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CARVER

Powerful • Musical • Accurate

MAR 05 REC'D

M-1.0t MAGNETIC FIELD POWER AMPLIFIER SERVICE MANUAL

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SECTION 3

SPECIFICATIONS

Specifications for the M-1.0t

Inv. = Inverting Version

N.I. = Non-Inverting Version

Power Output:

Continuous Average Power Output : 200 watts per channel into 8Ω from 20 Hz to 20 kHz, with no more than 0.15% THD

400 watts per channel into 4Ω from 20 Hz to 20 kHz, with no more than 0.15% THD

Bridged-mono operation: 1000 watts into 8Ω from 20Hz to 20 kHz, with no more than 0.15% THD

Power at Clipping: 400 watts per channel into 8Ω at 1 kHz (Inv. version)
350 watts per channel into 8Ω at 1 kHz (N.I. version)

Dynamic Headroom: 3.8dB @ 8 ohms (Inv. version) 4.1dB @ 8 ohms (N.I.)
2.9dB @ 4 ohms (Inv. version) 3.1dB @ 4 ohms (N.I.)

Frequency Response: 20Hz to 20kHz (+ 0dB, - 0.5dB)

T.H.D.: Less than 0.15% 20Hz to 6kHz

IM Distortion: Less than 0.1%

Noise: -100 dB A-weighted, referenced to rated power
-82 dBW A-weighted, referenced to 1 watt.

Input Impedance: 51kΩ (Inv. version)
100kΩ (N.I. version)

Sensitivity: 1.75V rms for rated power into 8 ohms at 1 kHz (Inv.)
1.3V rms for rated power into 8 ohms at 1 kHz (N.I.)
125mV rms for 1W output into 8 ohms at 1 kHz (Inv.)
95mV rms for 1W output into 8 ohms at 1 kHz (N.I.)

Damping Factor: Greater than 9 - Tube Characteristics

Gain: 27dB (Inv. version)
30dB (N.I. version)

Display: Peak responding, 1mS attack, 1 second delay
7 LED indicators per channel

Power Consumption: 1200W at full power

Power Requirements: 120VAC/60Hz (USA and Canada)
230VAC/50Hz (Europe)

Dimensions: 3.75" H x 19"W x 13.5"D
95mm x 483mm x 343mm

Weight: 19 lbs
8.6 kg

Test Note: Accurate measurement depends on a sufficiently "stiff" AC supply. The 60 Hz AC line distortion must be below IHF specifications.

SECTION 4

CALIBRATION PROCEDURE

M-1.0t

High Rail Voltage Adjust

With no signal and no load:

1. Adjust SVR301 for +100VDC at TP5 and -100VDC at TP6.
2. Verify the following DC voltages:

D126 Anode	+61VDC ($\pm 1V$)
D128 Anode	+30VDC ($\pm 1V$)
D130 Cathode	-30VDC ($\pm 1V$)
D132 Cathode	-60VDC ($\pm 1V$)

Inverting Version

IC301 Pin 11	-12VDC ($\pm 0.5V$)
IC301 Pin 4	+12VDC ($\pm 0.5V$)

Non-Inverting Version

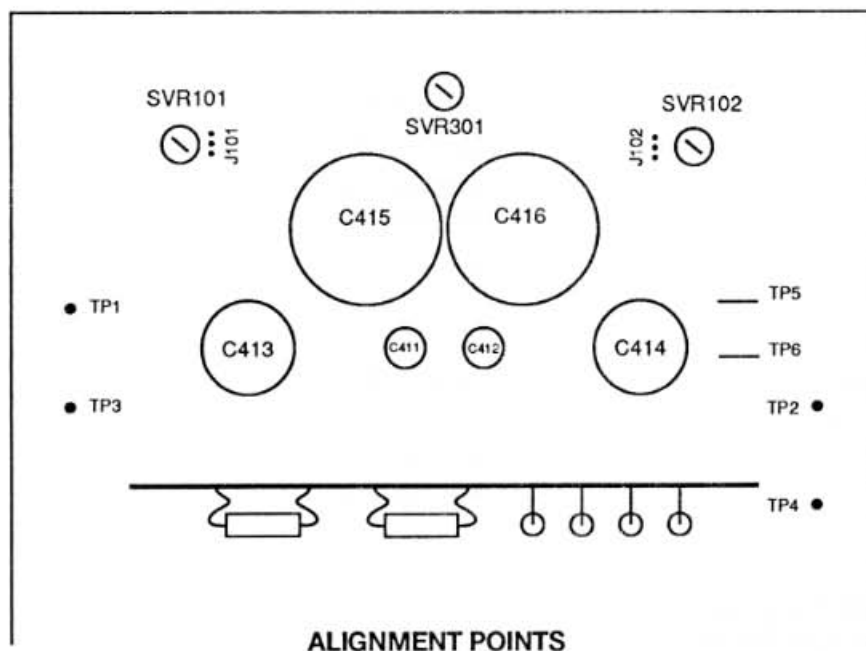
IC301 Pin 4	-12VDC ($\pm 0.5V$)
IC301 Pin 8	+12VDC ($\pm 0.5V$)

Idle Bias Adjust

With no signal and no load:

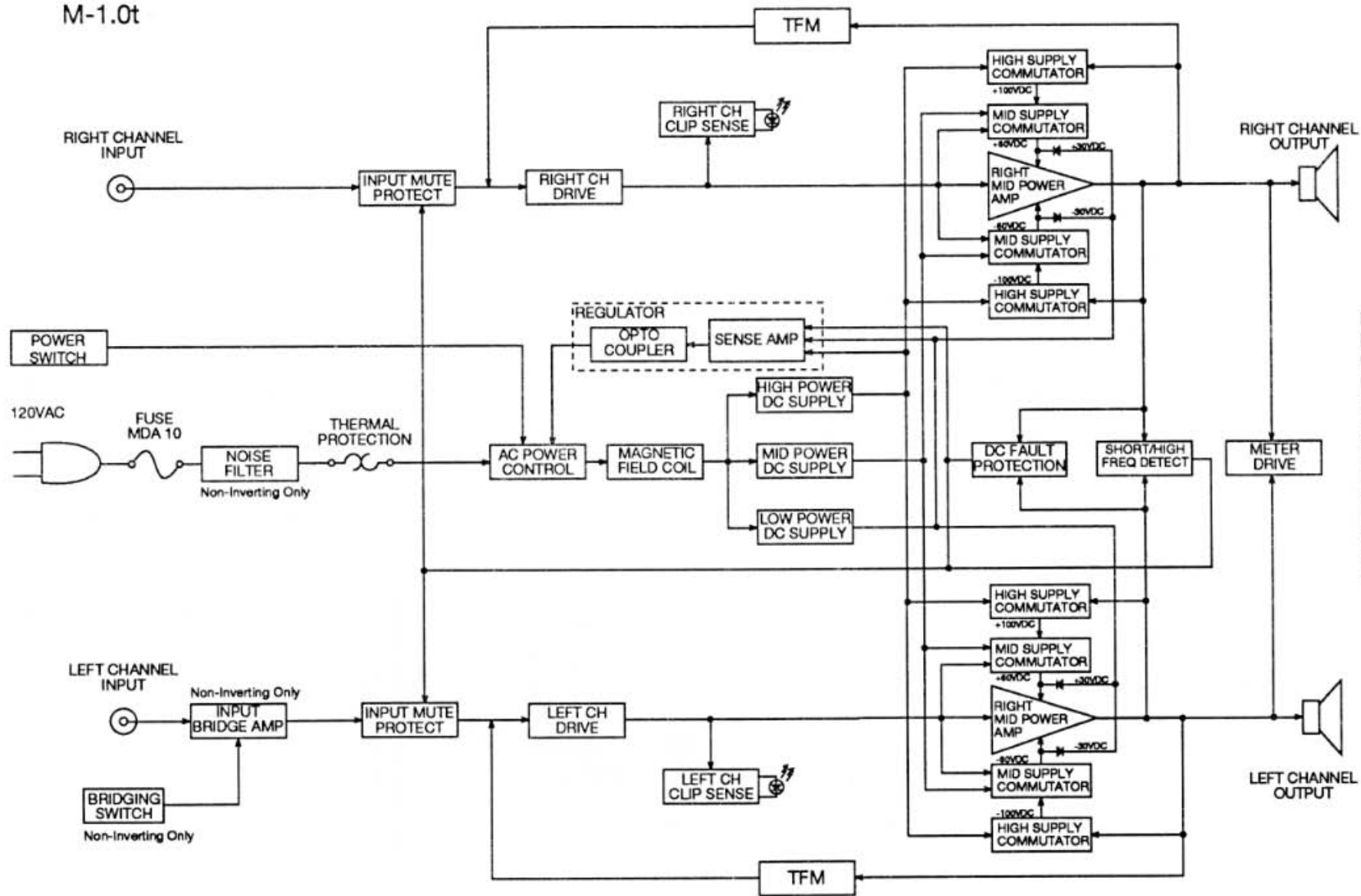
1. Adjust SVR101 for 0.5mV between TP1 and TP3.
2. Adjust SVR102 for 0.5mV between TP2 and TP4.

Note: This adjustment should be done after the amplifier has been on approximately two minutes, while it is still cool. After the amplifier warms up, the bias reading will be higher.



BLOCK DIAGRAM

M-1.0t



SECTION 5 BLOCK DIAGRAMS

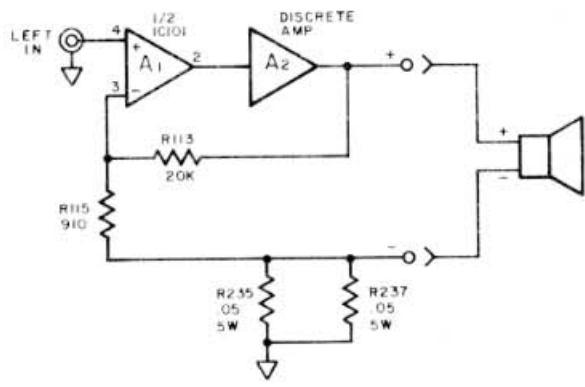


Figure 1: Damping Feedback (M-1.0t Inv.)

