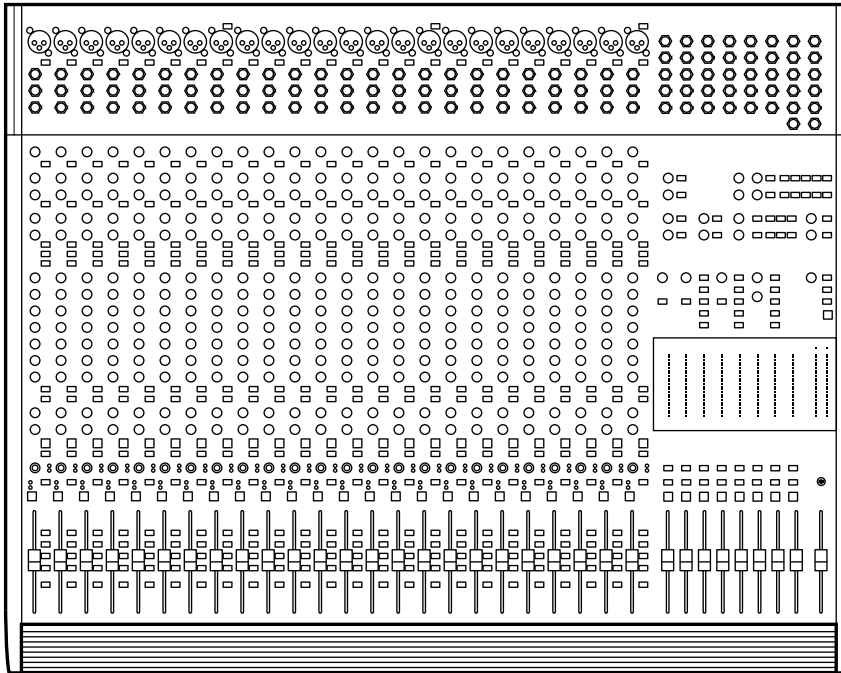


MACKIE®

8•BUS

8•BUS MIXING CONSOLE



SERVICE MANUAL

	<p>SERVICE ON THIS EQUIPMENT IS TO BE PERFORMED BY EXPERIENCED REPAIR TECHNICIANS ONLY <i>CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE</i></p>	
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	<h2>CAUTION AVIS</h2> <p>RISK OF ELECTRIC SHOCK DO NOT OPEN <i>RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR</i></p>	
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CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE THE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED PERSONNEL

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR EVITER LES RISQUES DE CHOC ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE. AUCUN ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER. CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE.

AVIS: POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE A LA PLUIE OU A L'HUMIDITE.

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UN PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS LAISSER AUCUNE PARTIE A DECOUVERT.

This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION :Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio energy and, if not installed properly and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Le symbole éclair avec point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'électrocution.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Le point d'exclamation à l'intérieur d'un triangle équilatéral est employé pour alerter les utilisateurs de la présence d'instructions importantes pour le fonctionnement et l'entretien (service) dans le livret d'instruction accompagnant l'appareil.

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INTRODUCTION



This manual contains basic service information. It is essential that you have a copy of the user's manual as this contains the complete operating instructions.



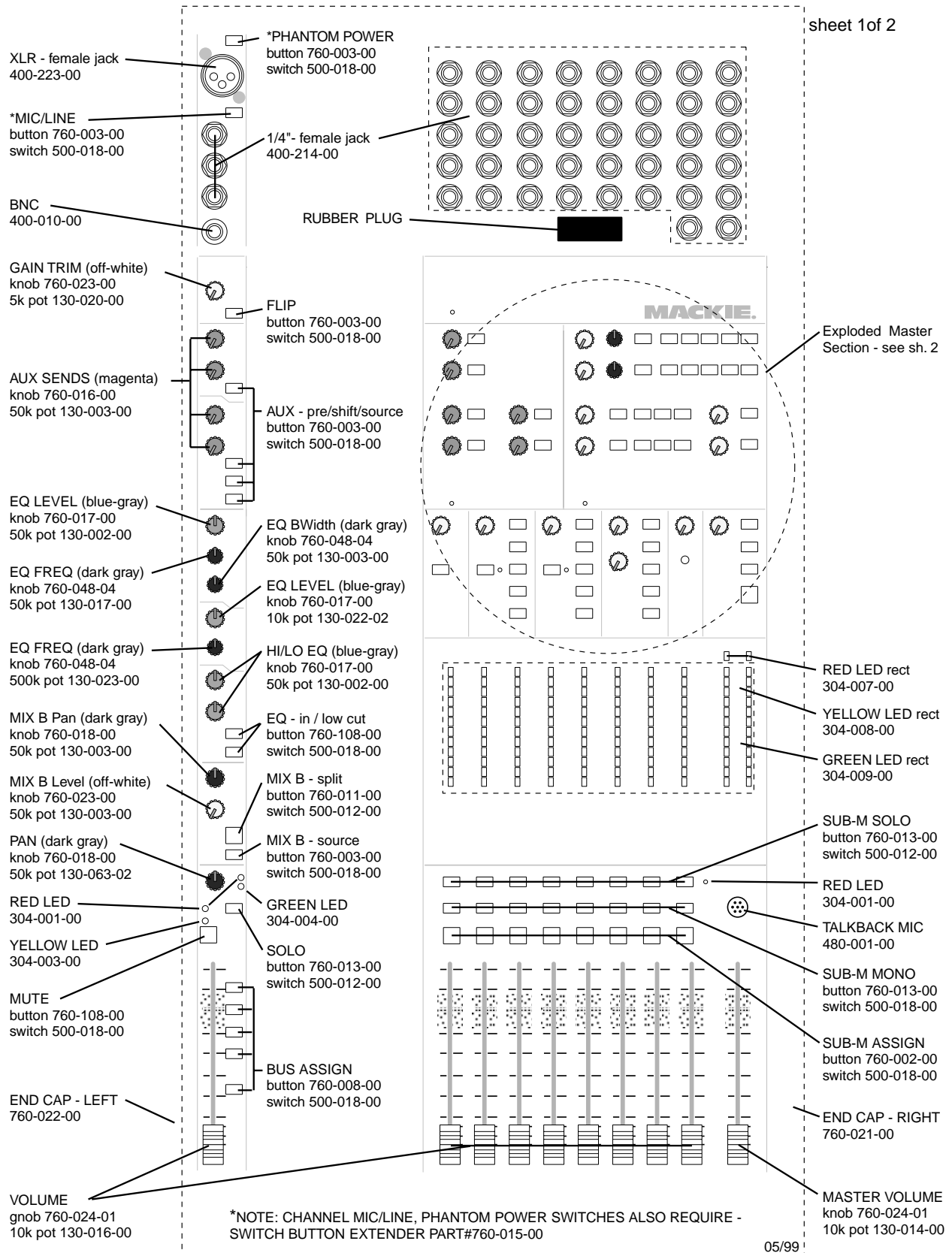
SERVICE TECHNICAL ASSISTANCE

Mackie Designs, Service Technical Assistance, is available 8AM - 5PM PST, Monday through Friday for Authorized Mackie Service Centers, at 1-800-258-6883. Feel free to call with any questions and speak with a carefully-calibrated technician. If one is not available, leave a detailed message and a qualified Mackoid will return your call asap.

DISCLAIMER

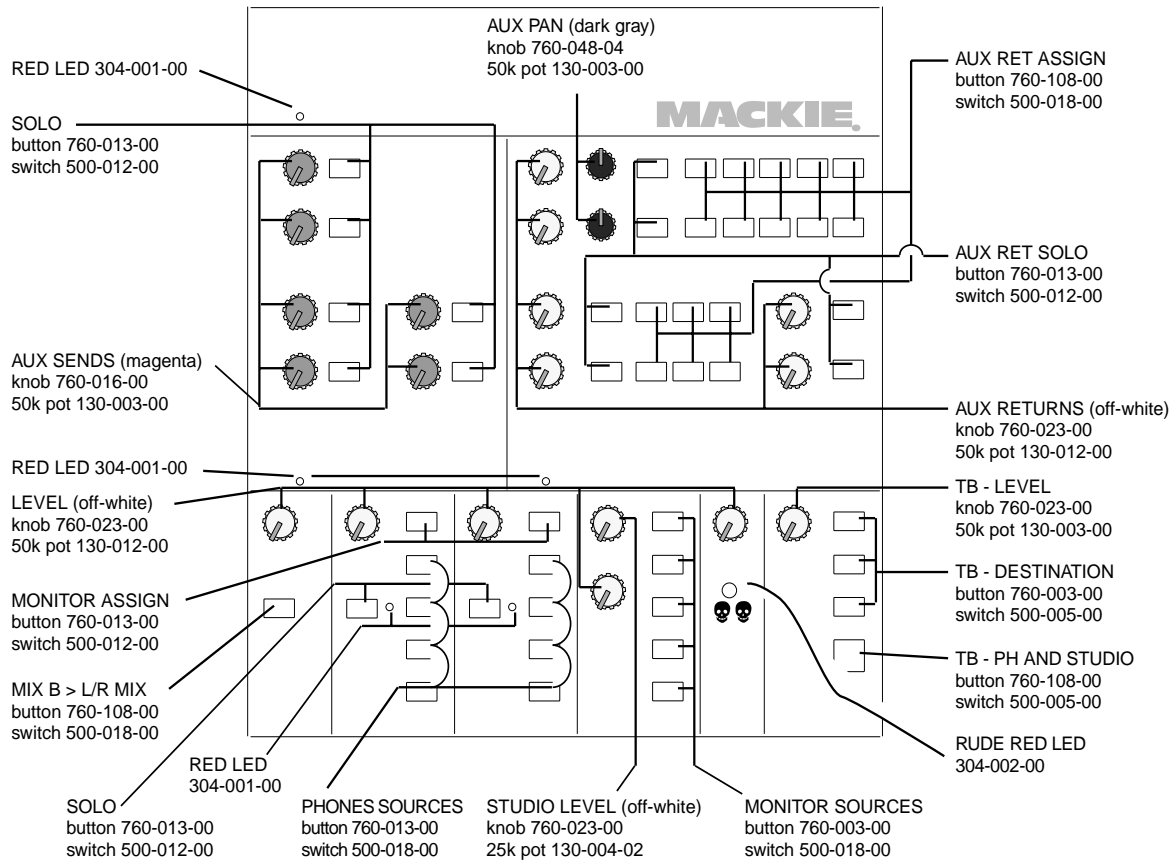
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QUICK PARTS

