX30	Toothed Washer (A.B)

## 6. Appearance Parts

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
11E13	1		ACC-022DIG7EIA	Line Cord
11E15	1		SR-5N-4	Cord Stopper
11E17	1		FH-032C	Fuse Holder
11E25	1		UB-0029-1	Terminal (GND.)
1M1	1		N21138-GY3	Front Panel
1M2	1		N30561-1	Meter Plate
1M3	1		N42650A	Tinted Window
1M4	1		N42573-BR2	Side Cap R
1M5	1		N42574-BR2	Side Cap L
1M6	2		N43858	Trim (Window)
1M8	1		N43095-GY3	Push Button (Power)
1M9	1		N42572A	Knob Guide
1M10	1		N20824-1	Cabinet
1M12	1		N20828C-1	Rear Panel
1M13	1		N30551A-1	Bottom Board
1M14	4		T-C	Foot
1M16	2		N44093-GY3	Handle
1M17	4		N44092-GY3	Handle Spacer
1M18	2		N43847-GY3	Bracket
1M19	4		N43881	Spacer

## 7. Packing Parts

Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
3M1	1		N41318	Polyethylene Bag (Unit)
3M2	1		N40487	Polyethylene Bag (Accessories)
3M3	1		N20859	Packing Pad R
3M4	1		N20860A	Packing Pad L
3M5	1		N42674-1A	Shipping Carton
3M6	2		SL.1024	Label, Serial No.



Ref. No	Q'ty	Carver Part No.	Supplier Part No.	Description
3M7	2		N41366B	Label, Caution
3M8	1		N42235	Sheet, Serial Number
3M11	1		OM-498	Instruction Manual
3M13	1		N42785	Packing Pad (Top)
3M16	1		N43871	Handle Case
3M17	1		N43870	Protection Sheet
3M18	1		N43874	Polyethylene Bag (Accessories)
3M19	1		N43880	Instruction (Handle)

#### Capacitors description

##### • Electrolytic Capacitor

NS	-16	TW	221	M
----	-----	----	-----	---

Tolerance (%);  
Value ( $\mu$ F);  
Voltage (V);

M =  $\pm 20$

R22=0.22, 100=10, 1R0=1.0, 221=220, 3R3=3.3, 102=1000  
-16 = 16, 6R3 = 6.3

##### • Mylar Capacitor

MY	-50V	S	223	M
----	------	---	-----	---

Tolerance (%);  
Value (pF);  
Voltage (V);

J = 5, K = 10, M = 20

122 = 1200, 104 = 100000 = 0.1 ( $\mu$ F), 223 = 22000  
-50 = 50

##### • Ceramic Capacitor

HE	90	SJ	YF	223	Z
----	----	----	----	-----	---

Tolerance (%);  
Value (pF);  
Voltage (V);

D =  $\pm 0.5$  pF, J =  $\pm 5$  (%), K =  $\pm 10$  (%), Z =  $\pm 20$  (%)

050 = 5, 102 = 1000, 560 = 56, 223 = 22000, 821 = 820  
HC = 25, HE = 50, HK = 250, HM = 500, H = 100

#### Resistors description

##### • Fixed Resistors

KA	25S	T	473	J	-LP
----	-----	---	-----	---	-----

Tolerance (%);  
Value ( $\Omega$ );