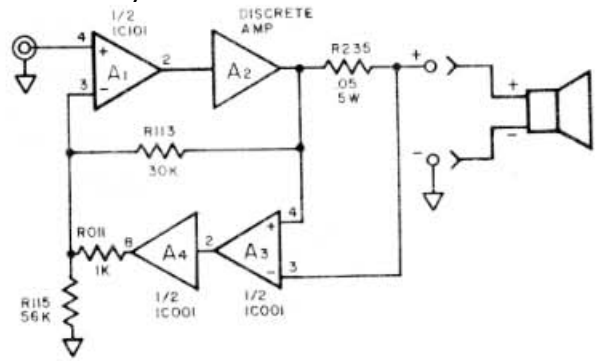


Figure 2: Damping Feedback (M-1.0t N.I.)

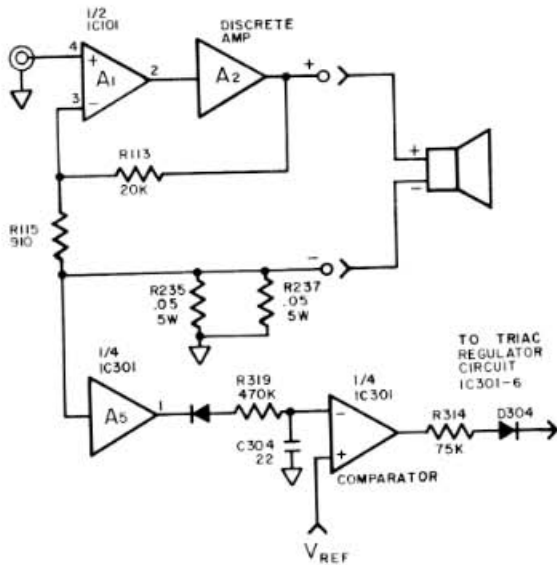


Figure 3: Damping and Current Limiter (M-1.0t Inv.)

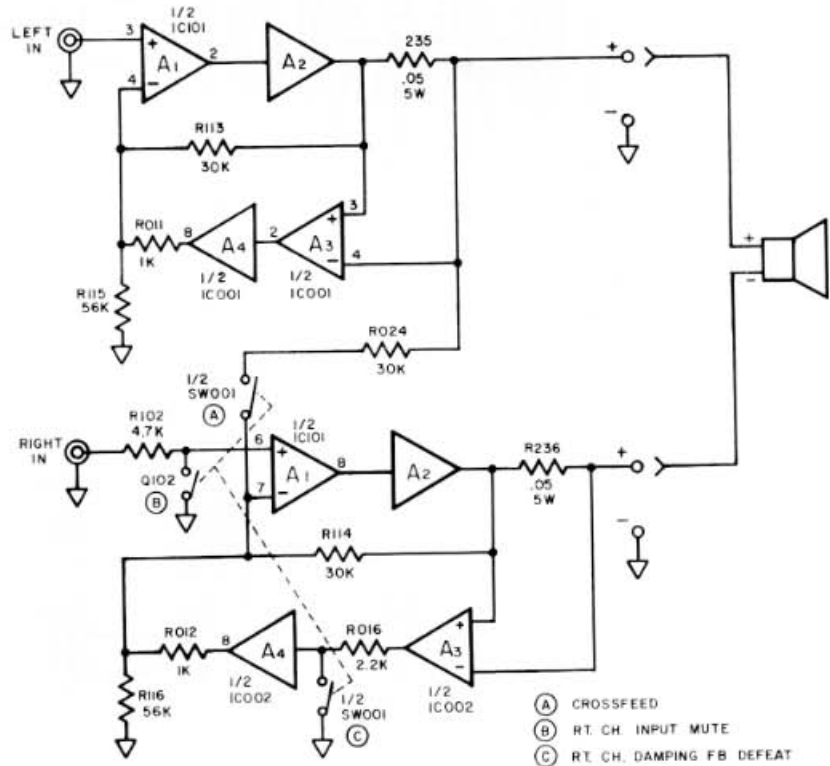


Figure 4: Mono Bridging and Damping Feedback (M-1.0t N.I.)

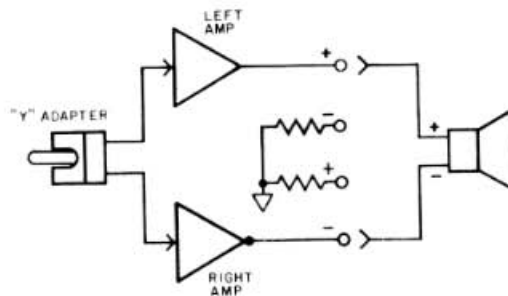
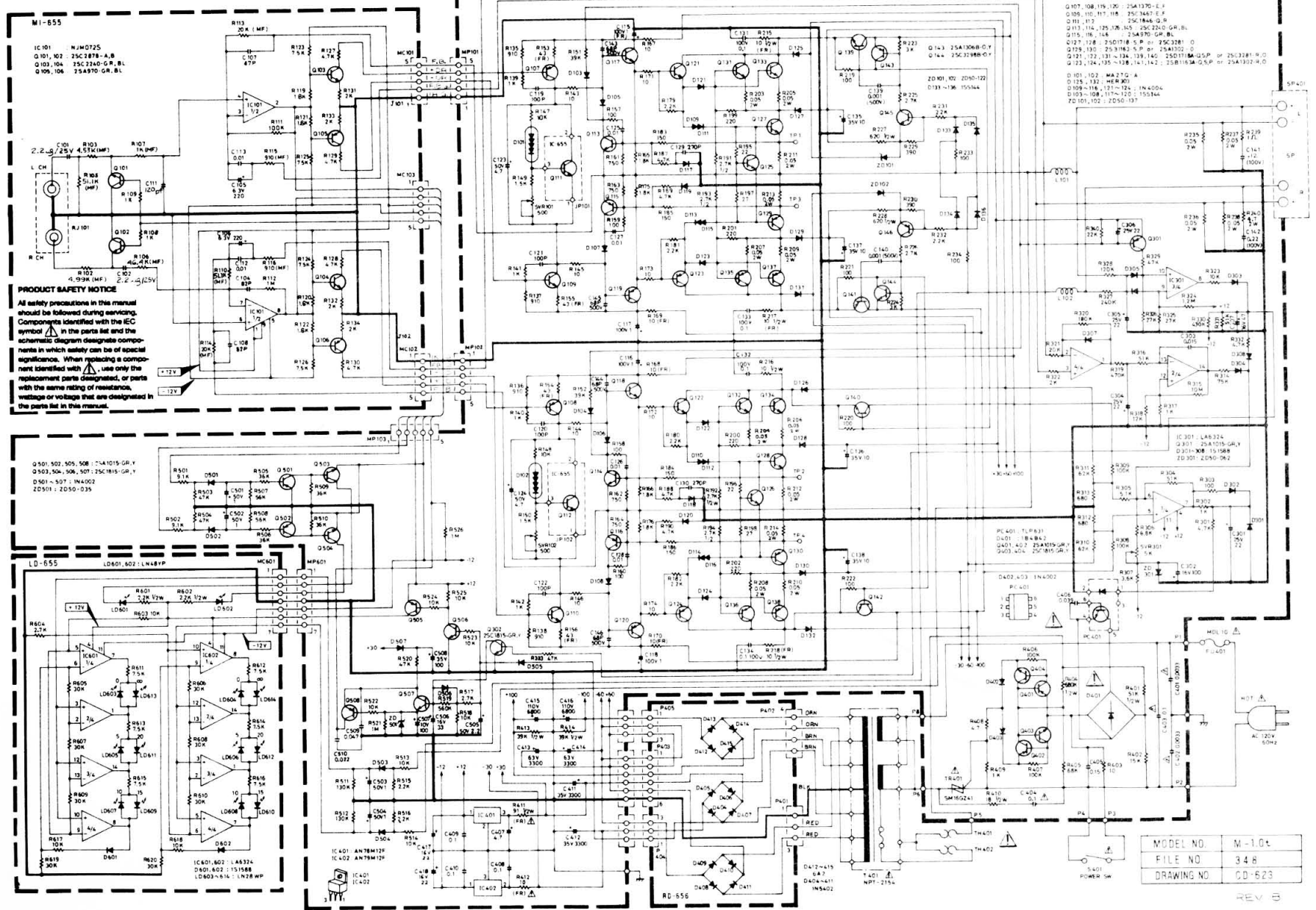


Figure 5: Mono Bridged Connection (M-1.0t N.I.)