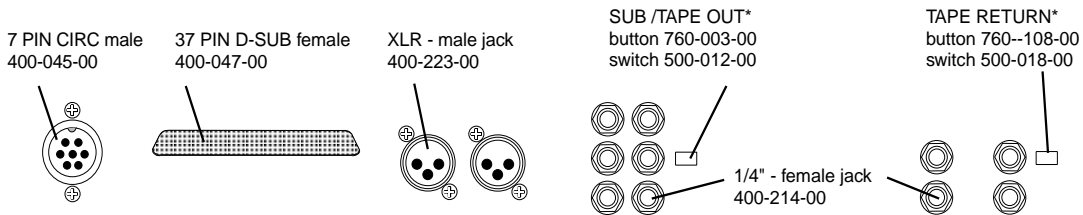


EXPLODED MASTER SECTION

8 Bus Quick Parts



REAR PANEL

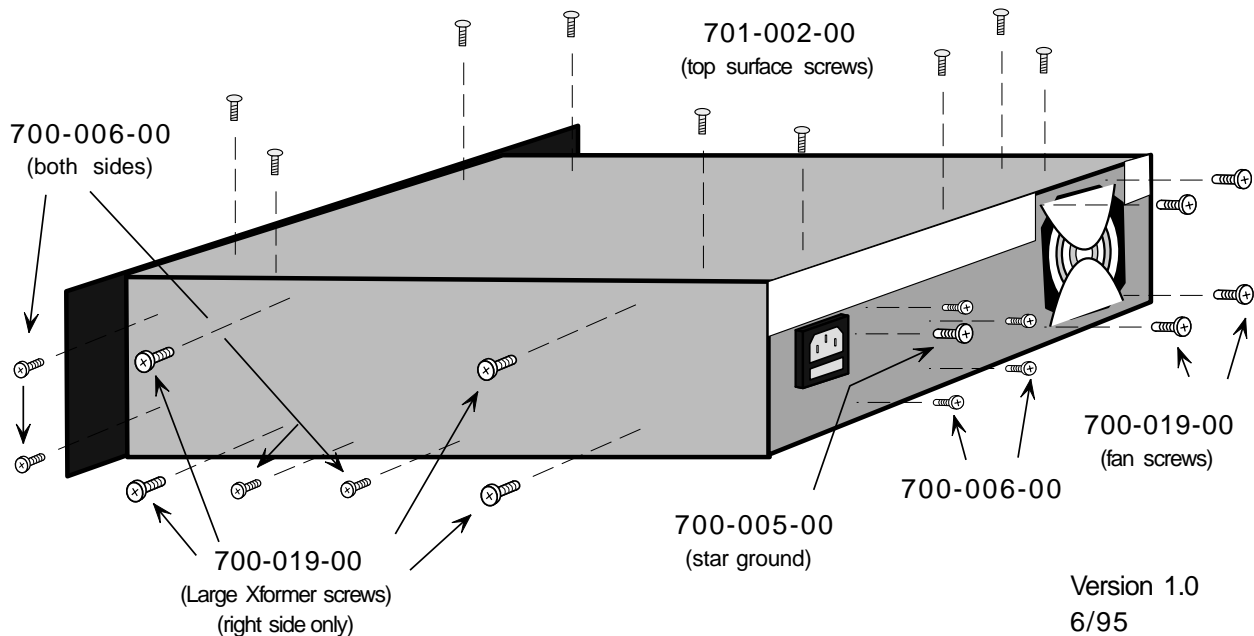
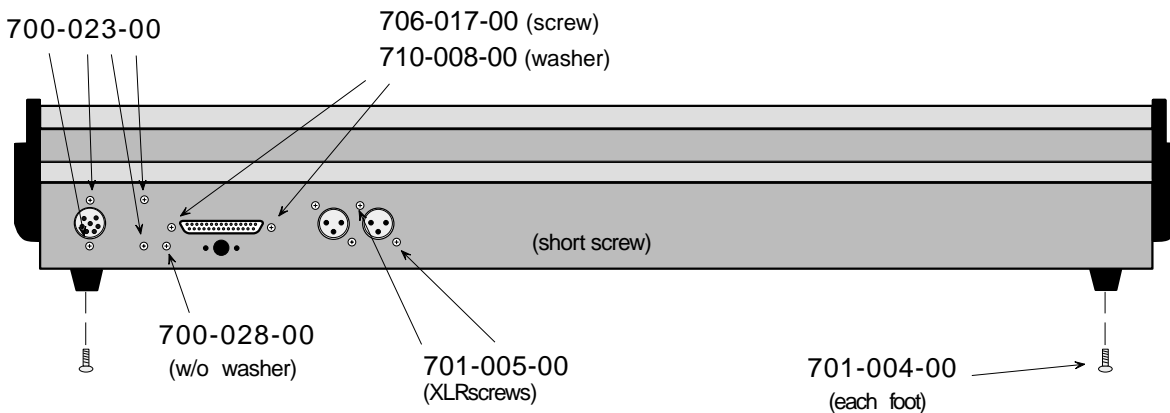
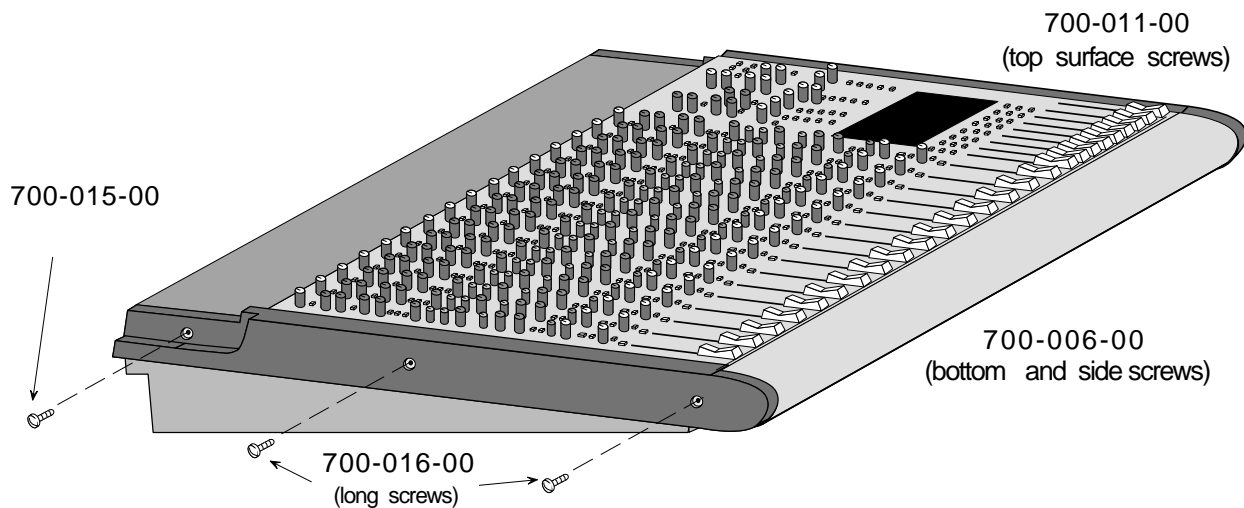