D =  $\pm 0.5$ , F =  $\pm 1$ , G =  $\pm 2$ , J =  $\pm 5$

2R2 = 2.2, 682 = 6.8k, 125 = 1.2M, 470 = 47, 473 = 47k,  
221 = 220, 394 = 390k

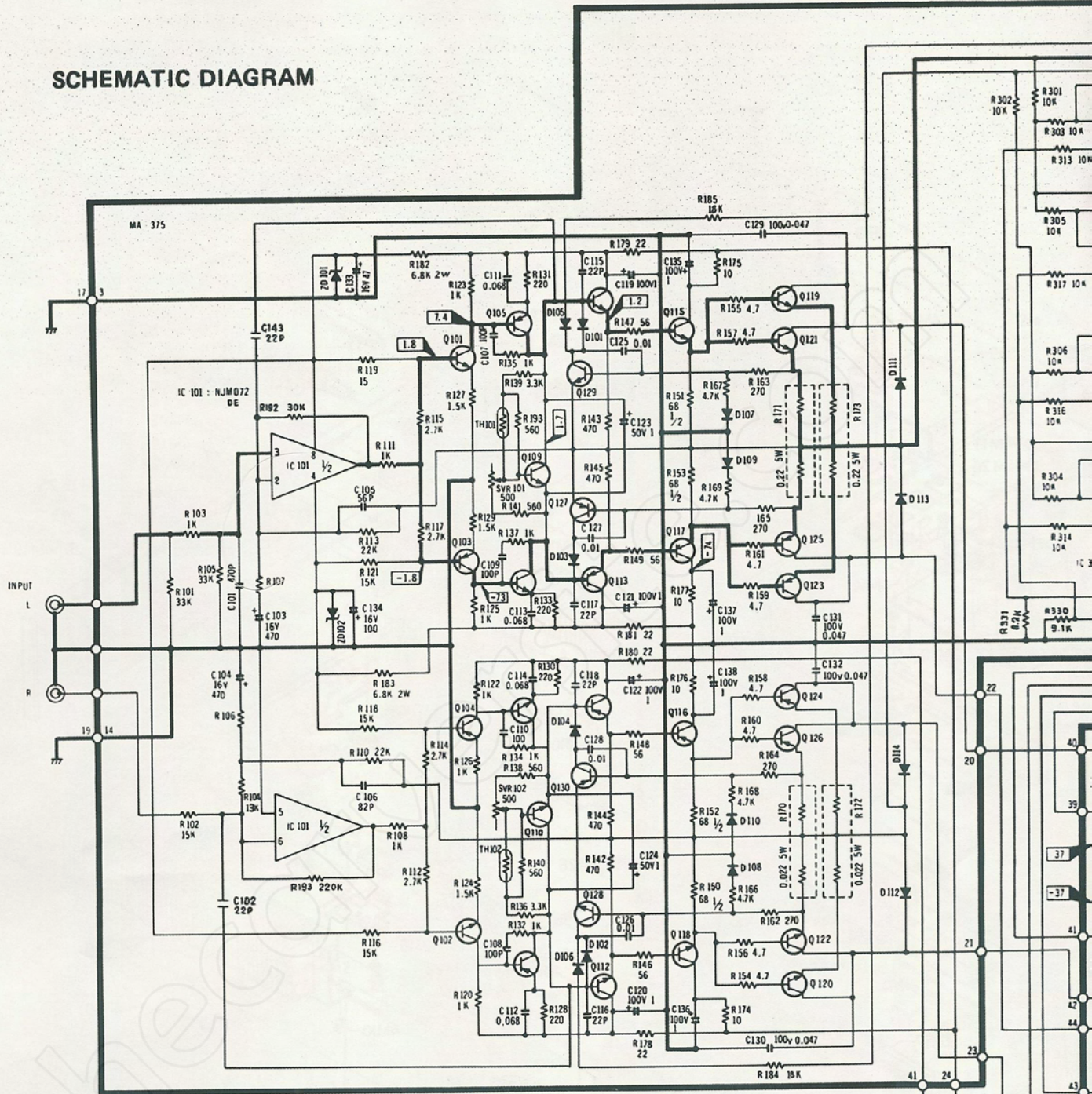
Wattage (W);  
Type;

25S = 1/4, 50S or 50X = 1/2, -2W = 2

KA = Carbon, FR = Flame Proof, SA = Metal Oxide,  
RF = Fusible, MF = Metal Film



# SCHEMATIC DIAGRAM



## TRANSISTOR

Q 101, 102, 301, 302, 505 : 2SC1980 (S,T)  
 Q 103, 104, 303, 304, 502, 506 : 2SA921 (S,T)  
 Q 105, 106, 113 : 2SA1110 (Q,R)  
 Q 107, 108, 111, 112 : 2SC2590 (Q,R)  
 Q 109, 110 : 2SC1567 (Q,R)  
 Q 115, 118, 403, 404 : 2SC2591 (Q,R)  
 Q 116, 117, 401, 402 : 2SA1111 (Q,R)  
 Q 119, 120, 121, 122 : 2SD 45 (O,R)  
 Q 123~124 : 2SB7 5 (O,R)  
 Q 127, 130 : 2SA777 (Q,R)  
 Q 128, 129, 207, 208 : 2SC1509 (Q,R)  
 Q 201~203 601 : 2SA722 (S,T)  
 Q 202~206 : 2SC1328 (S,T)  
 Q 405, 406 : 2SD 1047 (E)  
 Q 501, 503, 504, 505, 508 : 2SC1815 (GR, BL)  
 Q 602, 603 : 2SC536 (F, G)  
 Q 606, 507 : 2SA1015 (GR, BL)