Schematic M-1.0t INVERTING

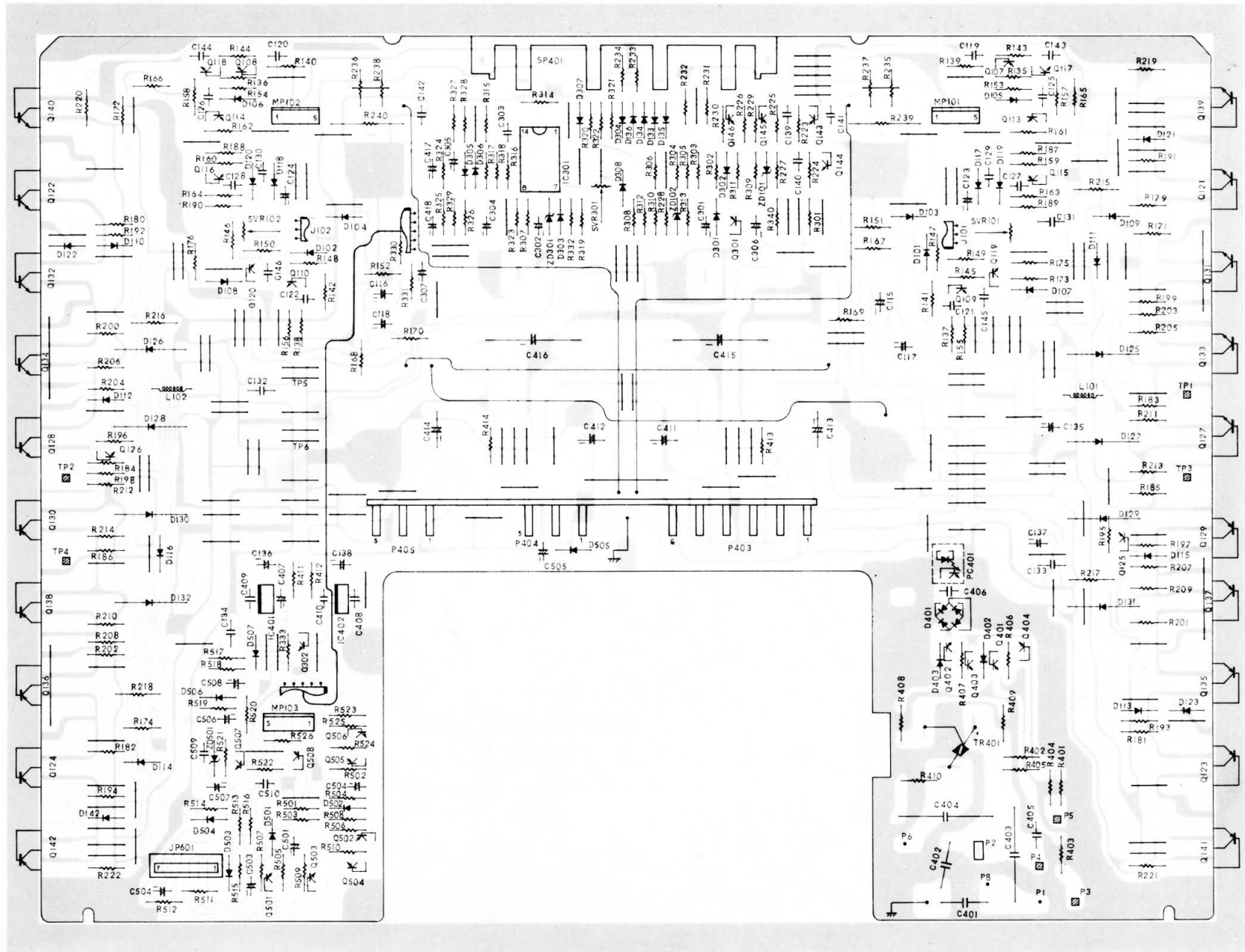


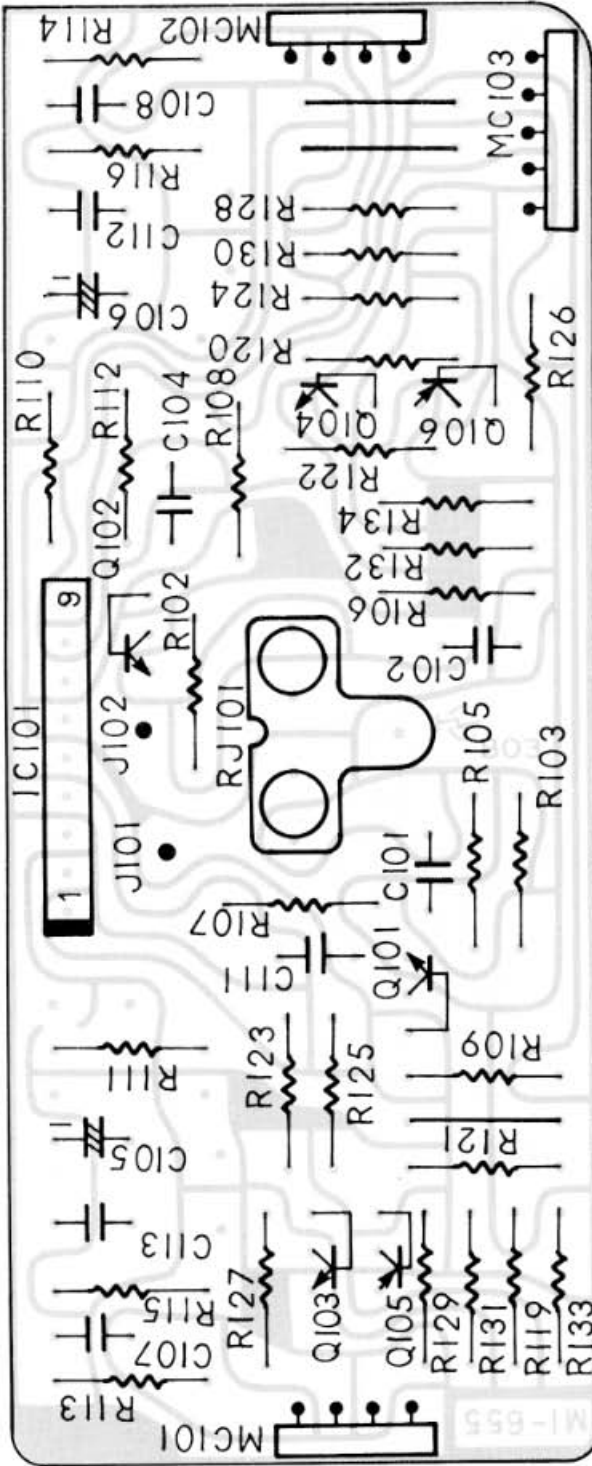
MODEL NO.	M-1.0t
FILE NO.	348
DRAWING NO.	CD-523