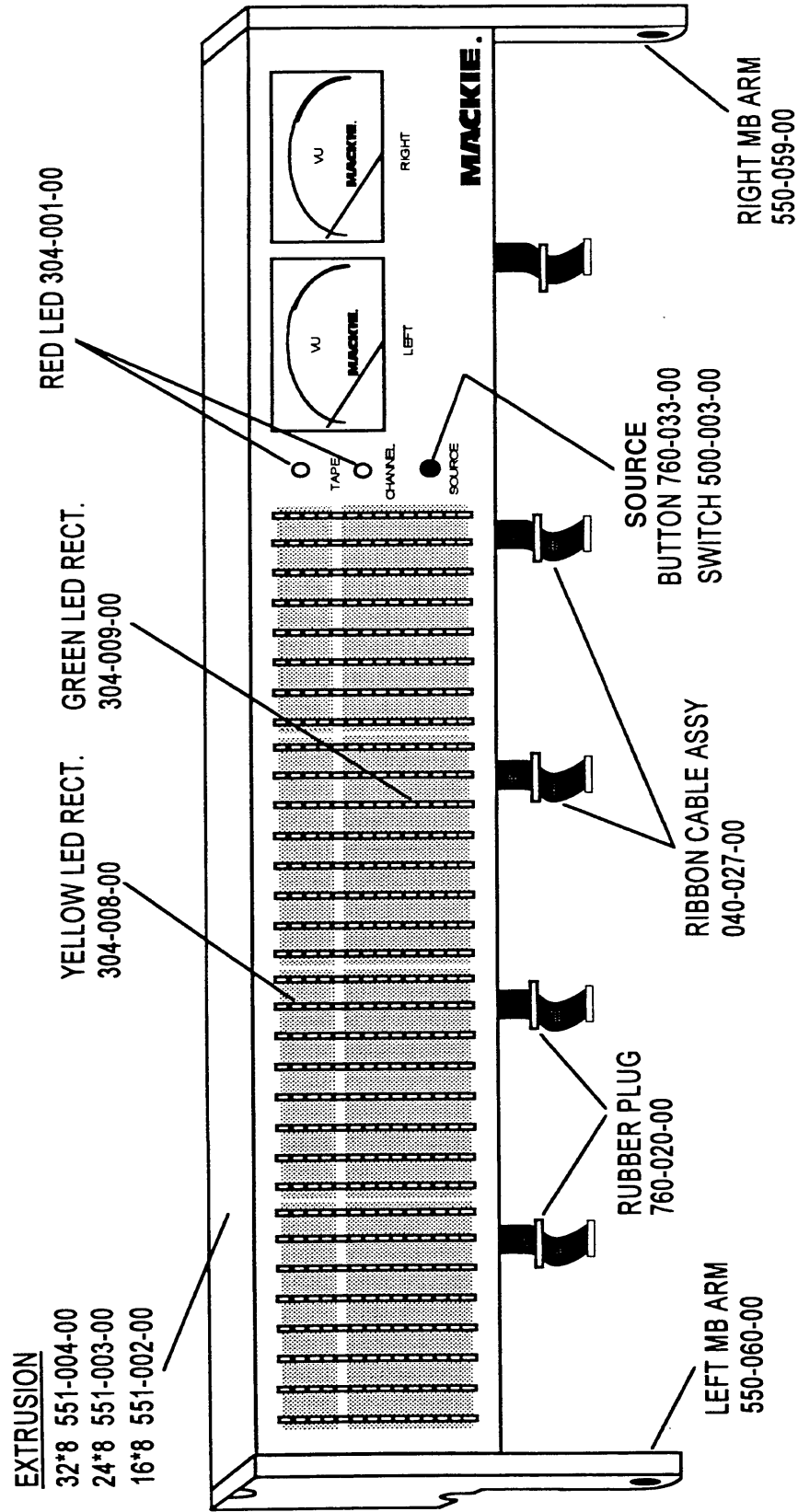
* NOTE: SUBMASTER/TAPE OUTPUT & TAPE RETURN LEVEL SWITCHES ALSO REQUIRE - SWITCH BUTTON EXTENDER PART#760-028-00

MISCELLANEOUS:

8 BUS OWNER'S MANUAL 820-007-00	8 BUS Power Supply OWNER'S MANUAL, 820-006-00	Meter Bridge INSTRUCTIONS 820-008-00
Extrusion ARMREST 16-8, 24-E 551-006-00 24-8 551-007-00 32-8 551-008-00	ALLEN HEAD (HEX) SCREWS (4-40 X 1/4) 700-011-00	24-E EXPANSION CABLE 640-004-00
METER LENS 780-002-00	POWER SUPPLY POWER SWITCH 16A, 500-006-00	POWER SUPPLY FAN 770-001-00
METER BRIDGE MOUNTING KIT (080-030-00 - includes instructions and mounting hardware)	STAND FASTENER KIT no part # - includes 10 screws qty 4 8-32X1/4 machine qty 6 6-32X1/4 sheet	DC POWER CABLE 040-013-00
	END CAP SCREWS FRONT (10-32X1 1/4) 700-016-00 BACK (10-32X3/4) 700-015-00	LINE CORD 6' IEC 10A USA (110V), 640-001-00 EURO (230V), 640-002-00

05/99





EXTRUSION

- 32*8 551-004-00
- 24*8 551-003-00
- 16*8 551-002-00

YELLOW LED RECT.
304-008-00

GREEN LED RECT.
304-009-00

RED LED 304-001-00

LEFT MB ARM
550-060-00

RUBBER PLUG
760-020-00

RIBBON CABLE ASSY
040-027-00

SOURCE
BUTTON 760-033-00
SWITCH 500-003-00

RIGHT MB ARM
550-059-00

MORE STUFF

METER BRIDGE LENS

- 32*8 780-005-00
- 24*8 780-004-00
- 16*8 780-003-00

MB VU ANALOG PCB ASSY
055-022-00

VU METER LENS
780-006-00

MB LED PCB ASSY
055-023-00

MB ARM SCREWS
701-001-00

VU METERS
770-002-00

MB INSTRUCTIONS
820-008-00

METER BRIDGE MOUNTING KIT
080-030-00

REPLACEMENT VU LAMPS
304-017-00 (9V NON-FROSTED)
304-023-00(18V FROSTED)

PARTS LIST

8•Bus individual circuit boards
(parts list taken from schematics)

990-008-00 REV S.....	Mic/Line Preamp Board	Pages 2-3
990-009-00 REV U	Channel Board	Pages 4-6
990-010-00 REV U	Output Board	Pages 7-9
990-011-00 REV I	Meter Board	Page 10
990-012-00 REV S.....	Jack Field Board	Page 10
990-013-00 REV S.....	Tape Output Board	Page 11
990-014-00 REV S.....	Tape Input Board	Page 11
990-015-00 REV S.....	Power Supply Board	Page 12
990-019-00 REV S.....	Expander	Page 13
990-020-00 REV C ...	Power Distribution	Page 13
990-021-00 REV S.....	Expander Output	Page 14
990-022-00 REV H	Analog Meter Bridge	Page 15
990-023-00 REV F.....	LED Meter	Page 16

Parts Numbering guide

040- Cables
 055- Finished PCB Assy
 100- Pots and resistors
 200- Capacitors
 300- Semiconductors
 400- Jacks/Connectors
 500- Switches
 510- Fuses
 550- Chassis Metalwork
 600- Transformers
 601- Inductors
 610- Wires and Cables
 640- AC line cords
 700- Hardware
 760- Knobs/Plastic
 770- Fans
 790- Misc./Packing
 800- Printed Material
 860- EPROM

990-008-00 REV S, Mic/Line Preamp Board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-009-00	RESISTOR CF	22 5%	R113 R213 R313 R413 R513 R613 R713 R813
100-027-00	RESISTOR CF	120 5%	R121 R155 R221 R255 R321 R355 R421 R455 R521 R555 R621 R655 R721 R755 R821 R855
100-042-00	RESISTOR CF	510 5%	R107-108 R207-208 R307-308 R407-408 R507-508 R607-608 R707-708 R807-808
100-050-00	RESISTOR CF	1K1 5%	R2
100-080-00	RESISTOR CF	20K 5%	R1 R118 R218 R318 R418 R518 R618 R718 R818
110-072-00	RESISTOR CF	9K1 5%	R3-4
110-080-00	RESISTOR CF	20K 5%	R150
111-017-00	RESISTOR CF	4.7 5%	R103-104 R203-204 R303-304 R403-404 R503-504 R603-604 R703-704 R803-804
115-281-00	RESISTOR CF	825 1%	R109-110 R209-210 R309-310 R409-410 R509-510 R609-610 R709-710 R809-810
115-331-00	RESISTOR CF	2K49 1%	R111-112 R211-212 R311-312 R411-412 R511-512 R611-612 R711-712 R811-812
115-350-00	RESISTOR CF	3K92 1%	R114-117 R119-120 R214-217 R219-220 R314-317 R319-320 R414-417 R419-420 R514-517 R519-520 R614-617 R619-620 R714-717 R719-720 R814-817 R819-820
115-373-00	RESISTOR CF	6K81 1%	R101-102 R201-202 R301-302 R401-402 R501-502 R601-602 R701-702 R801-802
115-376-00	RESISTOR CF	7K32 1%	R105-106 R205-206 R305-306 R405-406 R505-506 R605-606 R705-706 R805-806
211-001-00	CAPACITOR CERAMIC AXIAL	0.01 10%	C3-11
211-008-00	CAPACITOR CERAMIC AXIAL	220 PF 10%	C105-106 C205-206 C305-306 C405-406 C505-506 C605-606 C705-706 C805-806
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF 10%	C108-110 C208-210 C308-310 C408-410 C508-510 C608-610 C708-710 C808-810
220-003-02	CAPACITOR LYTIC RADIAL TAPE	47UF 10%	C1-2 C103-104 C203-204 C303-304 C403-404 C503-504 C603-604 C703-704 C803-804
220-004-00	CAPACITOR LYTIC RADIAL	470UF 10%	C107 C207 C307 C407 C507 C607 C707 C807
220-005-02	CAPACITOR LYTIC RADIAL TAPE	470UF 10%	C12-13
300-001-00	DOIDE SIGNAL	1N4148	D101-104 D201-204 D301-304 D401-404 D501-504 D601-604 D701-704 D801-804
310-003-02	TRANSISTOR PNP, T&R	2SA1084	Q103-104 Q203-204 Q303-304 Q403-404 Q503-504 Q603-604 Q703-704 Q803-804
310-004-00	TRANSISTOR NPN	MPSA06	Q1-2 Q101-102 Q201-202 Q301-302 Q401-402 Q501-502 Q601-602 Q701-702 Q801-802
320-001-00	I.C. LINEAR	NJM 4560	U1-4
400-002-01	CONNECTOR XLR PC MTG VERT FEMALE		J101 J201 J301 J401 J501 J601 J701 J801
400-003-01	CONN. JACK 1/4" VERT PC MT W/LOCKWASHER		J102-104 J202-204 J302-304 J402-404 J502-504 J602-604 J702-704 J802-804
400-013-00	CONNECTOR RTA 20P .100 X 2		J5
400-036-00	CONNECTOR RTA 40P .100 X 2		J4 J6
400-048-00	CONNECTOR RTA 7P .156 X 1		J14
400-056-00	CONNECTOR STR 20P .100 X 2		J12
400-059-00	CONN QUICK DISC 250		E4

