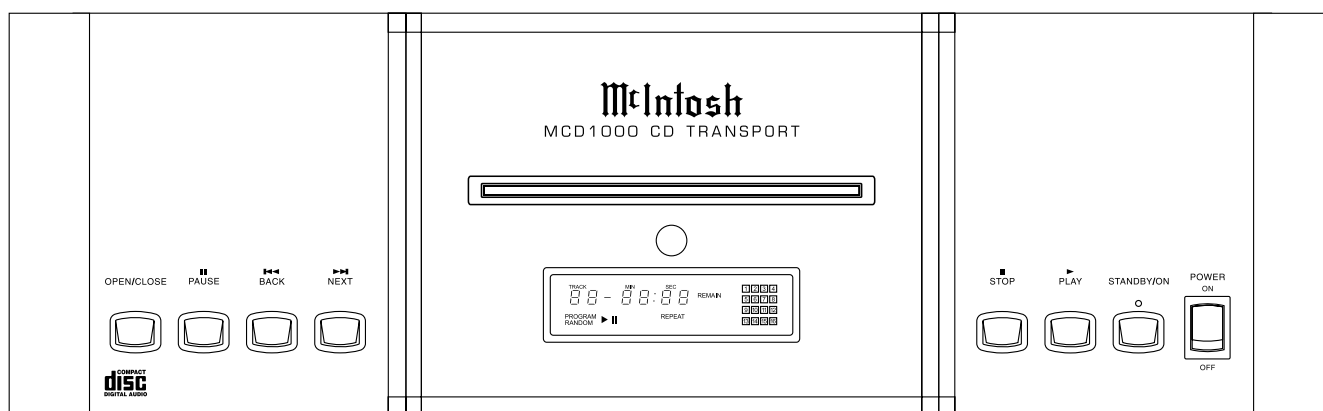




# MCD1000

## CD TRANSPORT



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# McIntosh®

## SERVICE MANUAL

# PERFORMANCE SPECIFICATIONS

## Digital Audio Format

IEC958, S/PDIF

## Digital Outputs

Optical: -15 ~ -20dBm

Coaxial: 0.5V p-p @ 75ohms

XRL: 5V p-p @ 110ohms (AES/EBU)

## Transport

Pickup: Optical 3-beam laser

Objective Lens Drive System: 2-Dimensional parallel

Laser Type: GaAIAs semiconductor

Laser Beam Wavelength: 780nm

## Digital Signal Format

Sampling Frequency: 44.1kHz

Quantization Bit: 16-bit linear/channel

Modulation Code: Eight to Fourteen Modulation

Error Correction: Cross Interleave Reed Solomon

## Power Requirements

100 Volts, 50/60Hz at 20 watts

110 Volts, 50/60Hz at 20 watts

120 Volts, 50/60Hz at 20 watts

220 Volts, 50/60Hz at 20 watts

230 Volts, 50/60Hz at 20 watts

240 Volts, 50/60Hz at 20 watts

*Note: Refer to the rear panel of the MCD1000 for the correct voltage.*


## Dimensions

Front Panel: 17-1/2 inches (44.5cm) wide, 6 inches (15.24cm) high (including feet). Depth is 16-1/8 inches (40.96cm) including the Front Panel and knobs.

## Weight

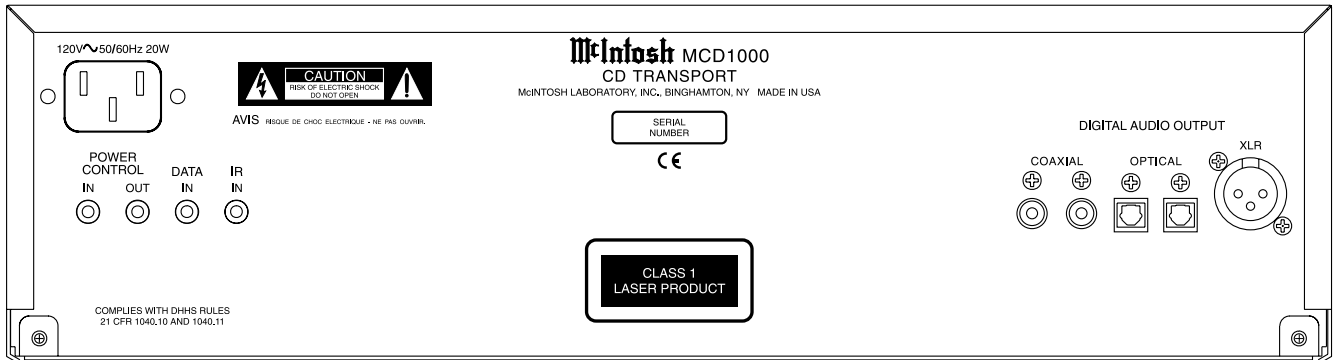
27.5 pounds (12.47g) net, 41.5 pounds (18.83kg) in shipping carton