REV B

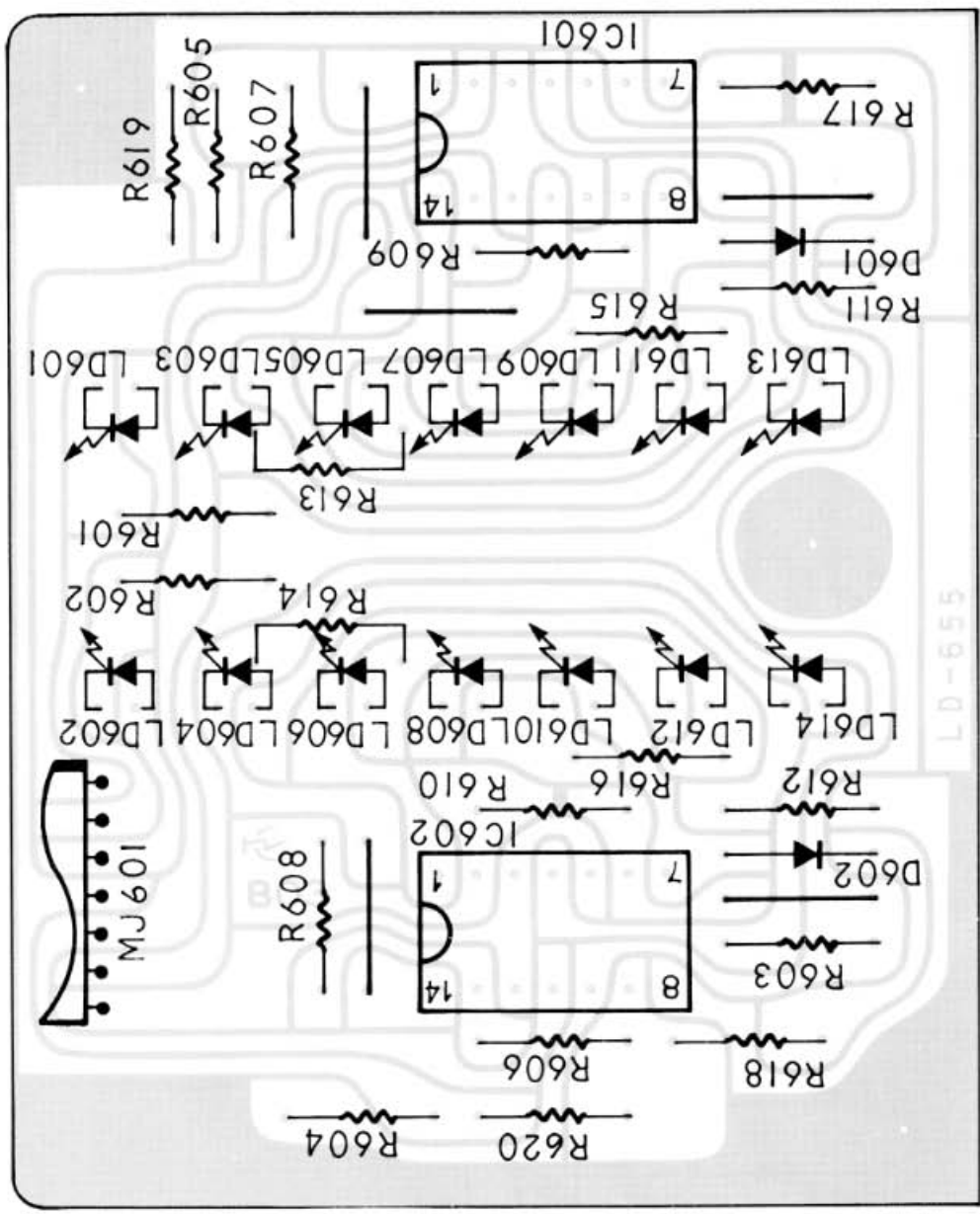
10

MA-655 Main Amplifier P.C. Board INVERTING





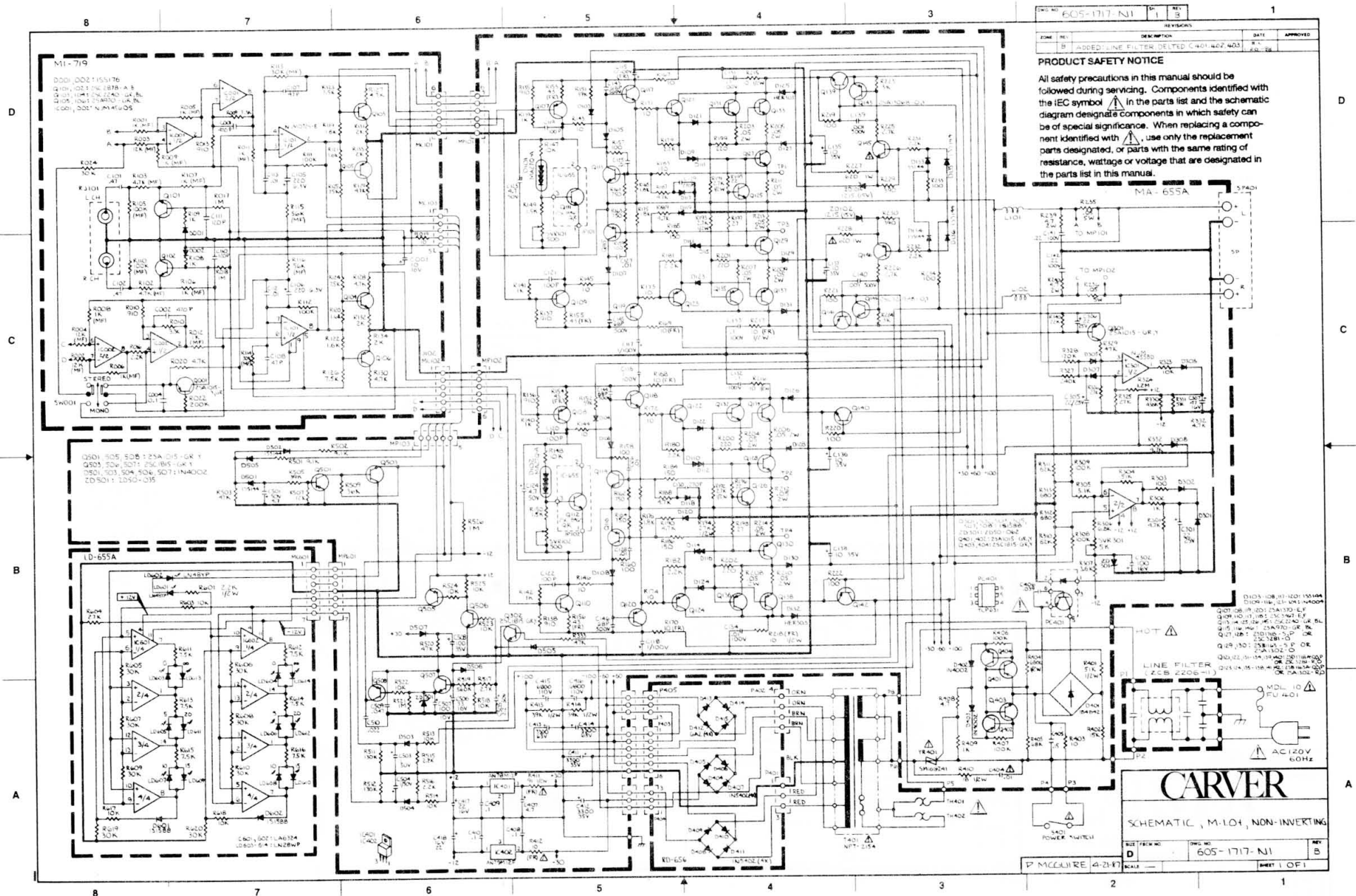
DATE	REV	BY	DESIGNED BY	CHECKED BY	DATE
APPROVALS			DATE		
DESIGNER			DATE		
CHECKED			DATE		
REWORK			DATE		
DO NOT SCALE DIMENSIONS					
SCALE			M-1.0t		
A					
<h1 style="margin: 0;">CARVER</h1> <p style="margin: 0;">PCB ASSY INPUT BOARD, INVERTING</p>					
<small>ALL DIMENSIONS ARE IN INCHES DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED PROTOSONICS DESIGN/ASSEMBLY 2001</small>					
<small>REVISIONS REVISION NO. DATE BY</small>					





DATE	REV	PCB NO.	ASSEMBLY INSTRUCTIONS	DATE	REV	PCB NO.	DATE	REV	PCB NO.	
USE THE FOLLOWING SYMBOLS FOR THE COMPONENTS AND FUNCTIONS DESCRIBED ABOVE. (SEE THE "SYMBOLS" SECTION OF THE "PARTS LIST")			CONTRACT NO.		DRAWN		APPROVED		DATE	
MATERIAL			PART NO.		REV. NO.		DATE		REV. NO.	
PART NO.			REV. NO.		DATE		REV. NO.		DATE	
DO NOT SCALE DRAWING			SCALE		M-1.0t		SHEET		TOTAL	

CARVER

PCB ASSY
DISPLAY BOARD, INVERTING



ZONE	REV.	DESCRIPTION	DATE	APPROVED
B		ADDED LINE FILTER DELTED C401, C402, C403		

PRODUCT SAFETY NOTICE
All safety precautions in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same rating of resistance, wattage or voltage that are designated in the parts list in this manual.

MA-655A

AC 120V 60Hz

CARVER

SCHMATIC, M-104, NON-INVERTING

REV. 10/83

REV. 10/83

REV. 10/83

REV. 10/83



REV. 10/83

SECTION 6





PARTS LIST

M-1.0t Assembly P/N 607-00351-01

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
205-00003-00	CAP LYTIC 2.2 μ F/50V 20% RAD	C501 (LATER REV.)	
BC63332MA50CC3	CAP LYTIC 3300 μ F/63V	C413,414	
LSS2Q682MLMAZO	CAP LYTIC 6800 μ F/110V	C415,416	
MS-25TW220M-RT	CAP LYTIC 22 μ F/25V	C301,305,306	
MS100TW1R0M-RT	CAP LYTIC 1 μ F/100V	C115-118	
NS-10TW101M-RT	CAP LYTIC 100 μ F/10V	C507	
NS-16TW100M-RT	CAP LYTIC 10 μ F/16V	C003	
NS-16TW101M-RT	CAP LYTIC 100 μ F/16V	C302	
NS-16TW220M-RT	CAP LYTIC 22 μ F/16V	C417,418	
NS-16TW330M-RT	CAP LYTIC 33 μ F/16V	C506	
NS-16TW470M-RT	CAP LYTIC 47 μ F/16V	C307	
NS-35TW100M-RT	CAP LYTIC 10 μ F/35V	C135-138	
NS-35TW101M-RT	CAP LYTIC 100 μ F/35V	C508	
NS-35TW332M-KF	CAP LYTIC 3300 μ F/35V	C411,412	
NS-50TW1R0M-RT	CAP LYTIC 1 μ F/50V	C503,504	
NS-50TW2R2M-RT	CAP LYTIC 2.2 μ F/50V	C505	
NS-50TW4R7M-RT	CAP LYTIC 4.7 μ F/50V	C123,124,407, (C501 EARLY REV.)	
NS6R3TW221M-RT	CAP LYTIC 220 μ F/6.3V	C105,106	
ECQV1H104JZ-RT	CAP METAL FILM .1 μ F	C004,408-410	
ECQV1H393JZ-RT	CAP METAL FILM .039 μ F	C406	
ECQV1H474JZ-RT	CAP METAL FILM .47 μ F	C101,102	
ECQU1A332MH	CAP METAL FILM .0033 μ F	C401,402	
MMS104M	CAP METAL FILM .1 μ F	C403,404	
MMW100TW154KRT	CAP METAL FILM .15 μ F/100V	C405	
MMW100TW224KRT	CAP METAL FILM 22 μ F/100V	C141,142	
MY-50VU103J-RT	CAP MYLAR .01 μ F/50V	C112,113	
MY-50VU473J-RT	CAP MYLAR .047 μ F/50V	C509	
MY-100VS104K	CAP MYLAR .1 μ F/100V	C131-134	
HE40SJSL470KRT	CAP CER DISC 47pF	C107,108	
HE50SJSL101KRT	CAP CER DISC 100pF	C119-122	
HE50SJSL121KRT	CAP CER DISC 120pF	C110,111	
HE70SJSL271KRT	CAP CER DISC 270pF	C129,130	
HE70SJYF103ZRT	CAP CER DISC .01 μ F	C125-128	
HE90SJSL471KRT	CAP CER DISC 470pF	C001,002	
HE90SJYF223ZRT	CAP CER DISC .022 μ F	C510	
HM60SJSL680KRT	CAP CER DISC 68pF/500V	C143-146	
HM60SJYB102KRT	CAP CER DISC .001 μ F/500V	C139,140	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
251-00111-00	RES CFILM 51 K 1/4W PREP .4		To Foil Side of Amp Bd. MA655A See Service Bulletin M-1.0t-6A
251-00149-00	RES CFILM 2.0 M 1/4W		To Foil Side of Input Bd. MI-719 See Service Bulletin M-1.0t-6A
KA16ST100J-AT	RES CFILM 10 OHM 1/8W	R19	
KA16ST102J-AT	RES CFILM 1 K 1/8W	R108,109	
KA16ST104J-AT	RES CFILM 100 K 1/8W	R111,112	
KA16ST105J-AT	RES CFILM 1 M 1/8W	R017,018	
KA16ST162J-AT	RES CFILM 1.6 K 1/8W	R119-122	
KA16ST202J-AT	RES CFILM 2 K 1/8W	R131-134	
KA16ST204J-AT	RES CFILM 200 K 1/8W	R022	
KA16ST222J-AT	RES CFILM 2.2 K 1/8W	R016	
KA16ST472J-AT	RES CFILM 4.7 K 1/8W	R020,127-130	
KA16ST752J-AT	RES CFILM 7.5 K 1/8W	R123-126	
KA25ST100J-AT	RES CFILM 10 OHM 1/4W	R143-146,171-174,403	
KA25ST101J-AT	RES CFILM 100 OHM 1/4W	R157-160,219-222,233,234,303	
KA25ST102J-AT	RES CFILM 1 K 1/4W	R139-142,302,409	
KA25ST103J-AT	RES CFILM 10 K 1/4W	R147,148,323,513,514,518,522-525,603,617,618	
KA25ST104J-AT	RES CFILM 100 K 1/4W	R308,309,406,407	
KA25ST105J-AT	RES CFILM 1 M 1/4W	R521,526	
KA25ST123J-AT	RES CFILM 12 K 1/4W	R507	
KA25ST124J-AT	RES CFILM 120 K 1/4W	R328	
KA25ST125J-AT	RES CFILM 1.2 M 1/4W	R324	
KA25ST134J-AT	RES CFILM 130 K 1/4W	R511,512	
KA25ST151J-AT	RES CFILM 150 OHM 1/4W	R183-186	
KA25ST152J-AT	RES CFILM 1.5 K 1/4W	R149,150	
KA25ST153J-AT	RES CFILM 15 K 1/4W	R402	
KA25ST182J-AT	RES CFILM 1.8 K 1/4W	R165,166,175,176	
KA25ST220J-AT	RES CFILM 22 OHM 1/4W	R195,196	
KA25ST221J-AT	RES CFILM 220 OHM 1/4W	R199-202	
KA25ST222J-AT	RES CFILM 2.2 K 1/4W	R179-182,231,232,515,516	
KA25ST223J-AT	RES CFILM 22 K 1/4W	R340	
KA25ST244J-AT	RES CFILM 240 K 1/4W	R327	
KA25ST270J-AT	RES CFILM 27 OHM 1/4W	R197,198	
KA25ST272J-AT	RES CFILM 2.7 K 1/4W	R225,226,517,604	
KA25ST273J-AT	RES CFILM 27 K 1/4W	R325,326	
KA25ST302J-AT	RES CFILM 3 K 1/4W	R223,224	
KA25ST303J-AT	RES CFILM 30 K 1/4W	R605-610,619,620	
KA25ST362J-AT	RES CFILM 3.6 K 1/4W	R307	
KA25ST363J-AT	RES CFILM 36 K 1/4W	R509	
KA25ST391J-AT	RES CFILM 390 OHM 1/4W	R229,230	
KA25ST393J-AT	RES CFILM 39 K 1/4W	R151,152,505	
KA25ST4R7J-AT	RES CFILM 4.7 OHM 1/4W	R408	
KA25ST434J-AT	RES CFILM 430 K 1/4W	R330	
KA25ST472J-AT	RES CFILM 4.7 K 1/4W	R187-190,301,332	
KA25ST473J-AT	RES CFILM 47 K 1/4W	R329,333,503,520	
KA25ST512J-AT	RES CFILM 5.1 K 1/4W	R305	