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
500-001-00	SWITCH PUSH VERT PC MTG	2P2T	SW1 SW101 SW201 SW301 SW401 SW501 SW601 SW701 SW801
601-001-00	FERRITE BEAD		L101-102 L201-202 L301-302 L401-402 L501-502 L601-602 L701-702 L801-802
610-007-00	WIRE 22GA TR64	VIO 6.5	
760-003-00	BUTTON SW 9X5 MM		
760-015-00	"EXTENDER, SWITCH BUTTON"		

990-009-00 REV U, Channel board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
050-016-00	EQ MODULE		U104 U204 U304 U404 U504 U604 U704 U804
100-008-00	RESISTOR CF	20 5%	R175 R275 R375 R475 R575 R675 R775 R875
100-027-00	RESISTOR CF	120 5%	R165 R265 R365 R465 R565 R665 R765 R865
100-033-00	RESISTOR CF	220 5%	R124 R224 R324 R424 R524 R624 R724 R824
100-042-00	RESISTOR CF	510 5%	R122 R127 R130 R222 R227 R230 R322 R327 R330 R422 R427 R430 R522 R527 R530 R622 R627 R630 R722 R727 R730 R822 R827 R830
100-048-00	RESISTOR CF	910 5%	R146 R246 R346 R446 R546 R646 R746 R846
100-050-00	RESISTOR CF	1K1 5%	R123 R128 R223 R228 R323 R328 R423 R428 R523 R528 R623 R628 R723 R728 R823 R828
100-052-00	RESISTOR CF	1K3 5%	R102 R202 R302 R402 R502 R602 R702 R802
100-056-00	RESISTOR CF	2K 5%	R158 R258 R358 R458 R558 R658 R758 R858
100-059-00	RESISTOR CF	2K7 5%	R159-160 R259-260 R359-360 R459-460 R559-560 R659-660 R759-760 R859-860
100-066-00	RESISTOR CF	5K1 5%	R101 R134-145 R147 R149 R151 R153 R201 R234-245 R247 R249 R251 R253 R301 R334-345 R347 R349 R351 R353 R401 R434-445 R447 R449 R451 R453 R501 R534-545 R547 R549 R551 R553 R601 R634-645 R647 R649 R651 R653 R701 R734-745 R747 R749 R751 R753 R801 R834-845 R847 R849 R851 R853
100-067-00	RESISTOR CF	5K6 5%	R105 R205 R305 R405 R505 R605 R705 R805
100-070-00	RESISTOR CF	7K5 5%	R161 R163 R261 R263 R361 R363 R461 R463 R561 R563 R661 R663 R761 R763 R861 R863
100-071-00	RESISTOR CF	8K2 5%	R109-110 R209-210 R309-310 R409-410 R509-510 R609-610 R709-710 R809-810
100-077-00	RESISTOR CF	15K 5%	R174 R274 R374 R474 R574 R674 R774 R874
100-080-00	RESISTOR CF	20K 5%	R104 R108 R114 R170 R188 R204 R208 R214 R270 R288 R304 R308 R314 R370 R388 R404 R408 R414 R470 R488 R504 R508 R514 R570 R588 R604 R608 R614 R670 R688 R704 R708 R714 R770 R788 R804 R808 R814 R870 R888
100-084-00	RESISTOR CF	30K 5%	R155 R255 R355 R455 R555 R655 R755 R855
100-086-00	RESISTOR CF	36K 5%	R121 R132-133 R157 R221 R232-233 R257 R321 R332-333 R357 R421 R432-433 R457 R521 R532-533 R557 R621 R632-633 R657 R721 R732-733 R757 R821 R832-833 R857
100-092-00	RESISTOR CF	62K 5%	R103 R203 R303 R403 R503 R603 R703 R803

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-097-00	RESISTOR CF	100K 5%	R119 R129 R219 R229 R319 R329 R419 R429 R519 R529 R619 R629 R719 R729 R819 R829
100-104-00	RESISTOR CF	200K 5%	R116-118 R120 R125 R171 R216-218 R220 R225 R271 R316-318 R320 R325 R371 R416-418 R420 R425 R471 R516-518 R520 R525 R571 R616-618 R620 R625 R671 R716-718 R720 R725 R771 R816-818 R820 R825 R871
130-002-02	RESISTOR POT 9MM HORIZ	50KB	R106-107 R113 R206-207 R213 R306-307 R313 R406-407 R413 R506-507 R513 R606-607 R613 R706-707 R713 R806-807 R813
130-003-02	RESISTOR POT 9MM HORIZ	50KG	R115 R148 R150 R152 R154 R156 R162 R215 R248 R250 R252 R254 R256 R262 R315 R348 R350 R352 R354 R356 R362 R415 R448 R450 R452 R454 R456 R462 R515 R548 R550 R552 R554 R556 R562 R615 R648 R650 R652 R654 R656 R662 R715 R748 R750 R752 R754 R756 R762 R815 R848 R850 R852 R854 R856 R862
130-016-00	RESISTOR POT SLIDE 100MM	10KD	R126 R226 R326 R426 R526 R626 R726 R826
130-022-02	RESISTOR POT 9MM HORIZ	10KB	R112 R212 R312 R412 R512 R612 R712 R812
130-030-02	RESISTOR POT 9MM HORIZ	5KZY	R166 R266 R366 R466 R566 R666 R766 R866
130-062-02	RESISTOR POT 12MM HORIZ DUAL 50KC		R164 R264 R364 R464 R564 R664 R764 R864
130-063-02	RESISTOR POT 12MM HORIZ DUAL 50KC/50KA		R131 R231 R331 R431 R531 R631 R731 R831
130-064-02	RESISTOR POT 12MM HORIZ DUAL 500KC		R111 R211 R311 R411 R511 R611 R711 R811
200-002-02	CAPACITOR MYLART&R	0.018 10%	C139 C239 C339 C439 C539 C639 C739 C839
200-003-02	CAPACITOR MYLART&R	0.033 10%	C107-108 C207-208 C307-308 C407-408 C507-508 C607-608 C707-708 C807-808
200-005-02	CAPACITOR MYLART&R	0.0068	C105-106 C118-119 C205-206 C218-219 C305-306 C318-319 C405-406 C418-419 C505-506 C518-519 C605-606 C618-619 C705-706 C718-719 C805-806 C818-819
200-007-02	CAPACITOR MYLARTAPE	0.01	C110 C210 C310 C410 C510 C610 C710 C810
200-008-02	CAPACITOR MYLART&R	0.0039	C111 C211 C311 C411 C511 C611 C711 C811
211-001-00	CAPACITOR CERAMIC AXIAL	0.01 10%	C1-2 C123-124 C223-224 C323-324 C423-424 C523-524 C623-624 C723-724 C823-824
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF 10%	C135-136 C235-236 C335-336 C435-436 C535-536 C635-636 C735-736 C835-836
211-006-00	CAPACITOR CERAMIC AXIAL	20PF 10%	C122 C222 C322 C422 C522 C622 C722 C822
211-008-00	CAPACITOR CERAMIC AXIAL	220 PF 10%	C126 C138 C226 C238 C326 C338 C426 C438 C526 C538 C626 C638 C726 C738 C826 C838