# NOTES

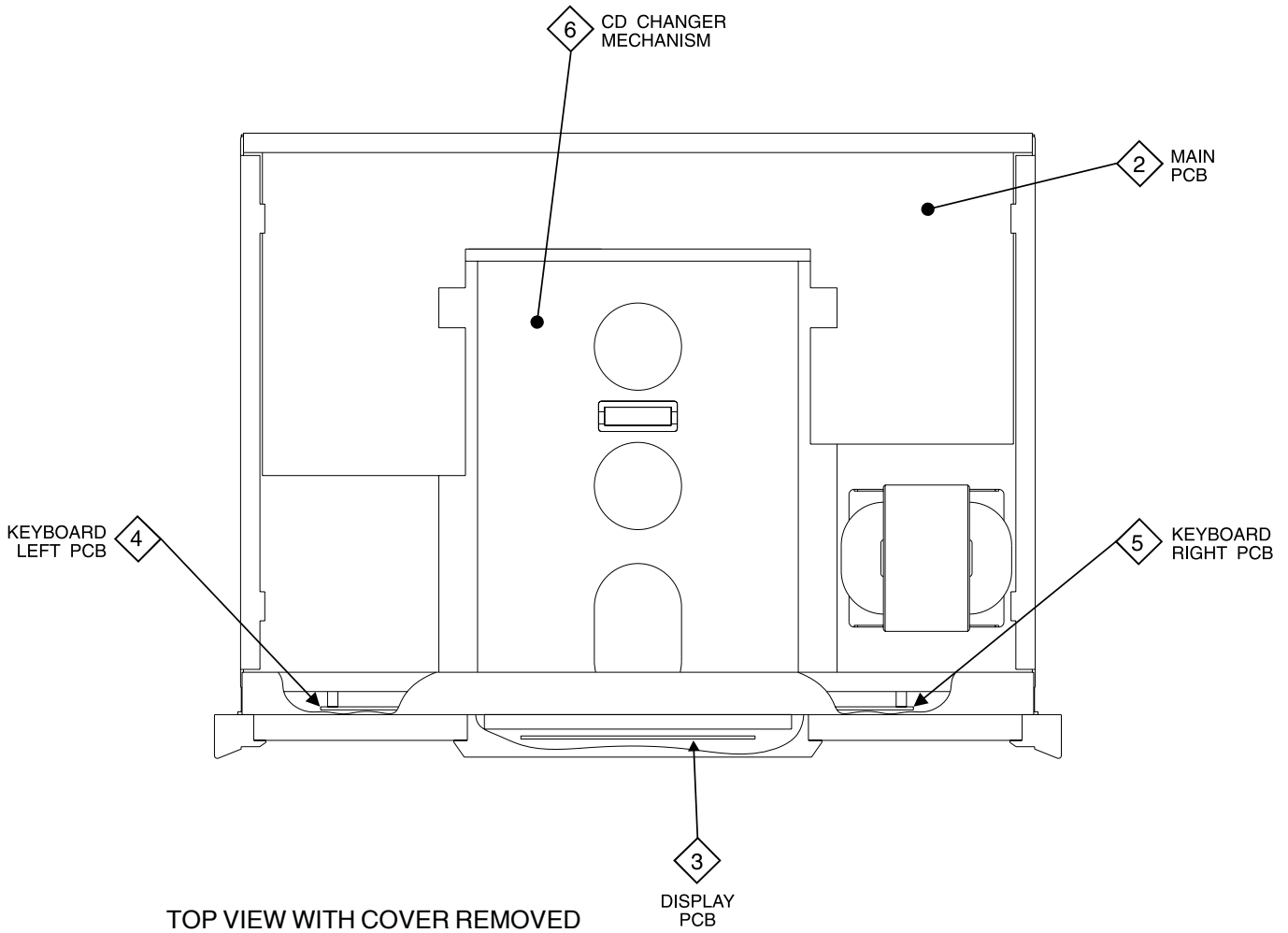
1. The heavy notes on the schematic denote the primary signal path.
2. Unless otherwise noted, all voltages indicated on the schematics are measured under the following conditions:
  - a. AC input at 120 volts, 50/60Hz.
  - b. All voltages are +/-10% with respect to ground. A high impedance (10 megaohm) voltmeter must be used.
3. Unless otherwise specified:
  - a. Resistor values are in ohms.
  - b. Capacitor values are microfarads (uF).
  - c. Inductor values are in microhenries (uH).
4. On PC board drawings, Square pad indicates:
  - a. Polarized Capacitors - Positive
  - b. Diodes - Cathode
  - c. Others - Pin 1
5. **WARNING**  
Parts marked with the symbol  have critical characteristics. Use only replacement parts recommended by the manufacturer.