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
KA25ST513J-AT	RES CFILM	51 K 1/4W	R304,331	
KA25ST564J-AT	RES CFILM	560 K 1/4W	R519	
KA25ST623J-AT	RES CFILM	62 K 1/4W	R310,311	
KA25ST681J-AT	RES CFILM	680 OHM 1/4W	R312,313	
KA25ST682J-AT	RES CFILM	6.8 K 1/4W	R306	
KA25ST683J-AT	RES CFILM	68 K 1/4W	R405	
KA25ST751J-AT	RES CFILM	750 OHM 1/4W	R161-164	
KA25ST752J-AT	RES CFILM	7.5 K 1/4W	R611-616	
KA25ST911J-AT	RES CFILM	910 OHM 1/4W	R135-138	
KA25ST912J-AT	RES CFILM	9.1 K 1/4W	R501,502	
KA50XT180J-AT	RES CFILM	18 OHM 1/2W	R410	
KA50XT222J-AT	RES CFILM	2.2 K 1/2W	R601	
KA50XT272J-AT	RES CFILM	2.7 K 1/2W	R191-194	
KA50XT393J-AT	RES CFILM	39 K 1/2W	R413,414	
KA50XT513J-AT	RES CFILM	51 K 1/2W	R401	
KA50XT684J-AT	RES CFILM	680 K 1/2W	R404	
MF16ST102G-AT	RES MFILM	1 K 1/8W	R005-008,011,012,106,107	
MF16ST104G-AT	RES MFILM	100 K 1/8W	R105,110	
MF16ST123G-AT	RES MFILM	12 K 1/8W	R001-004	
MF16ST303G-AT	RES MFILM	30 K 1/8W	R024,113,114	
MF16ST332G-AT	RES MFILM	3.3 K 1/8W	R009,010	
MF16ST472G-AT	RES MFILM	4.7 K 1/8W	R102,103	
MF16ST563G-AT	RES MFILM	56 K 1/8W	R115,116	
MF16ST911G-AT	RES MFILM	910 OHM 1/8W	R013,014	
SA-1WT621J-LP	RES MET OXIDE	620 OHM 1W	R227,228	
SA-2WT4R7J-LP	RES MET OXIDE	4.7 OHM 2W	R239,240	
FR25ST100J-LP	RES FLAME PROOF	10 OHM 1/4W	R167-170,412	
FR25ST430J-LP	RES FLAME PROOF	43 OHM 1/4W	R153-156	
FR50ST100J-LP	RES FLAME PROOF	10 OHM 1/2W	R215-218	
FR50ST910J-LP	RES FLAME PROOF	91 OHM 1/2W	R411	
MPC75R05K-LF	RES CEMENT	.05 OHM 5W	R235,236	
MPC76R05K-LF	RES CEMENT	.05 OHM 2W	R203-214	
SVR-08T3B501	TRIM POT	500 OHM 1/8W	SVR101,102	
SVR-08T3B502	TRIM POT	5 K 1/8W	SVR301	

DIODES

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
1B4B42	BRIDGE RECTIFIER	D401		
1N4002-AT	DIODE	1N4002	D402,403,501,503-507	
1N4004-AT	DIODE	1N4004	D109-116,121-124	
1N5402-F	DIODE	1N5402	D404-411	

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
1SS144-AT	DIODE	1SS144	D103-108,117-120,133-136,502,505	
1SS176-AT	DIODE	1SS176	D001,002	
1S1588-AT	DIODE	1S1588	D301-303,305,306,308,601,602	
6A2-F	DIODE	6A2	D412-415	
HER303-F OR 30DF2FC	DIODE	HER303 30DF2FC	D125-132	
LN28WP	LED	RED	LD603-614	
LN48YP	LED	AMBER	LD601,602	
MA27QA-AT	DIODE	MA27QA	D101,102	
ZD50-035-AT	DIODE	ZENER 1/2W 3.5V	ZD501	
ZD50-062-AT	DIODE	ZENER 1/2W 6.2V	ZD301	
ZD50-137-AT	DIODE	ZENER 1/2W 13.7V	ZD101,102	







TRANSISTORS

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
2SA1015-GR-RT OR 2SA1015-Y-RT	XISTOR	2SA1015	Q001,301,401,402,501,505,508	
2SA1302LB-RO OR 2SB1163A-QSP	XISTOR	2SA1302 2SB1163	Q123,124,135-138,141,142	
2SA1370-E,F	XISTOR	2SA1370	Q107,108,119,120	
2SA970-BL-RT OR 2SA970-GR,RT	XISTOR	2SA970	Q105,106,146	
2SA970-GR,BL	XISTOR	2SA970	Q115,116	
2SB1163A-S,P	XISTOR	2SA1163	Q129,130	
2SC1815-GR-RT OR 2SC1815-Y-RT	XISTOR	2SC1815	Q302,403,404,503,506,507	
2SC1846-Q,R	XISTOR	2SC1846	Q111,112	
2SC2240-BL-RT OR 2SC2240-GR-RT	XISTOR	2SC2240	Q103,104,125,126,145	
2SC2240-GR,BL	XISTOR	2SC2240	Q113,114	
2SC2878-A,B	XISTOR	2SC2878	Q101,102	
2SC3281-R,O OR 2SD1718A-Q,S,P	XISTOR	2SC3281 2SD1718	Q121,122,131-134,139,140	
2SC3288B-O,Y	XISTOR	2SC3288	Q144	
2SC3467-E,F	XISTOR	2SC3467	Q109,110,117,118	
2SD1718A-S,P	XISTOR	2SD1718	Q127,128	
321-40005-00	XISTOR	TO92 JFET SM SG 2N 5458		To Fail Side of Input Bd. MI-719 See Service Bulletin M-1.0t-6A
321-60001-00	XISTOR	TO220 NPN PWR MJE15030 (or FT317B)	Q117,118	Was 2SC3467
321-60003-00	XISTOR	TO220 PNP PWR MJE15031 (or FT417B)	Q119,120	Was 2SA1370
321-60008-00	XISTOR	TO200 PNP PWR 2SA1370		
321-60009-00	XISTOR	TO200 NPN PWR 2SC3467		

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
AN78M12F	IC	7812	IC401	
AN79M12F	IC	7912	IC402	
LA6324	IC	LA6324	IC601,602	
NJM-072S-E	IC	NJM072	IC101	
NJM4558D	IC	NJM4558	IC301	
NJM4560S	IC	NJM4560	IC001,002	
TLP631	PHOTOCOUPLER		PC401	

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
104001	AIR-CORE COIL		L101,102	
105-40006-00 OR FH-032C	FUSEHOLDER AND CARRIER FUSEHOLDER AND CARRIER		FH401	
108-00102-00	INSULATOR RAG PAPER .015"			
108-00201-00	INSULATION, FIBERGLASS 1" THICK			
111-20051-00	SOLDER LUG #6			Use on Line Filter
118-90001-00 OR NO.5167	STRAIN RELIEF MCT .062 WS .15 x .28" 18/2 STRAIN RELIEF			
171825-5	MICRO PLUG		MP103	
171825-6	MICRO PLUG		MP101,102	
159-50001-00	TYRAP 3-3/8" L WHT			
315-13006-00 OR FU-621034T-S	FUSE, MDA 10 (120V Version) FUSE 10A		FU401	
315-13005-00	FUSE, MDA 5 (220V Version)			
318-50004-00 OR U12-10005-280A	THERMAL SWITCH U12-10005-280A THERMAL SWITCH U12-10005-280ATH402			
401-10171-00	WIRE 18 AWG TEW VIOLET 3.25"			Use on Line Filter
401-10541-00	WIRE 22 AWG TR-64 BLACK 3.5"			Use on Line Filter
401-10129-01	WIRE 18 AWG TEW BROWN 5"			
401-90012-00 OR ACC-022DHG7EIA	LINECORD 16/2 POLARIZED LINECORD			
402-00007-00	SLEEVING BLK UL .294 ID x 1.97" LONG			
402-00008-00	SLEEVING BLK UL .294 ID x .75" LONG			
402-00009-00	SLEEVING BLK UL .294 ID x 9.0" LONG			
402-10006-00	HEATSHRINK TUBING 3/16" OD x 3/4" L			Use on Line Filter
403-10003-00	SEALANT, SILICONE RUBBER RTV			
42A1PO1A	MAIN PCB ASSY WITH RD PCB ASSY, M-1.0t (N.I.)			
4SA1PO3B	INPUT PCB ASSY, M-1.0t (N.I.)			
503-40023-01 OR N21349B-2	PANEL, BACK SCREEN (NON-INVERTING) PANEL, BACK SCREEN (NON-INVERTING)			
507-00025-00	BRACKET, THERMAL SWITCH			
532-20006-00	BOX, M-1.0t			
532-30007-00	FOAM CORNER BLOCKS			
5494-03C	CONNECTOR		JP101,102	
5494-07C	CONNECTOR		JP601	
59BS4795	GROUND LUG		P002	
617-10033-01 OR NPT-2154	TRANSFORMER, M-1.0t UL TRANSFORMER, M-1.0t		T401	