MACKIE. 8•BUS SERVICE MANUAL

990-009-00 Channel board continued

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF 10%	C104 C109 C112 C114-117 C120-121 C128 C132 C204 C209 C212 C214-217 C220-221 C228 C232 C304 C309 C312 C314-317 C320-321 C328 C332 C404 C409 C412 C414-417 C420-421 C428 C432 C504 C509 C512 C514-517 C520-521 C528 C532 C604 C609 C612 C614-617 C620-621 C628 C632 C704 C709 C712 C714-717 C720-721 C728 C732 C804 C809 C812 C814-817 C820-821 C828 C832
220-008-02	CAPACITOR LYTIC RADIAL TAPE	1UF 10%	C130-131 C230-231 C330-331 C430-431 C530-531 C630-631 C730-731 C830-831
220-013-02	CAPACITOR LYTIC RADIAL TAPE	.22UF 10%	C101-103 C113 C201-203 C213 C301-303 C313 C401-403 C413 C501-503 C513 C601-603 C613 C701-703 C713 C801-803 C813
300-001-00	DOIDE SIGNAL	1N4148	D101-103 D110 D201-203 D210 D301-303 D310 D401-403 D410 D501-503 D510 D601-603 D610 D701-703 D710 D801-803 D810
304-027-02	LED T1, T&R W/SPACER	RED	D105 D107 D205 D207 D305 D307 D405 D407 D505 D507 D605 D607 D705 D707 D805 D807
304-028-02	LED T1, T&R W/SPACER	YEL	D106 D206 D306 D406 D506 D606 D706 D806
304-029-02	LED T1, T&R W/SPACER	GRN	D104 D204 D304 D404 D504 D604 D704 D804
320-011-00	I.C. LINEAR, 8-PIN SIP	4560	U102-103 U202-203 U302-303 U402-403 U502-503 U602-603 U702-703 U802-803
323-007-00	I.C. LINEAR, 8-PIN SIP	2403	U101 U201 U301 U401 U501 U601 U701 U801
400-005-00	CONNECTOR ST HDR .1 -40	20 X 2	J4 J6
400-031-00	CONNECTOR ST HDR .1	10 X 2	J5
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2	J3
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2	J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2	J1
450-009-00	PCB, 8-BUS CHANNEL		
500-036-00	SWITCH PUSH VERT PC MTG	4P2T	SW102 SW110 SW202 SW210 SW302 SW310 SW402 SW410 SW502 SW510 SW602 SW610 SW702 SW710 SW802 SW810
500-037-00	SWITCH PUSH PC MNT	2P2T	SW101 SW103-109 SW111-116 SW201 SW203-209 SW211-216 SW301 SW303-309 SW311-316 SW401 SW403-409 SW411-416 SW501 SW503-509 SW511-516 SW601 SW603-609 SW611-616 SW701 SW703-709 SW711-716 SW801 SW803-809 SW811-816
706-033-01	STANDOFF, SWAGE, 4-40 X .542L		Z101-124
760-011-00	BTN 9X9MM LG CORE		
760-013-00	BTN 9X5MM LG CORE		

990-010-00 REV U, OUTPUT BOARD

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
CONNECTOR STR 2P .156 X 1				E6 E1-4 E7-9
100-008-00	RESISTOR CF	20	5%	R12 R40 R48 R58 R65 R75 R96 R114 R132-133 R607-610
100-027-00	RESISTOR CF	120	5%	R3 R13 R20 R37 R41 R51 R54 R62 R71 R79 R88 R97 R102 R105 R115 R122 R140-141 R151 R169-172 R190-193 R227 R233-235 R237-238 R241-242 R246 R248-249 R404-405 R408-409 R412 R416 R501 R509 R511 R536
100-042-00	RESISTOR CF	510	5%	R5 R22 R39 R56 R73 R90 R107 R124
100-048-00	RESISTOR CF	910	5%	R137 R281 R284 R368 R441
100-050-00	RESISTOR CF	1K1	5%	R136 R220 R224 R228 R262-263 R274 R276 R291 R307-308 R452
100-056-00	RESISTOR CF	2K	5%	R14 R150 R164 R166 R204-205 R252-253 R259 R265 R296 R319 R323 R328 R330 R335 R337 R348 R352 R445 R454 R464 R466 R480 R483
100-058-00	RESISTOR CF	2K4	5%	R219 R223
100-059-00	RESISTOR CF	2K7	5%	R1-2 R17-19 R35-36 R52-53 R69-70 R86-87 R103-104 R120-121 R218 R222 R447
100-066-00	RESISTOR CF	5K1	5%	R6-10 R15-16 R24-29 R32-33 R42-44 R46-47 R49-50 R59-61 R64 R66-67 R76-78 R81 R83-84 R91 R93-95 R99-101 R108-112 R117-118 R126-130 R134-135 R148-149 R153-158 R161-162 R174-185 R188-189 R194-203 R207-212 R214-215 R217 R221 R226 R229-230 R245 R250-251 R264 R279-280 R282-283 R301-304 R309-310 R312-317 R321-322 R341-342 R345-346 R350-351 R360-367 R369 R371 R375-394 R396 R399 R403 R407 R411 R415 R429-430 R433-434 R437-438 R440 R455 R457-461 R465 R467-475 R478-479 R481-482 R502-503 R535 R540-547 R550-551 R553-554 R580
100-073-00	RESISTOR CF	10K	5%	R34 R82 R85 R144-145 R206 R225 R232 R260-261 R270 R275 R293 R397 R444 R446 R462-463 R476-477 R534 R611
100-077-00	RESISTOR CF	15K	5%	R266-267 R269 R272 R556-563 R573 R578
100-080-00	RESISTOR CF	20K	5%	R11 R23 R30 R45 R57 R63 R68 R74 R80 R92 R98 R113 R116 R119 R125 R131 R138-139 R142-143 R152 R231 R236 R239-240 R243-244 R247 R268 R271 R273 R299-300 R305-306 R343-344 R356-359 R370 R372 R400 R431-432 R435-436 R439 R453 R456 R506 R508 R532-533 R537 R548-549 R552 R555 R564-572 R574-577 R579 R605-606 R256-257 R298 R311 R325-326 R339-340 R354-355
100-083-00	RESISTOR CF	27K	5%	R146-147 R168 R173 R254-255 R295 R297 R320 R324 R332-333 R336 R338 R349 R353 R449 R510 R512
100-084-00	RESISTOR CF	30K	5%	R213 R216
100-086-00	RESISTOR CF	36K	5%	R395 R418-428
100-087-00	RESISTOR CF	39K	5%	
100-089-00	RESISTOR CF	47K	5%	R165 R167 R329 R331 R538-539
100-092-00	RESISTOR CF	62K	5%	R159-160 R186-187 R451

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990-010-00 Output board continued

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-097-00	RESISTOR CF	100K 5%	R277 R292 R294
130-003-02	RESISTOR POT 9MM HORIZ	50KG	R373-374 R402 R406 R410 R414 R442-443 R448
130-004-02	RESISTOR POT 12MM HORIZ DUAL 25KG		R289
130-014-00	RESISTOR POT SLIDE 100MM DUAL	10KD	R278
130-016-00	RESISTOR POT SLIDE 100MM	10KD	R4 R21 R38 R55 R72 R89 R106 R123
130-061-02	RESISTOR POT 12MM HORIZ DUAL 50KG		R163 R258 R285-288 R290 R318 R327 R334 R347
200-004-02	CAPACITOR MYLARTAPE	0.047 10%	C229 C299 C307
211-001-00	CAPACITOR CERAMIC	0.01 10%	C178-207 C233 C244 C263 C277-278 C283 C285 C287 C290 C296-298 C302-306 C309-340
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF 10%	C6 C12 C18 C24 C34 C40 C46 C55-56 C61-62 C67-70 C76-77 C79 C82 C96-97 C101-102 C106-107 C230-231 C245-247 C250 C252 C256 C261-262 C264 C270 C295
211-006-00	CAPACITOR CERAMIC AXIAL	20PF 10%	C49-50 C53-54 C59-60 C65-66 C80 C83 C89 C100 C113-114 C119-120 C123-124 C127-128 C133-134 C137-148 C161 C164 C167 C170 C172 C175 C209 C212 C222-227
211-007-00	CAPACITOR CERAMIC AXIAL	470PF 10%	C73-74 C300-301
211-008-00	CAPACITOR CERAMIC AXIAL	220PF 10%	C1 C5 C7 C11 C13 C17 C19 C23 C25 C29 C31 C35 C37 C41 C43 C47 C85 C87 C341-342
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF 10%	C2 C8 C14 C20 C26 C32 C38 C44 C48 C51-52 C63-64 C75 C78 C86 C88 C91-92 C94-95 C99 C103-105 C108-109 C112 C115-118 C121-122 C125-126 C129-132 C135-136 C149-160 C162-163 C165-166 C168-169 C171 C173-174 C176-177 C210 C218-221 C228 C232 C234-243 C248-249 C251 C253-255 C257-260 C265 C276 C280
220-014-02	CAPACITOR LYTIC RADIAL TAPE	2.2UF 10%	C266-269 C271-275 C293
220-019-02	CAP LYTIC RADIAL KS TAPE	47UF 10%	C3-4 C9-10 C15-16 C21-22 C27-28 C30 C33 C36 C39 C42 C45 C57-58 C71-72 C81 C84 C90 C93 C98 C110-111 C208 C211 C213-217 C279 C281-282 C284 C286 C288-289 C291-292 C294
300-001-00	DIODE SIGNAL	1N4148	D2 D12-21
302-006-00	DIODE ZENER	1N4734	D8-10
304-002-00	DIODE LED T1-3/4 W/FLASHER	RED	D11
304-027-02	LED T1, T&R W/SPACER	RED	D1 D4-7
304-029-02	LED T1, T&R W/SPACER	GRN	D3
310-004-00	TRANSISTOR NPN	MPSA06	Q1 Q11
310-008-02	TRANSISTOR NPN T&R	2SC3792	Q2-10
320-003-00	I.C. LINEAR, 8-PIN SIP	2068	U1 U5 U9 U13 U30 U33 U57
320-011-00	I.C. LINEAR, 8-PIN SIP	4560	U2-4 U6-8 U10-12 U14-29 U31-32 U34-52 U54-56 U58-61
400-013-00	CONNECTOR RTA 20P .100 X 2		J9
400-048-00	CONNECTOR RTA 7P .156 X 1		J15
400-051-00	CONNECTOR RTA 26P .100 X 2		J7
400-052-00	CONNECTOR RTA 34P .100 X 2		J8 J11
400-058-00	CONNECTOR STR 14P .100 X 1		J10