## ZENER DIODE

ZD 101, 102 : XZ147  
 ZD 501 : XZ 200  
 ZB 502 : XZ 100  
 ZD 601, 602 : XZ117

## DIODE

D 101~110, 507 : IN4148  
 D 111~114, 202~204, 409 412, 508, 509, 516, 517 : IN4002  
 D 201, 301, 302, 511, 601 : DS 442  
 D 401~404 : 30 DF 2 FC  
 D 502~505 : GP30DL or 1N5402  
 D 501 : KBPC 25-02  
 D 506 : DBA 10C  
 D 518 : 1B4842

## IC 101

IC PIN	1	2	3	4	5	6	7	8
VOLTAGE	0	0	0	-14.7	0	0	0	+14.7

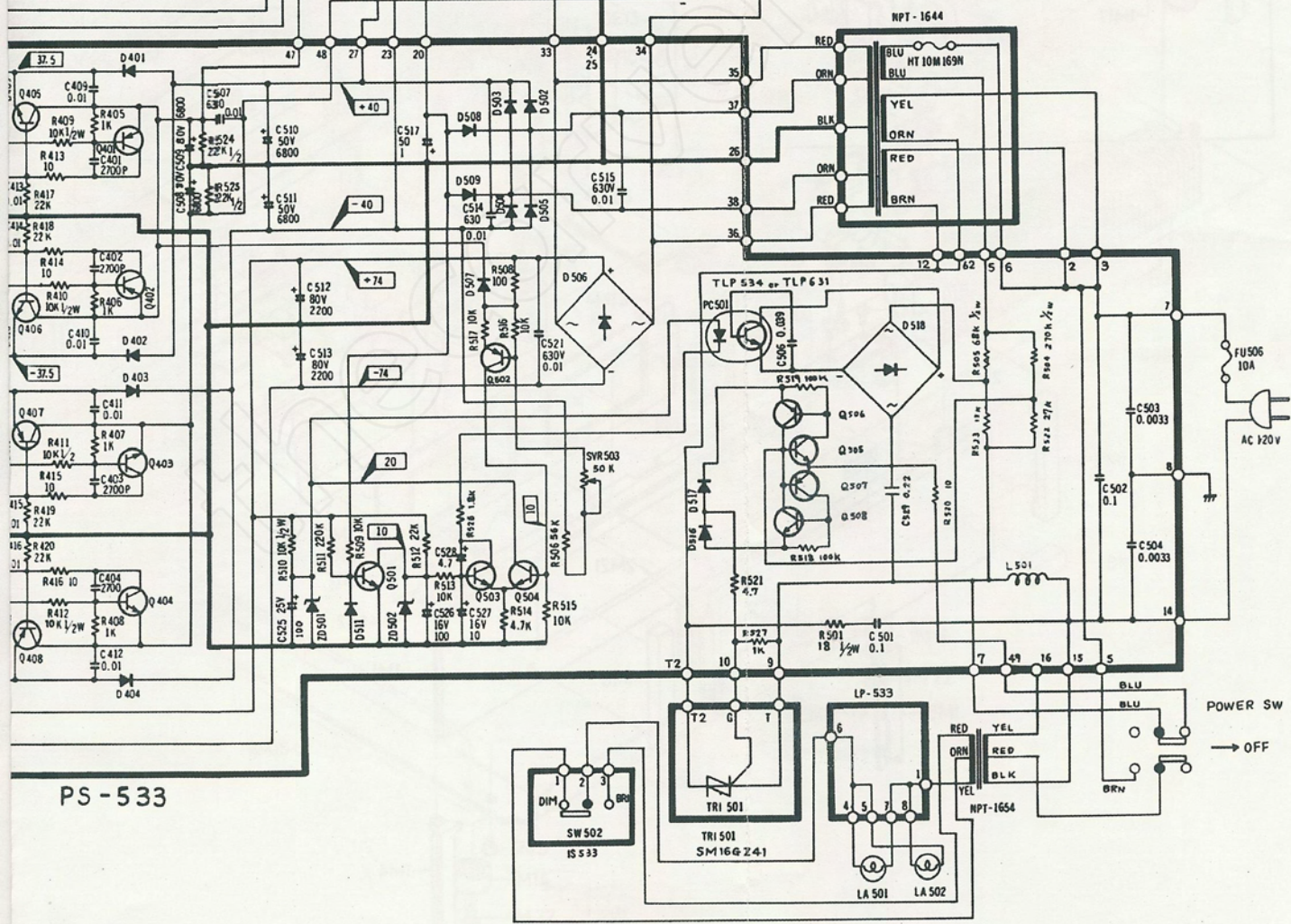
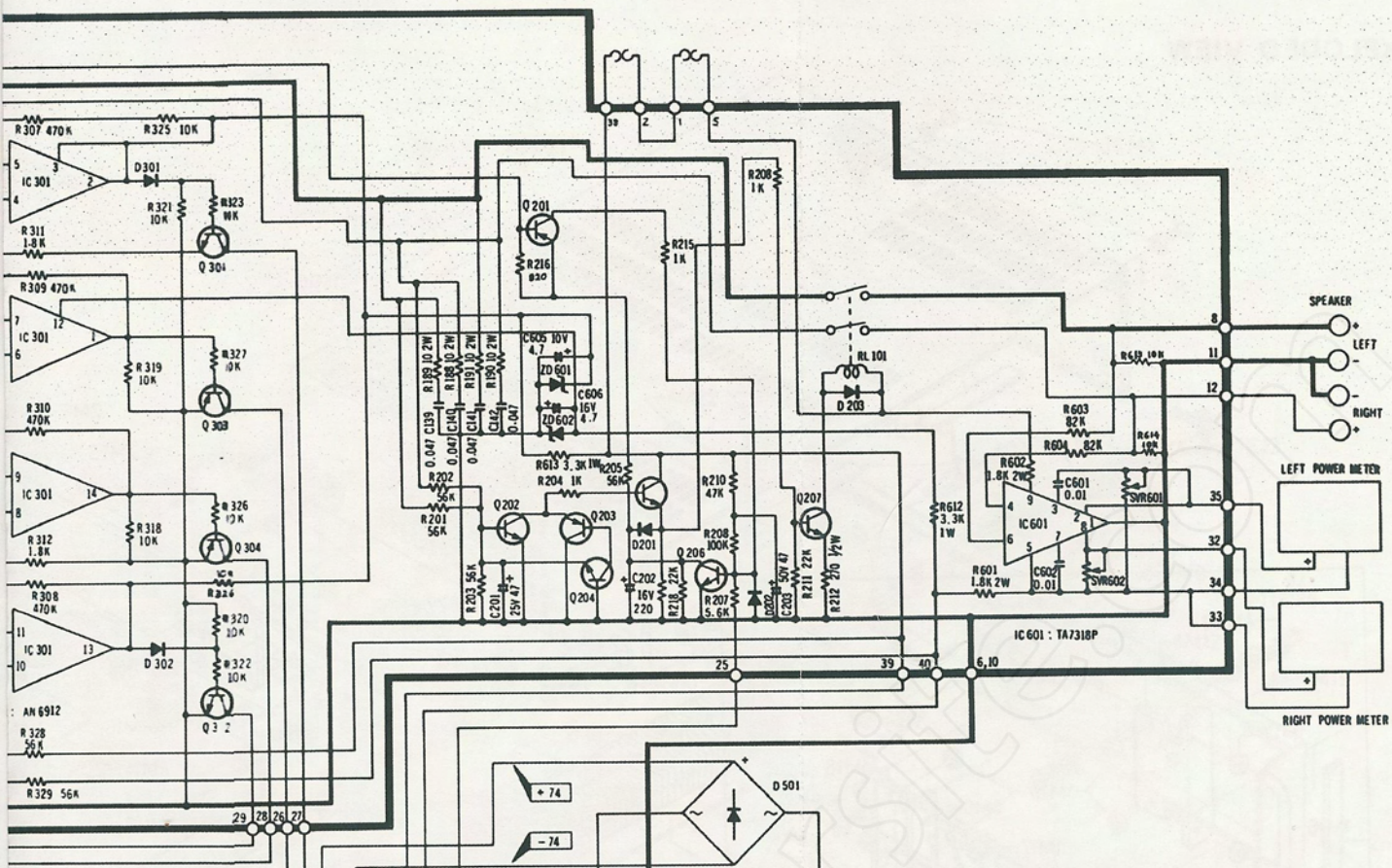
## IC 301