SECTION 9

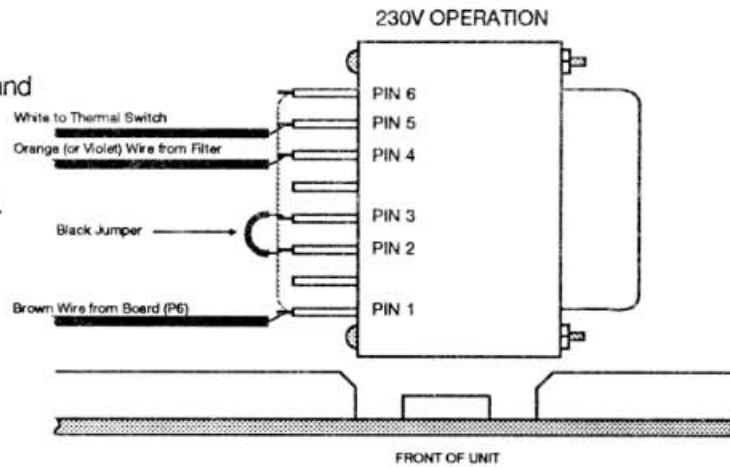
VOLTAGE CONVERSION FOR M-1.0t

Bill of Materials

Qty	Part Number	Description
1	315-13005-00	Fuse MDA 5A
1	315-13006-00	Fuse MDA 10A
1	530-10095-00	Label 5A SLO-BLO
1	530-10094-00	Label 230VAC/50HZ

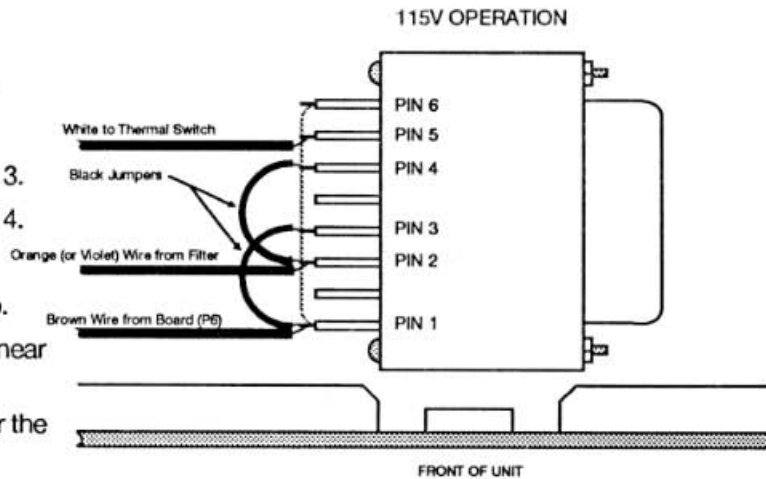
Directions for Change (115V to 230V)

1. Remove black jumper wires from pins 1 & 3 and pins 2 & 4.
2. Remove orange wire from pin 2.
3. Add black jumper wire connecting pins 2 & 3.
4. Solder orange wire to pin 4.
5. Change fuse from 10A slo-blo to 5A slo-blo.
6. Add 230V/50Hz label to back panel near the linecord.
7. Add 5A fuse label to back panel near the fuseholder.



Directions for Change (230V to 115V)

1. Remove black jumper wire from pins 2 & 3.
2. Remove orange wire from pin 4.
3. Add black jumper wire connecting pins 1 & 3.
4. Add black jumper wire connecting pins 2 & 4.
5. Solder orange wire to pin 2.
6. Change fuse from 5A slo-blo to 10A slo-blo.
7. Remove 230V/50Hz label from back panel near the linecord.
8. Remove 5A fuse label from back panel near the fuseholder.



CARVER CORPORATION
SERVICE BULLETIN

Service Bulletin # M-1.0t-2	Model M-1.0t	Serial # as needed
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Reason: TO IMPROVE PRE-DRIVER RELIABILITY (Q117 - Q120).

Procedure: If the amplifier has shorted predrivers:

Replace Q117, Q118 2SC3467 transistors with MJ15030 (or FT317) transistors.

Replace Q119, Q120 2SA1370 transistors with MJ15031 (or FT417) transistors.

Install so that the "tab" side corresponds to the "flat" side as shown on the part locator drawing.

Delete: Qty-2 321-60009-00
2SC3467 transistors

Qty-2 321-60008-00
2SA1370 transistors

Add: Qty-2 321-60001-00
MJ15030 (or FT317) transistor

Qty-2 321-60003-00
MJ15031 (or FT417) transistor

SERVICE APPROVAL _____
ENGINEERING APPROVAL _____

SERVICE BULLETIN

Service Bulletin # M-1.0t-3	Model M-1.0t	Serial # All
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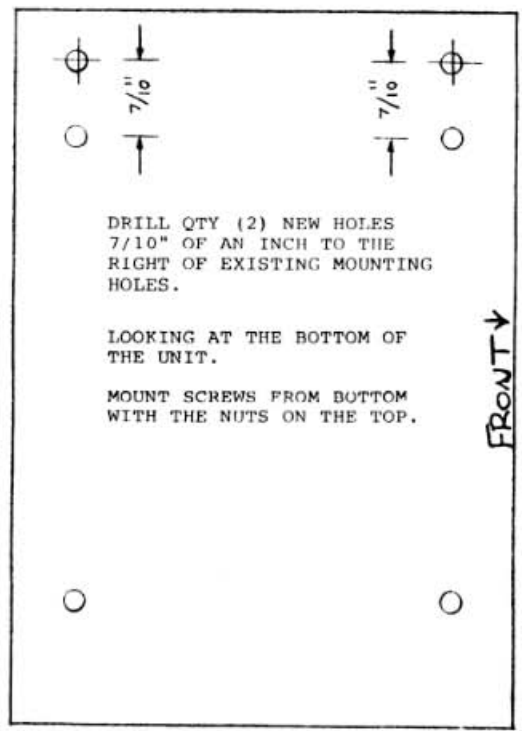
Reason: New Power Transformer being used.

Procedure: When replacing the Power Transformer in the M-1.0t from the original type to the current type, two new mounting holes must be drilled into the bottom sub-panel.
 The new Transformer is also wired differently, with the correct connections listed below by terminal number

Delete: Qty (1) NPT-2154 Transformer

Add: Qty (1) 617-10033-01 Transformer
 Qty (4) 151-20152-00
 10-32 X 3/8 Phillips Screw
 Qty (4) 152-10004-00
 10-32 Kepnut

- | | | | |
|----------------|----|--------|------------------|
| | 11 | ORANGE | TO P402-4 |
| WHITE FROM | 13 | 10 | RED TO P401-3 |
| THERMAL SWITCH | 12 | 9 | BROWN TO P402-2 |
| BLACK TO TAP-2 | 4 | 8 | BLACK TO P401-1 |
| BLACK TO TAP-1 | 3 | 7 | BROWN TO P402-1 |
| ORANGE-SUPPLY | 2 | 6 | RED TO P401-2 |
| BLACK-SUPPLY | 1 | 5 | ORANGE TO P402-3 |



SERVICE APPROVAL *[Signature]*
 ENGINEERING APPROVAL _____
 4/17/89 DATE

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # M-1.0t-4	Model M-1.0t	Serial # 10756 to 12538
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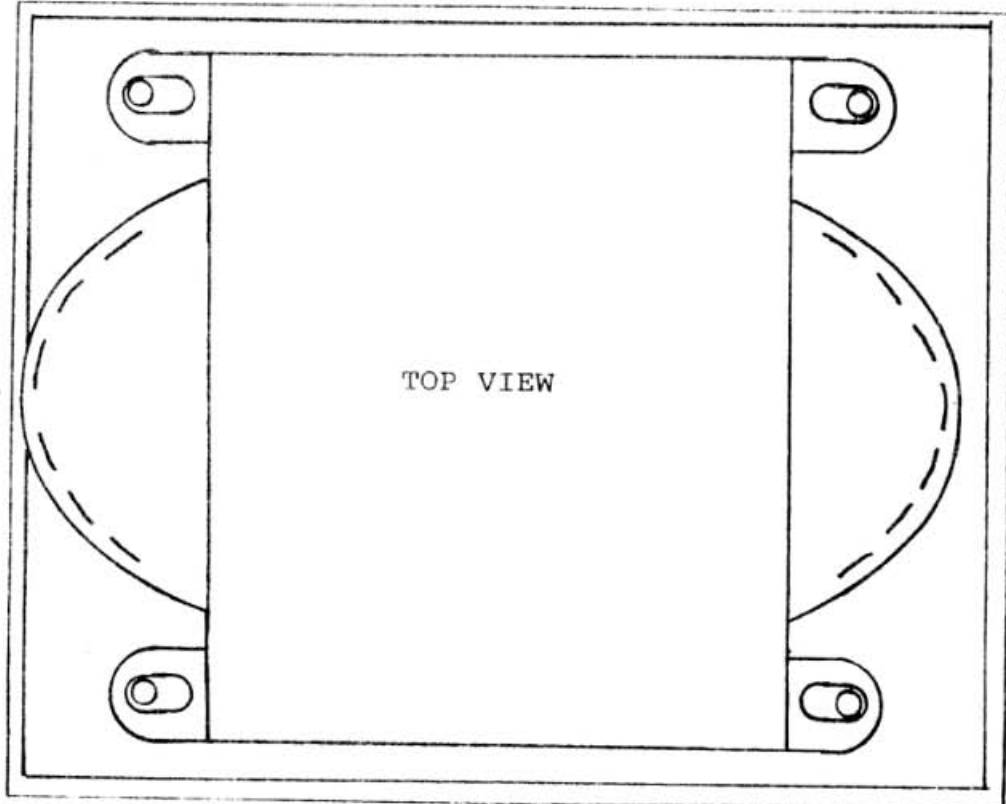
Reason: Power Transformer Primary wires have the potential to short out against the chassis due to the mounting location of the transformer.