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
400-063-00	CONNECTOR STR 3P .156 X 1		J32
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2	J3 J31
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2	J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2	J1
450-010-00	PCB, 8-BUS OUTPUT		B1
480-001-00	MICROPHONE ELEMENT		M1
500-020-00	SWITCH PUSH MOM VERT PC MTG	2P2T	SW61 SW77-79
500-036-00	SWITCH PUSH VERT PC MTG	4P2T	SW2 SW5 SW8 SW11 SW14 SW17 SW20 SW23 SW29-31 SW36-39 SW55-60 SW62-64
500-037-00	SWITCH PUSH VERT PC MTG	2P2T	SW1 SW3-4 SW6-7 SW9-10 SW12-13 SW15-16 SW18-19 SW21-22 SW24-28 SW35 SW40-48 SW74-76 SW80-87 SW89-93
706-009-00	SPACER, PLASTIC .385 LED		
706-033-01	STANDOFF, SWAGE, 4-40 X .542L		Z101-118
760-011-00	BTN 9X9MM LG CORE		Z1 Z3-10
760-013-00	BTN 9X5MM LG CORE		Z2 Z11-74

990-011-00 REV I, Meter board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
140-037-00	RESISTOR CF	33 5%	R1 R6-10 R16 R21-25 R31 R36-40 R46 R51-55 R61 R66-70
140-066-00	RESISTOR CF	510 5%	R78-79
140-076-00	RESISTOR CF	1K3 5%	R12-15 R27-30 R42-45 R57-60 R72-75
140-090-00	RESISTOR CF	5K1 5%	R76
140-094-00	RESISTOR CF	7K5 5%	R77 R80-89
140-101-00	RESISTOR CF	15K 5%	R4 R11 R19 R26 R34 R41 R49 R56 R64 R71
140-112-00	RESISTOR CF	39K 5%	R5 R20 R35 R50 R65
212-001-00	CAPACITOR CERAMIC	0.01 5%	C2 C4 C7 C9 C12 C14 C17 C19 C22 C24
220-010-00	CAPACITOR LYTIC RADIAL	22UF 10%	C1 C3 C5-6 C8 C10-11 C13 C15-16 C18 C20-21 C23 C25
304-007-00	DOIDE LED RECT	RED	D121-122
304-008-00	DOIDE LED RECT	YEL	D1-4 D13-16 D25-28 D37-40 D49-52 D61-64 D73-76 D85-88 D97-100 D109-112
304-009-00	DOIDE LED RECT	GRN	D5-12 D17-24 D29-36 D41-48 D53-60 D65-72 D77-84 D89-96 D101-108 D113-120
311-002-00	X-SISTOR PNP	2N4403	Q1-20
323-002-00	I.C. QUAD COMPARATOR SO	LM339	U7
324-002-00	I.C. METER DR.	BA6820F	U1-5
400-058-00	CONNECTOR ST HDR .1	14 POS	J10
706-016-00	STAND OFF	4-40 X .325	
706-021-00	SPACER, RUBBER LED 12 SEG		
706-022-00	SPACER, RUBBER LED 13 SEG		
760-029-00	LED BEZEL		
760-032-00	LED BEZEL		

990-012-00 REV S, Jack Field

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-027-00	RESISTOR CF	120 5%	R1-12
400-003-01	CONNECTOR JACK 1/4" VERT PC MOUNT-W/LOCKWASHER		J101-142
400-013-00	CONNECTOR RTA 20P .100 X 2		J9
400-051-00	CONNECTOR RTA 26P .100 X 2		J7
400-052-00	CONNECTOR RTA 34P .100 X 2		J8
400-056-00	CONNECTOR STR 20P .100 X 2		J13
450-012-00	PCB, 8-BUS JACKFIELD		

990-013-00 REV S, Tape Output board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-027-00	RESISTOR CF	120 5%	R1 R4 R7 R10 R13 R17 R19 R22
100-048-00	RESISTOR CF	910 5%	R3 R6 R9 R12 R15 R18 R21 R24
100-059-00	RESISTOR CF	2K7 5%	R2 R5 R8 R11 R14 R16 R20 R23
400-003-01	CONNECTOR JACK 1/4" VERT PC MOUNT-W/LOCKWASHER		J1-3 J5 J7-10 J12-18 J20-28
400-041-00	CONNECTOR XLR PC MTG VERT MALE		J4 J19
400-055-00	CONNECTOR STR 34P .100 X 2		J11
450-013-00	PCB, 8-BUS TAPE OUT		
500-012-00	SWITCH PUSH VERT PC MTG	4P2T	SW1-2
760-003-00	BUTTON SW 9X5 MM		
760-015-00	EXTENDER, SWITCH BUTTON		

990-014-00 REV S, Tape Input board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-052-00	RESISTOR CF	1K3 5%	R110 R112 R310 R312 R510 R512 R710 R712
100-061-00	RESISTOR CF	3K3 5%	R104 R108 R304 R308 R504 R508 R704 R708
100-069-00	RESISTOR CF	6K8 5%	R101-102 R105-106 R301-302 R305-306 R501-502 R505-506 R701-702 R705-706
100-070-00	RESISTOR CF	7K5 5%	R103 R107 R109 R111 R303 R307 R309 R311 R503 R507 R509 R511 R703 R707 R709 R711
211-001-00	CAPACITOR CERAMIC	0.01 10%	C1-2 C110-111 C310-311 C510-511 C710-711
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF 10%	C101-102 C104-105 C107-108 C301-302 C304-305 C307-308 C501-502 C504-505 C507-508 C701-702 C704-705 C707-708
211-007-00	CAPACITOR CERAMIC AXIAL	470PF 10%	C103 C106 C303 C306 C503 C506 C703 C706
310-008-00	TRANSISTOR NPN	2SC3792	Q101-102 Q301-302 Q501-502 Q701-702
320-001-00	I.C. LINEAR	NJM 4560	U101 U301 U501 U701
400-003-01	CONNECTOR JACK 1/4" VERT PC MOUNT-W/LOCKWASHER		J100 J200 J300 J400 J500 J600 J700 J800
400-031-00	CONNECTOR ST HDR .1	10 X 2	J5
450-014-00	PCB, 8*BUS TAPE IN		
500-001-00	SWITCH PUSH VERT PC MTG	2P2T	SW1
760-003-00	BUTTON SW 9X5 MM		
760-015-00	EXTENDER, SWITCH BUTTON		

990-015-00 REV S, Power Supply board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-073-00	RESISTOR CF	10K 5%	R39 R44
110-027-00	RESISTOR CF	120 5%	R4 R18
110-029-00	RESISTOR CF	150 5%	R3 R23 R31 R40-42
110-032-00	RESISTOR CF	200 5%	R6 R19
110-046-00	RESISTOR CF	750 5%	R32
110-049-00	RESISTOR CF	1K 5%	R10 R24
110-056-00	RESISTOR CF	2K 5%	R12 R26
110-065-00	RESISTOR CF	4K7 5%	R1 R15
110-072-00	RESISTOR CF	9K1 5%	R11 R25
110-079-00	RESISTOR CF	18K 5%	R2 R16
110-080-00	RESISTOR CF	20K 5%	R34
110-083-00	RESISTOR CF	27K 5%	R35
115-269-00	RESISTOR CF	619 1%	R14 R28
115-296-00	RESISTOR CF	1K18 1%	R13 R27
115-332-00	RESISTOR CF	2K55 1%	R37
115-350-00	RESISTOR CF	3K92 1%	R17 R43
115-376-00	RESISTOR CF	7K32 1%	R9 R20
115-407-00	RESISTOR CF	15K4 1%	R36
115-427-00	RESISTOR CF	24K9 1%	R38
121-088-00	RESISTOR MF	4K3 5%	R30
121-093-00	RESISTOR MF	6K8 5%	R29
122-043-00	RESISTOR MF	5.6 5%	R33
122-049-00	RESISTOR MF	10 5%	R5
125-018-00	RESISTOR CF	.51 1%	R7-8 R21-22
211-001-00	CAPACITOR CERAMIC	0.01 10%	C8 C13 C17 C21 C27-28
211-007-00	CAPACITOR CERAMIC AXIAL	470PF 10%	C9 C16
220-003-00	CAPACITOR LYTIC RADIAL	47UF 10%	C33-34
220-004-00	CAPACITOR LYTIC RADIAL	470UF 10%	C29-31
220-006-00	CAPACITOR LYTIC RADIAL	2200UF 10%	C1-2
220-007-00	CAPACITOR LYTIC RADIAL	100UF 10%	C24
220-011-02	CAPACITOR LYTIC RADIAL T&R	100UF 10%	C10-12 C18-20 C23 C25-26
220-020-00	CAPACITOR LYTIC RADIAL	10,000UF 10%	C5
220-021-00	CAPACITOR LYTIC RADIAL	2,200UF 10%	C7
220-022-00	CAPACITOR LYTIC RADIAL	22,000UF 10%	C3-4
220-023-00	CAPACITOR LYTIC RADIAL	6,800UF 10%	C6
220-024-00	CAPACITOR LYTIC RADIAL	100UF 10%	C14-15
220-025-00	CAPACITOR LYTIC RADIAL	1,000UF 10%	C22
220-026-00	CAPACITOR LYTIC RADIAL	1,000UF 10%	C32
300-001-00	DIODE SIGNAL	1N4148	D23-25 D30-32 D42-43
301-001-00	DIODE POWER	1N4002	D1-4 D17-22 D28-29 D33 D36 D38-41
301-003-00	DIODE POWER	1N5401	D13-16 D26 D34
301-005-00	DIODE POWER	FR602	D5-12
302-007-00	DIODE ZENER	1N5234C	D27 D35 D37
310-002-00	TRANSISTOR NPN	2N4403	Q7-8 Q14
310-004-00	TRANSISTOR NPN	MPSA06	Q2 Q6 Q10 Q15-16 Q20
310-014-00	TRANSISTOR POWER PNP	MJE2955	Q12-13
310-015-00	TRANSISTOR POWER NPN	MJE3055	Q3-4
310-016-00	TRANSISTOR NPN	MPSA18	Q17-18
310-017-00	TRANSISTOR PNP	MPSA56	Q1 Q9 Q21
310-018-00	TRANSISTOR PWR DAR NPN	TIP121	Q19
310-019-00	TRANSISTOR POWER NPN	TIP31C	Q5
310-020-00	TRANSISTOR POWER PNP	TIP32C	Q11
321-006-00	I.C. LINEAR POS 3 TERM VOLTAGE REGULATOR	MC78T12CT	3A U1
321-007-00	I.C. LINEAR POS 3 TERM VOLTAGE REGULATOR	MC78T05CT	3A U2