IC PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
VOLTAGE	0	-11.8	-12	-0.3	4.8	0	-5	0	-5	-0.3	5	12	-11.8	0.5

## IC 601

IC PIN	1	2	3	4	5	6	7	8	9
VOLTAGE	0	-8.7	-0.78	0	-8.7	0	-0.79	-8.7	0

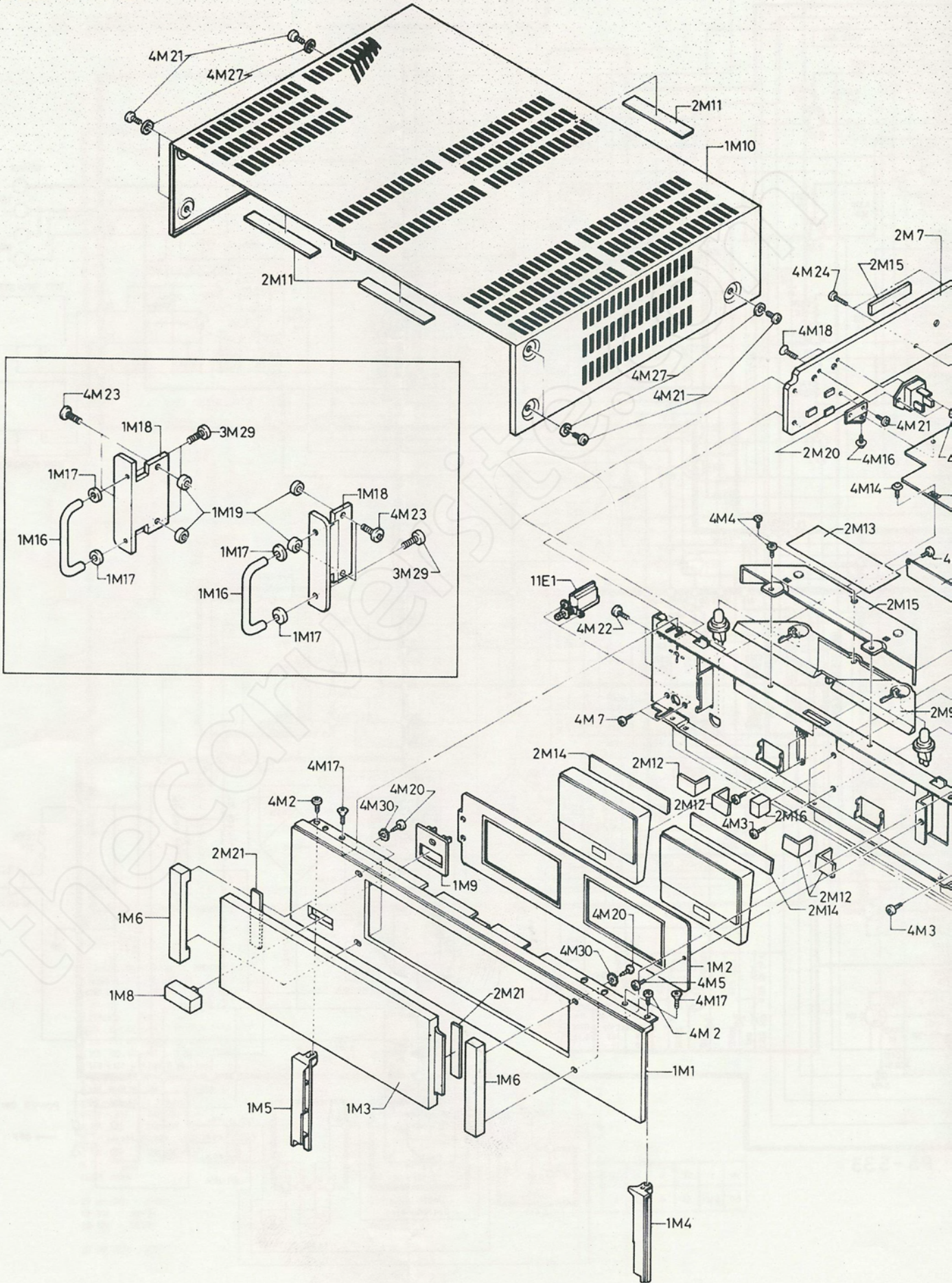




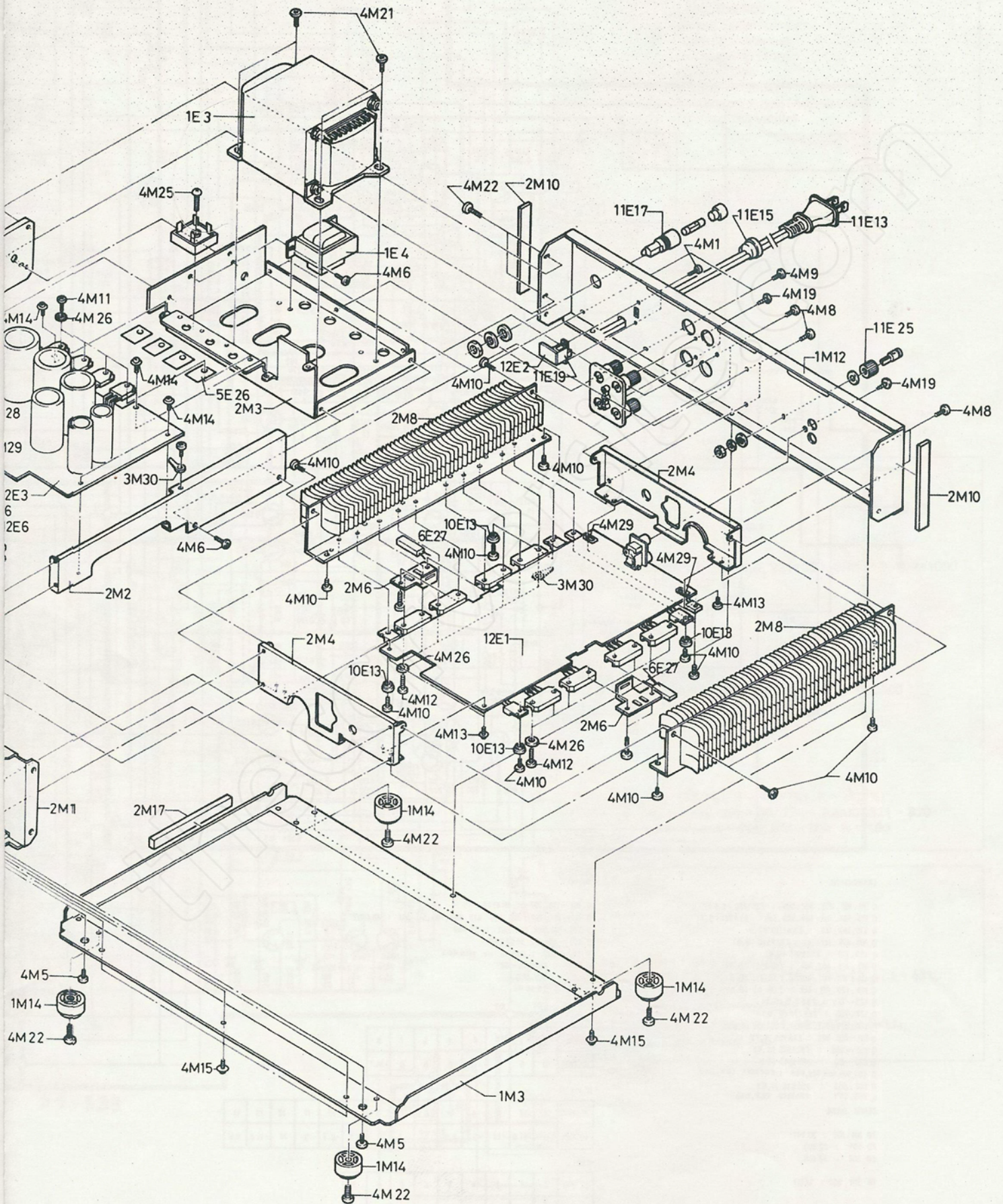
PS - 533



# EXPLODED VIEW









## VOLTAGE CONVERSION

### Direction for Change

1. Locate power supply circuit board on the left of the front panel side. (See Fig. 1 and 2)
  - A. Move the red wire of PT (L) from 2 to 61.
  - B. Move the orange wire of PT (L) from 62 to 60.
  - C. Move the yellow wire of PT (S) from 16 to the power switch.
  - D. Move the red wire of PT (S) from the power switch to 16.
  - E. Change R504 from 270K 1/2W to 820K 1/2W.
  - F. Change R505 from 68K 1/2W to 150K 1/2W.