- Procedure:
1. Remove screws that hold top cover; remove cover.
 2. Check clearance between the transformer windings and the chassis. This clearance must equal or exceed .050 inches.
 3. If clearance is less than that required, remove the two left mounting screws and relocate the transformer and position to center of mounting plate.
 4. Drill two new mounting holes using the transformer mounting lugs as a guide.
 5. Check for any loose metal shavings; Mount two screws.

Delete: Old serial number, submit with warranty claim.
CALL SERVICE DEPARTMENT AT 1-800-443-0547 FOR MAILING OF NEW SERIAL NUMBER LABEL.

Add: Insulating Paper 10B-00102-00
NEW SERIAL NUMBERS

REAR OF UNIT



PROBLEM AREA
→
INCORRECT POSITION

TOP VIEW

FRONT OF UNIT

INCORRECT POSITIONING OF TRANSFORMER

SERVICE APPROVAL *Wayne King* 6-2-89
 ENGINEERING APPROVAL *Pat Richardson* 6-2-89

DATE

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # M-1.0t-4	Model M-1.0t	Serial # 10756 to 12558
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Reason: SEE PAGE ONE.

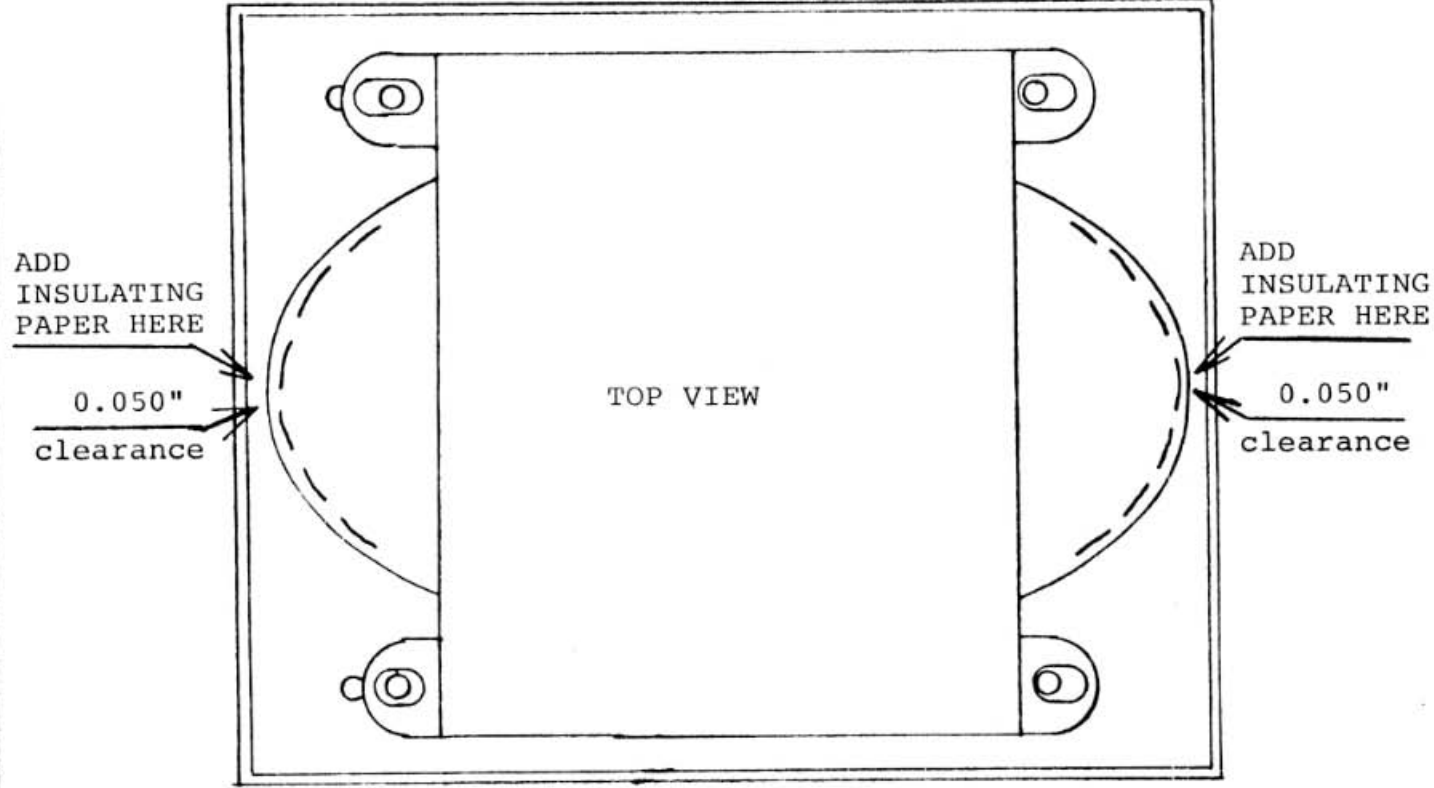
Procedure:

6. Install (2-1/2)" x (1-1/2)" Insulating paper (108-00102-00) with a 90 degree bend 3/4" from the end of the (2-1/2)" dimension in the left bottom corner of the Transformer mounting pan. The paper is secured on the bottom side with a SMALL amount of RTV (epoxy). This paper is to be used on BOTH SIDES if the clearance on the right side of the transformer is less than .050 inches. SEE BELOW
7. Hi-Pot all units at 1250v.
8. Function test any units that have had new mounting holes.

Delete:

Add:

REAR OF UNIT



FRONT OF UNIT

CORRECT POSITION OF TRANSFORMER

SERVICE APPROVAL *Wayne Roberts* 6-2-89
 ENGINEERING APPROVAL *Tim Buchanan* 6-3-89

Service Bulletin # M-1.0t-4	Model M-1.0t	Serial # 10756 to 12558
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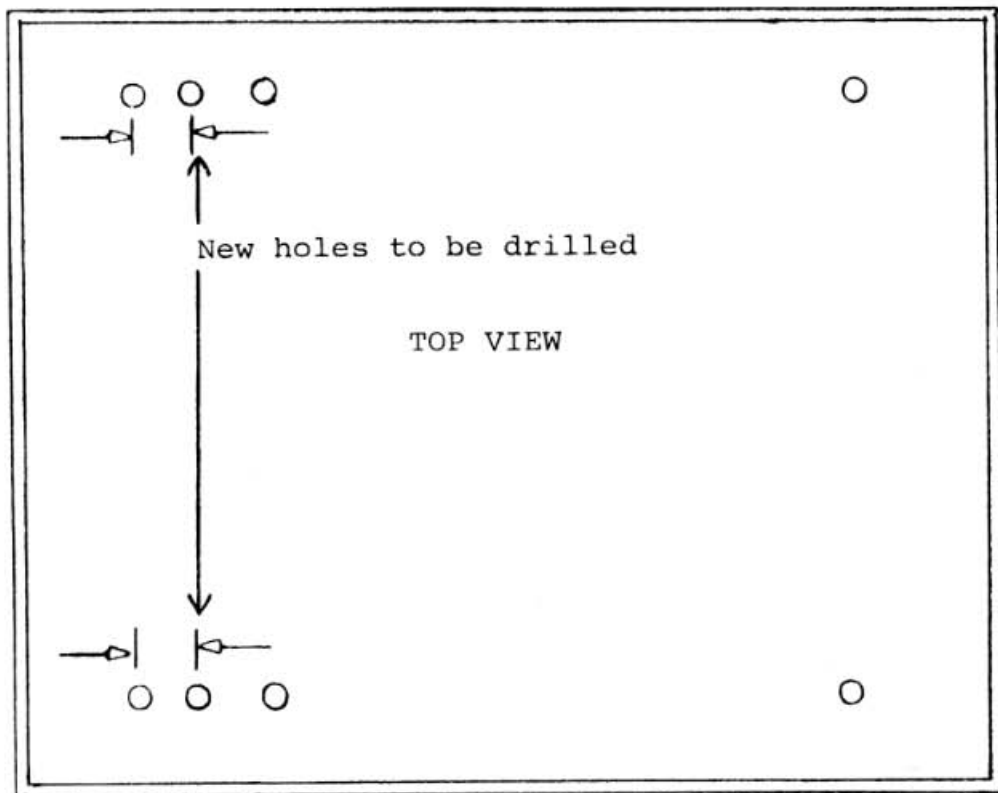
Reason: SEE PAGE ONE.

- Procedure:
8. (continued) The function test required is limited to powering the unit up and driving both channels with a signal generator. Check for proper LED movement.
 9. Reinstall top cover.
 10. FOR WARRANTY CLAIMS AND VERIFICATION REMOVE SERIAL NUMBER AND ADD NEW SERIAL NUMBER LABEL. (OBTAINED FROM SERVICE DEPARTMENT).
SEND IN OLD SERIAL NUMBER WITH WARRANTY CLAIM, THIS MUST BE DONE OR CLAIM WILL NOT BE PROCESSED.