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
400-059-00	CONNECTOR, QUICK DISC. .250		J1-18 J20
400-060-00	FUSE CLIP PC MT	1A3999-10	FC1-12
400-070-00	CONNECTOR STRAIGHT	HDR .1 2 PIN	J19
510-001-00	FUSE 5X20	T1A	F7
510-014-00	FUSE 5X20	T6.3 A	F5-6
510-015-00	FUSE 5X20	T1.6A	F8

990-019-00 REV S, Expander

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
100-059-00	RESISTOR CF	2K7 5%	R13-22
100-066-00	RESISTOR CF	5K1 5%	R9-12
100-084-00	RESISTOR CF	30K 5%	R1-6
400-047-00	CONNECTOR FEM,PC MT,DP37		J20
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2	J3
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2	J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2	J1

990-020-00 REV C, Power Distribution

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
211-001-00	CAPACITOR CERAMIC	0.01 15V 10%	C3-4 C7-8
211-010-00	CAPACITOR CERAMIC	0.01 50V -400	C9
220-006-00	CAPACITOR LYTIC RADIAL	2200UF 25V 10%	C1-2 C5-6
400-015-00	CONNECTOR STRAIGHT POS	.156 7	J4 J7
400-045-00	CONNECTOR MALE RECEPT. AMPHENOL C16-1		J1
400-063-00	CONNECTOR IDC .156 X 3 LOCKING		J8
611-008-00	WIRE 18GA TR64 BLK 6.5 ST2.25		Z1
711-001-00	SOLDER LUG INT STAR #6		Z2
450-020-00	PCB		

990-021-00 REV S, Expander Output board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
100-027-00	RESISTOR CF	120	5%	R101 R105 R201 R205 R301 R305 R401 R405 R501 R505 R601 R605 R701 R705 R801 R805 R901 R905 R1001 R1005
100-059-00	RESISTOR CF	2K7	5%	R103 R107 R203 R207 R303 R307 R403 R407 R503 R507
100-066-00	RESISTOR CF	5K1	5%	R100 R104 R108-109 R200 R204 R208-209 R300 R304 R308-309 R400 R404 R408-409 R500 R504 R508-509 R600 R603-604 R607-609 R700 R704 R708-709 R800 R803-804 R807-809 R900 R904 R908-909 R1000 R1004 R1008-1009
100-080-00	RESISTOR CF	20K	5%	R102 R106 R202 R206 R302 R306 R402 R406 R502 R506 R602 R606 R702 R706 R802 R806 R902 R906 R1002 R1006
100-084-00	RESISTOR CF	30K	5%	R703 R707 R903 R907 R1003 R1007
211-001-00	CAPACITOR CERAMIC	0.01	10%	C106-107 C206-207 C306-307 C406-407 C506-507 C606-607 C706-707 C806-807 C906-907 C1006-1007
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C600 C603 C800 C803
211-006-00	CAPACITOR CERAMIC AXIAL	20PF	10%	C101 C104 C201 C204 C301 C304 C401 C404 C501 C504 C601 C604 C700-701 C703-704 C801 C804 C900-901 C903-904 C1000-1001 C1003-1004
211-008-00	CAPACITOR CERAMIC AXIAL	220 PF	10%	C100 C103 C200 C203 C300 C303 C400 C403 C500 C503
220-002-02	CAPACITOR LYTIC RADIAL TAPE	47UF	10%	C102 C105 C202 C205 C302 C305 C402 C405 C502 C505 C602 C605 C702 C705 C802 C805 C902 C905 C1002 C1005
320-001-00	I.C. LINEAR	NJM 4560		U101 U201 U301 U401 U501 U601 U700-701 U800-801 U900-901 U1000-1001
320-003-00	I.C. LINEAR	NJM 2068		U100 U200 U300 U400 U500 U600
400-048-00	CONNECTOR RTA 7P .156 X 1			J6
400-069-00	CONNECTOR MALE,PC MT,DP37			J21
400-077-00	CONNECTOR STR LCK SHRD 20P	.100 X 2		J3
400-078-00	CONNECTOR STR LCK SHRD 10P	.100 X 2		J2
400-079-00	CONNECTOR STR LCK SHRD 14P	.100 X 2		J1
450-021-00	PCB, EXPANDER OUT			
700-011-00	SCREW, BTN HD, 4-40 X 1/4			
706-025-00	STANDOFF, 4-40 THRU X .875L			

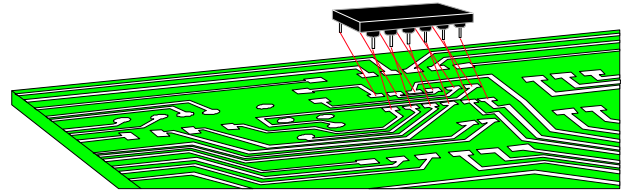
990-022-00 REV H, Analog Meter board

PART NO.	DESCRIPTION	VALUE		REFERENCE DESIGNATORS
040-027-00	CABLE ASSY, METER BRIDGE			J13
100-057-00	RESISTOR CF	2K2	5%	R1 R5 R13-14
100-073-00	RESISTOR CF	10K	5%	R6-7 R18-19
100-080-00	RESISTOR CF	20K	5%	R17 R20 R22-23
100-089-00	RESISTOR CF	47K	5%	R2 R12 R15-16
100-104-00	RESISTOR CF	200K	5%	R3
100-109-00	RESISTOR CF	1M	5%	R4
110-001-00	RESISTOR CF	10	5%	R8-9
110-064-00	RESISTOR CF	4K3	5%	R10-11
111-017-00	RESISTOR CF	4.7	5%	R25
130-015-00	RESISTOR POT TRIM HORIZ	50KB		R21 R24
211-001-00	CAPACITOR CERAMIC	0.01	10%	C3-4 C8-11
211-002-00	CAPACITOR CERAMIC AXIAL	100 PF	10%	C13 C15
220-001-02	CAP LYTIC RADIAL TAPE	22UF	10%	C14 C16
220-010-02	CAP LYTIC RADIAL KS TAPE	22UF	10%	C6-7
220-014-02	CAPACITOR LYTIC RADIAL TAPE	2.2UF	10%	C1-2 C5 C12
300-002-00	DIODE	1N34A		D3-10
304-001-00	DIODE LED T1	RED		D1-2
320-001-00	I.C. LINEAR	NJM 4560		U2-3
325-002-00	IC, 14093 CMOS NAND GATE X4			U1
400-067-00	PIN RECEPTACLE			E1-3
450-022-00	PCB, ANALOG METER BD			Z1
500-003-00	SWITCH MOM TL1105/SP	SPST		SW1
550-128-00	VU PLATE			Z15
609-001-00	WIRE, 26 AWG RED 3.5 IN			Z5-6
609-002-00	WIRE, 26 AWG BLK 3 IN			Z4 Z10
609-003-00	WIRE, 26 AWG GRN 4 IN ST2	.25		Z7 Z9
609-004-00	WIRE, 26 AWG BLUE 4.5 IN ST2	0.25		Z8 Z11
700-011-00	SCREW, BTN HD 4-40X1/4			Z16-17 Z19-22
706-020-00	SPACER, LED .160 THRU			Z2 Z12
706-030-00	STANDOFF, SWAGE 4-40			Z23-28
720-004-00	TAPE, DS, .125 X .75W, NEO			Z29
770-002-00	METER, YS-475			Z3 Z13
780-010-00	REFLECTOR, VU METER			Z14 Z18