Note. PT(L): Power Transformer, large  
PT(S): Power Transformer, small

### Power Supply P.C. Board PS-533

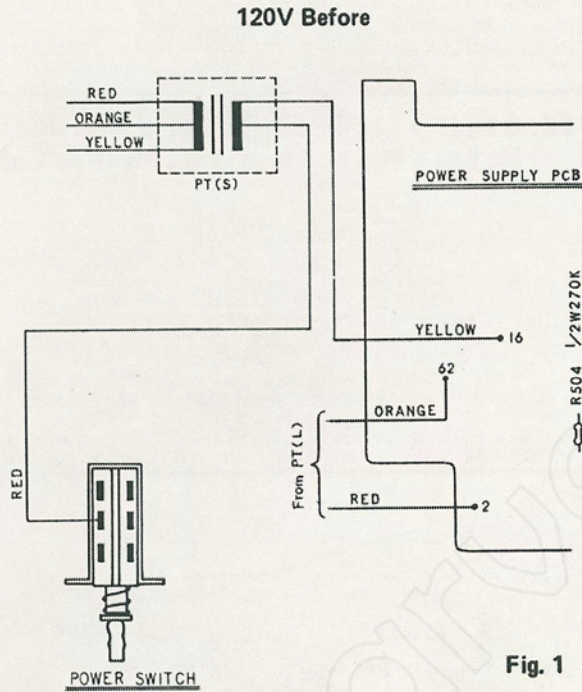


Fig. 1

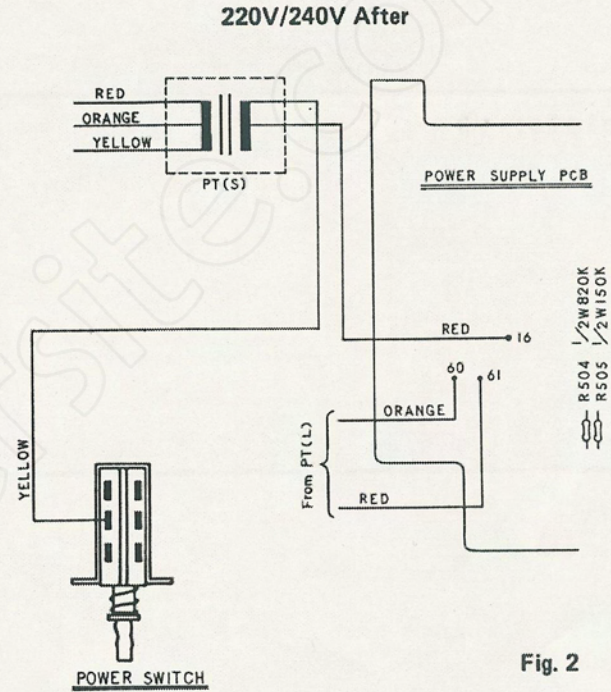


Fig. 2

2. Change fuse on the right of the rear panel from AGC10 to AGC5.



**CARVER CORPORATION  
SERVICE BULLETIN**

Service Bulletin # M-500t-1

Model M-500t

Serial # all units

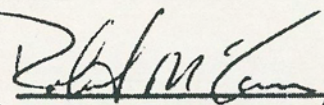
Reason: Proper mounting of filter caps.

Procedure: When replacing C508 and C509 on the power supply PCB please do not mount the caps directly onto the PCB. This cap (6800uf/80V) has its vent hole on the bottom so it should be mounted slightly above the PCB to allow the gas to escape. A good spacer to use is a #4 flat nylon washer placed over each leg of the capacitor.

Delete:

Add: Qty(4) 154-40001-01 #4 washer  
Note: this is a nylon flatwasher

SERVICE APPROVAL  
ENGINEERING APPROVAL



4/17/89 DATE