Delete:

Add:

REAR OF UNIT



FRONT OF UNIT
POSSIBLE POSITION OF NEW HOLES

SERVICE APPROVAL *Walter Langford* 6-5-89
 ENGINEERING APPROVAL *The Buchanan* 6-5-89

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # M-1.0t-5	Model M-1.0t	Serial # Below #9500 or Below #70900000
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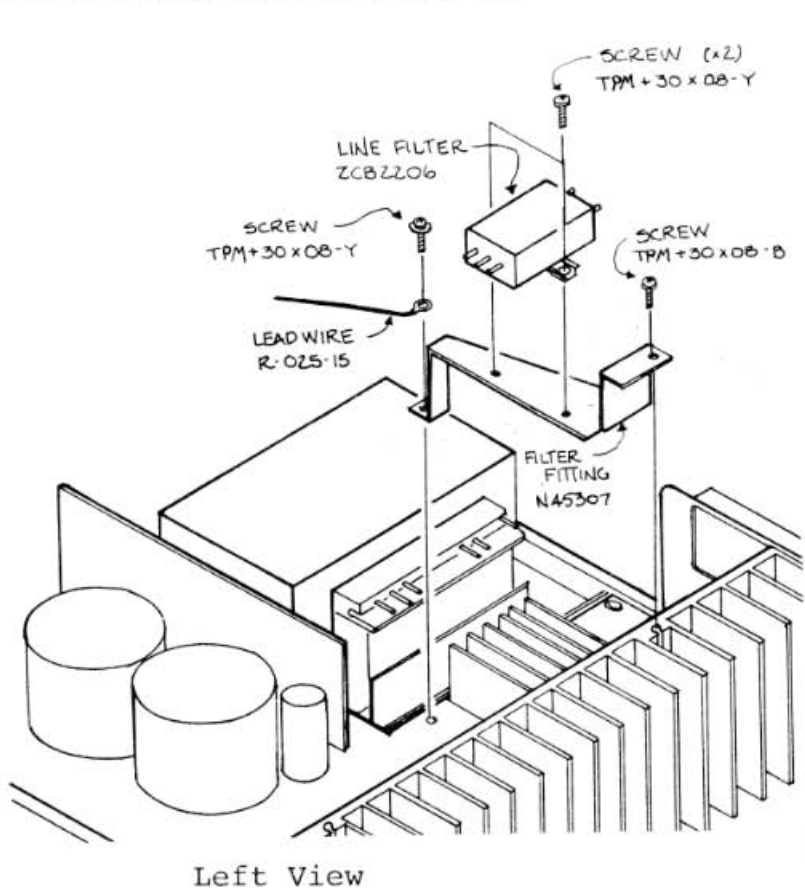
Reason: A.M. interference when amplifier is on.

Procedure: Remove C401, C402, C403 from power supply board.
 Remove black wire from P2, cut off 4", solder to tab "A".
 Remove orange wire from P8, solder to tab "C".
 Remove orange wire from P1, solder to tab "D".
 Add blue wire from tab "E" to hole where C402 was closest to C404.
 Add black ground wire from tab "B" to ground of chassis.
 NOTE: Add heatshrink tubing on wires to filter.

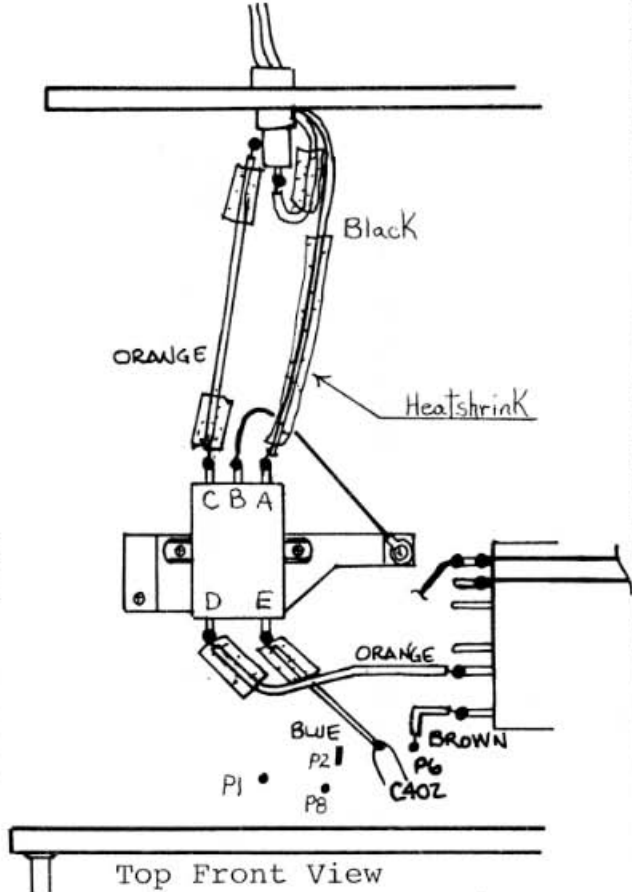
eco #772

Delete: C401 0.0033uf
 C402 0.0033uf
 C403 0.1uf

Add: ZCB2206-11 Noise filter
 N45307 Bracket.
 402-10006-00 Heatshrink tubing.
 401-10541-00 22 AWG Blk 3.5" grd.
 TPM+30X08-Y Qty. (2) Tap screw
 TPM+30X08-B Qty. (1) Tap screw.
 401-10171-00 18 AWG Blue 3.25"
 111-20051-00 #6 solder lug



Left View



Top Front View

SERVICE APPROVAL *Wayne Smith 1/6/89*
 ENGINEERING APPROVAL *Richardson 1/4/89*

**CARVER CORPORATION
SERVICE BULLETIN**

Service Bulletin # M-1.0t-6A	Model M-1.0t	Ser.# As Needed
Problem: Turn on / turn off thump.		Date 11/01/89

Note: Units after S/N 4482 or 70100000 have a stereo/mono switch on the rear panel (non-inverting version).

PROCEDURE

Note: Turn-off thump in excess of 2 volts p-p may indicate unbalanced $\pm 12V$ supplies, leaky input op amp IC101, or shorted commutator transistor. Check these components before proceeding.

1. Remove input board and install FET's and 2 M Ω resistors as indicated in Fig. 2 and 3. All components must be installed on the foil side of the board. Re-install board.
2. Install 51 K Ω resistors on the foil side of the main board as indicated in Fig. 4 and 5.
3. Power up amplifier and test performance. Turn-off thumps should be less than 200 mV into 8 Ω dummy loads. May be monitored on DC coupled scope set to slowest sweep setting.

Delete:	Add:
	Qty. 4 321-40005-00 (2N5458 FET)
	Qty. 4 251-00111-00 (51K Ω $\frac{1}{4}$ watt)
	Qty. 2 251-00149-00 (2M Ω $\frac{1}{4}$ watt)

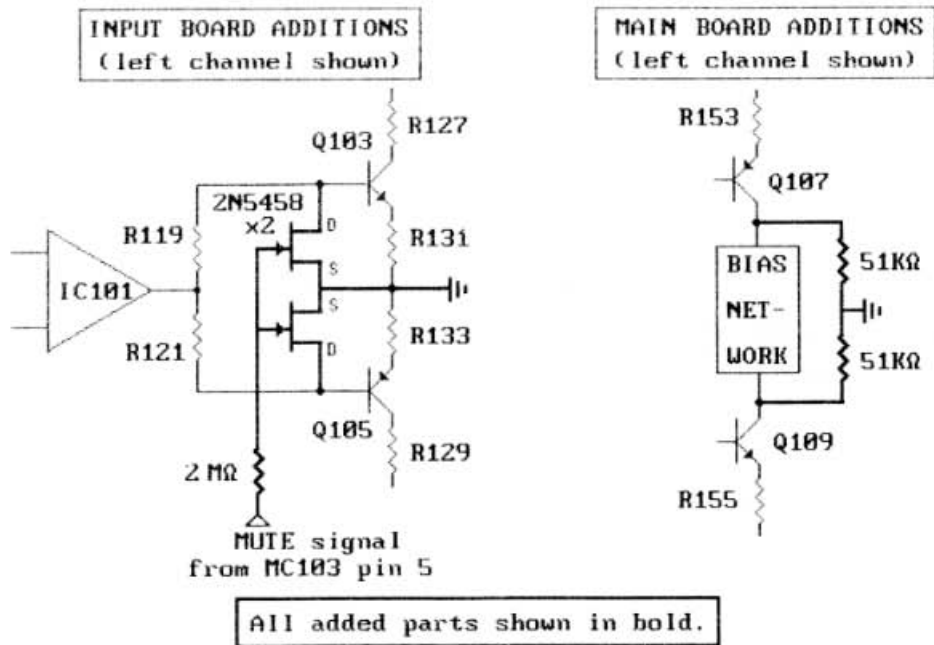
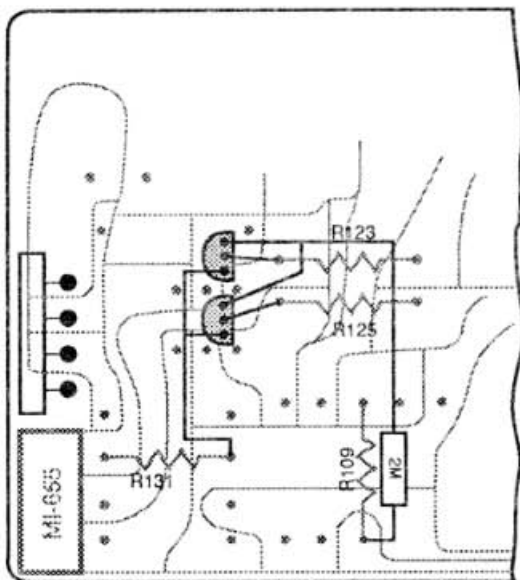


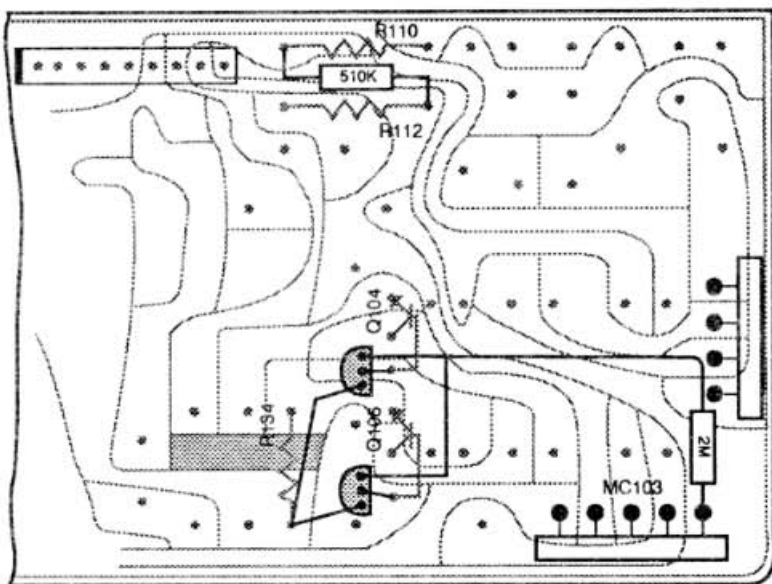
Fig. 1.

Engineering Approval *Vic Kelpman* 11/9/89

Service Approval *Wayne Stewart* 11/9/89



Input board left side



Input board right side

2N5458
TOP VIEW



1. In addition to the procedure described on page 1, install a 510K ohm 1/4W resistor between R110 and R112 as shown above.