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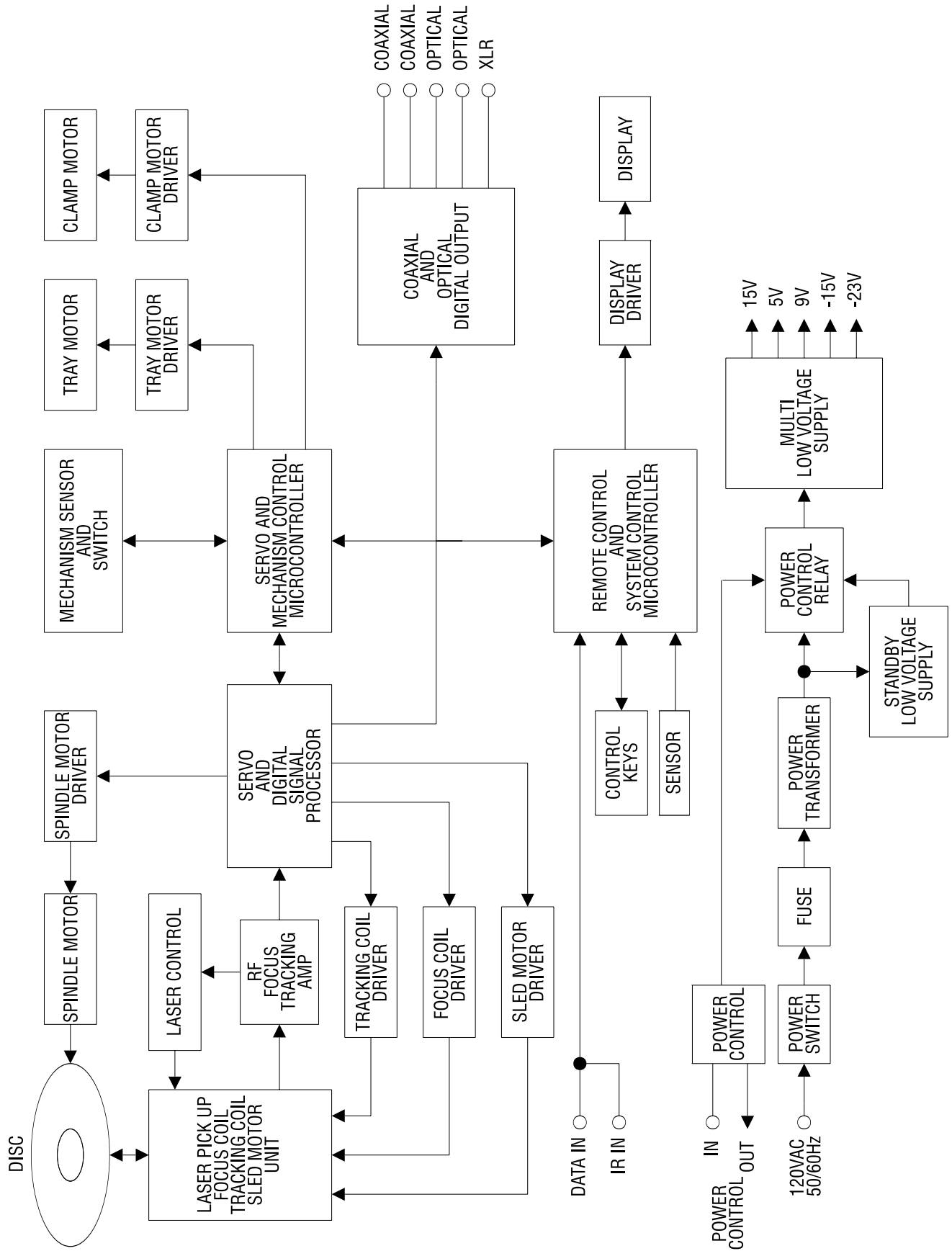
# REAR VIEW