990-023-00 REV F, LED Meter board

PART NO.	DESCRIPTION	VALUE	REFERENCE DESIGNATORS
040-027-00	CABLE ASSY, METER BRIDGE		J12
140-051-00	RESISTOR CF	120 5%	R101 R104-108 R201 R204-208 R301 R304-308 R401 R404-408
140-076-00	RESISTOR CF	1K3 5%	R110-113 R210-213 R310-313 R410-413
140-094-00	RESISTOR CF	7K5 5%	R114-115 R214-215 R314-315 R414-415
140-097-00	RESISTOR CF	10K 5%	R117-122 R124-129 R217-222 R224-229 R317-322 R324-329 R417-422 R424-429
140-101-00	RESISTOR CF	15K 5%	R102 R109 R202 R209 R302 R309 R402 R409
140-104-00	RESISTOR CF	20K 5%	R116 R123 R216 R223 R316 R323 R416 R423
140-112-00	RESISTOR CF	39K 5%	R103 R203 R303 R403
212-001-00	CAPACITOR CERAMIC	0.01 5%	C5 C101 C103 C112-113 C201 C203 C212-213 C301 C303 C312-313 C401 C403 C412-413
212-005-00	CAPACITOR CERAMIC	20PF 5%	C114-115 C214-215 C314-315 C414-415
221-001-00	CAPACITOR LYTIC AXIAL	470UF 10%	C1-2
223-001-00	CAPACITOR LYTIC SMT	2.2UF 20%	C106-111 C206-211 C306-311 C406-411
223-003-00	CAPACITOR LYTIC SMT	22UF 20%	C102 C104-105 C202 C204-205 C302 C304-305 C402 C404-405
304-008-00	DIODE LED RECT	YEL	D101-104 D113-116 D201-204 D213-216 D301-304 D313-316 D401-404 D413-416
304-009-00	DIODE LED RECT	GRN	D105-112 D117-124 D205-212 D217-224 D305-312 D317-324 D405-412 D417-424
311-002-00	X-SISTOR PNP	IMBT4403	Q101-104 Q201-204 Q301-304 Q401-404
311-003-00	TRANSISTOR NPN	2SC4695	Q105-108 Q205-208 Q305-308 Q405-408
320-004-00	I.C. LINEAR	NJM 4560	U102 U202 U302 U402
324-002-00	I.C. METER DR.	BA6820F	U101 U201 U301 U401
400-067-00	PIN RECEPTACLE		E1-8
450-023-00	PCB, LED METER BD.		Z1
706-021-00	SPACER, RUBBER LED MTR BR		Z3 Z5 Z7 Z9 Z11 Z13 Z15 Z17
760-032-00	BEZEL, LED		Z2 Z4 Z6 Z8 Z10 Z12 Z14 Z16

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8•BUS EQ FAILURES

Model: 8*Bus, all

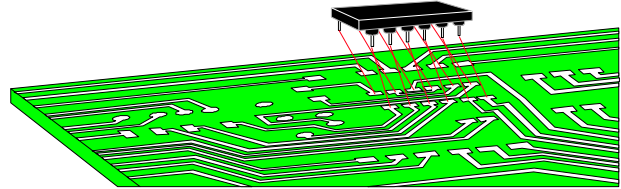
Symptom: EQ failures, dead, noisy, intermittent, etc..., channel functions normally when EQ and HPF are bypassed.

Cause: Faulty EQ module or cold solder joints on EQ module. May also be due to a bad connection or component in the circuitry supporting the EQ module, but more often than not it's the module itself.

Fix: First, inspect the solder joints on the EQ daughter board and supporting components. If problem persists, replace the EQ daughter board, part #055-016-00.

Notes: EQ daughter board uses all surface mount components, much easier to replace than repair.

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8•BUS METER FLICKER / CROSSTALK

Model: 8*bus, all.

Symptom: When a level is displayed on any of the bar graph meters, other meters flicker or indicate a small level with no signal present on their associated bus. May be intermittent.

Cause: Bad digital ground connection. Usually in the 5V cable or its connectors.

Solution: Remove the molex connectors, solder the 5V cable's leads directly to the PCB on both ends, and jump pins 1 and 3 of the 5 volt cable together on the master PCB. (This is the 3 conductor cable that runs from the power distribution PCB to the output (master) PCB.)

Notes: 5V cable part # 040-025-00. Global problems with the solo, mute, and metering functions can also be related to this cable.



METER BRIDGE ANALOG METER REPLACEMENT

1. Remove right end cap
IMPORTANT: Do Not remove left end cap, removing the left end cap can cause alignment problems when re-assembling.
2. remove source select button.
3. Carefully slide out face plate.
4. Remove jumpers connecting analog meter PCB to bar graph PCB.
5. Remove rubber ring from cable.
6. Push ribbon cable through back of meter bridge housing.
7. Carefully slide out analog meter PCB.

Before installing the new analog meter PCB, affix the provided white plastic insulator to back of the meter bridge housing so it will keep the meter terminals from shorting. Also, apply the black foam rubber tape to the front-inside edge of the end cap so that it presses against both the PCB and the face plate when re-assembled.

Installation is the reverse of removal except for calibration.

Mechanical Calibration (-∞dB)

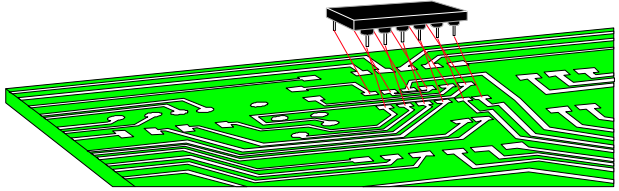
Before putting on face plate, stand meter bridge in an upright position as it would be in use and adjust each meters mechanical zero if necessary.

Electronic Calibration

The meters sensitivity trim pots are set at the factory and should not require adjustment. However, if needed, they can be adjusted as follows:

1. Install meter bridge onto mixer with its face plate removed.
2. Check mechanical calibration.
3. Run a +4dB, 1kHz signal to the main outs, measure it with an audio analyzer or DMM (+4dBu=1.23 VAC RMS), Do not go by the bar graphs!
4. Adjust trim pots so that meters read 0dB.

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Funny little things the 8•Bus does and what causes them.

Some miscellaneous failure modes not covered in previous Mixer Fixer notes.

Channel overload light comes on with no signal, channel passes signal normally except for distortion with high level signals. May only happen after mixer heats up.

1. Check R_74 (pull down resistor for op-amp following fader) it probably only has 1 leg inserted, or it may have a cap stuffed in its place.
2. If R_74 is not properly installed another 15K resistor can be installed from the back of the PCB.

Subgroup 4 goes out when a plug is inserted into tape out 4, 12, or 20.

- Solder bridge on tape out pcb.
- Check the vias adjacent to the ribbon connectors on the tape out PCB.

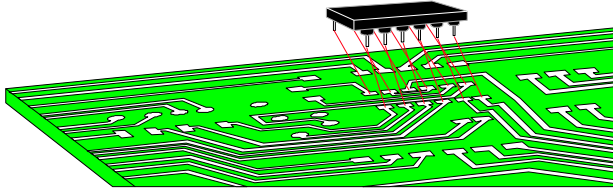
Noisy Mic/Line preamp

- More often than not caused by the 4148 calmping diodes.

Mute switch pops on console with meter bridge installed.

-If the pop goes away when the meter bridge is disconnected the problem is a solder bridge on the bargraph meter PCB causing DC to leak into the channel via the meter feed (same path as the direct out).

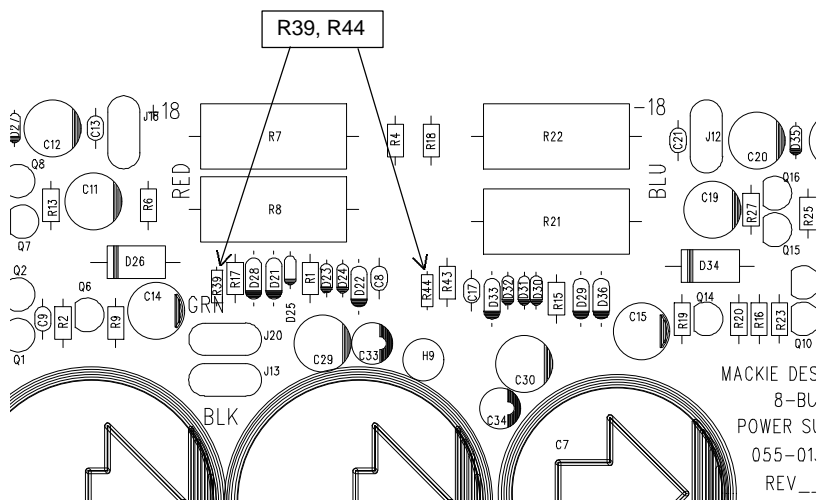
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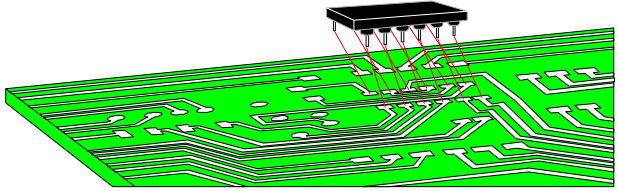
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32•8 NOT POWERING UP CORRECTLY

- Model:** 8•Bus Power Supply and console, usually 32•8 with meter bridge.
- Serial #:** Power Supply serial G27894 - G29655.
- Symptom:** All overload lights come on and stay on upon power up. If the Power Supply is switched off for a second then back on the console functions normally.
- Cause:** New revision Power Supply's current limiting is more sensitive. The inrush of current drawn by a cold power up can cause it to latch the +18V rail at or near ground.
- Solution:** Remove R39 and R44.
- Notes:** R34, R44 = 6.81k, changed to 10K on units with serial above G29655.



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8•BUS REMOTE TALKBACK MODIFICATION

The diagram below illustrates the easiest way to add remote controllable relay to the studio/phones talkback switch without interfering with the original switch. This modification can be performed entirely from the back of the master PCB and does not require removing the PCB.

Notes: Simply paralleling a switch across the back of the existing switch will not work because the existing switch holds the T/B-to-studio/phones input at ground until pressed.

The console's +12VDC lamp supply can be used to drive the relay.