# SECTION LOCATION

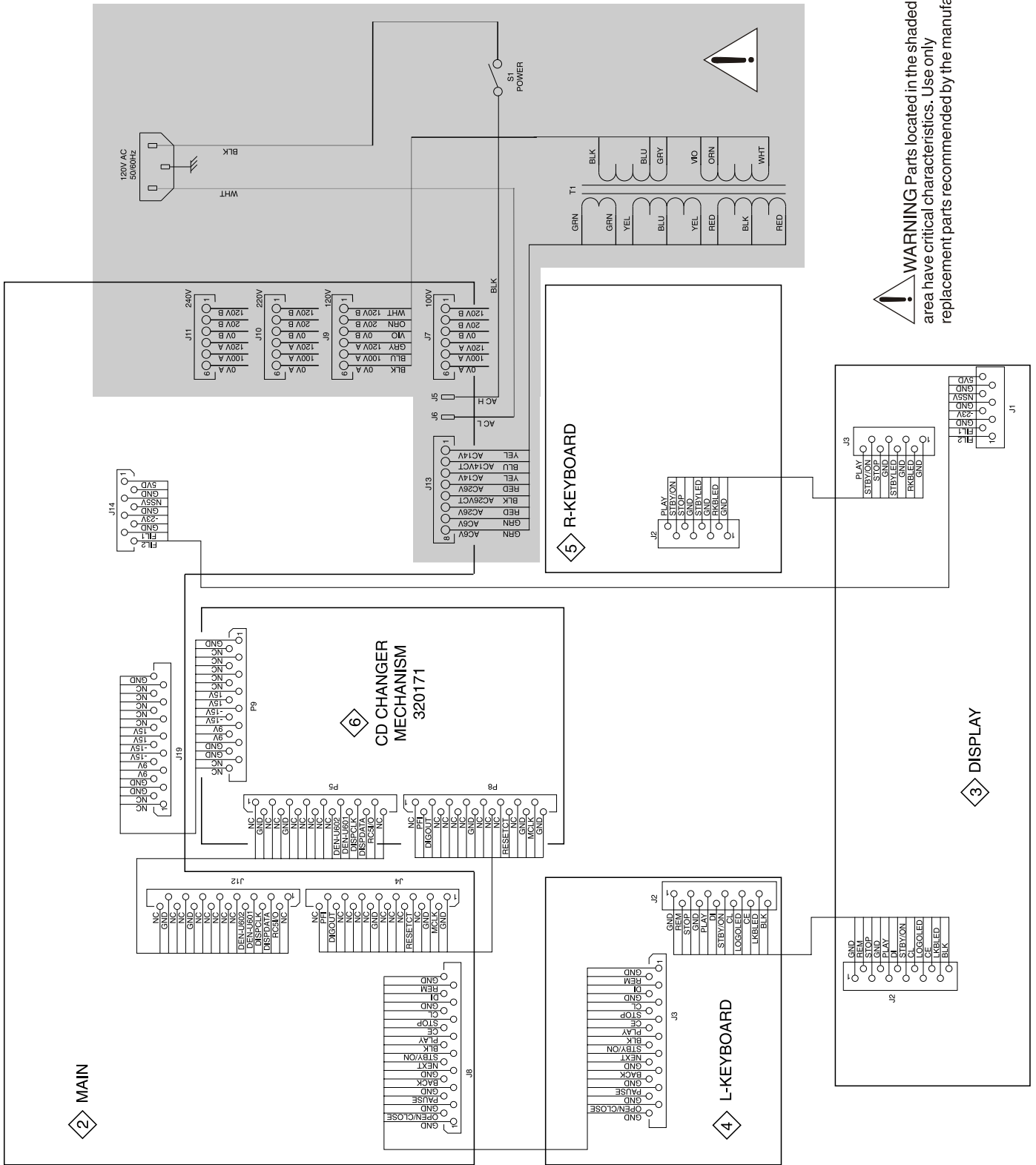


# BLOCK DIAGRAM



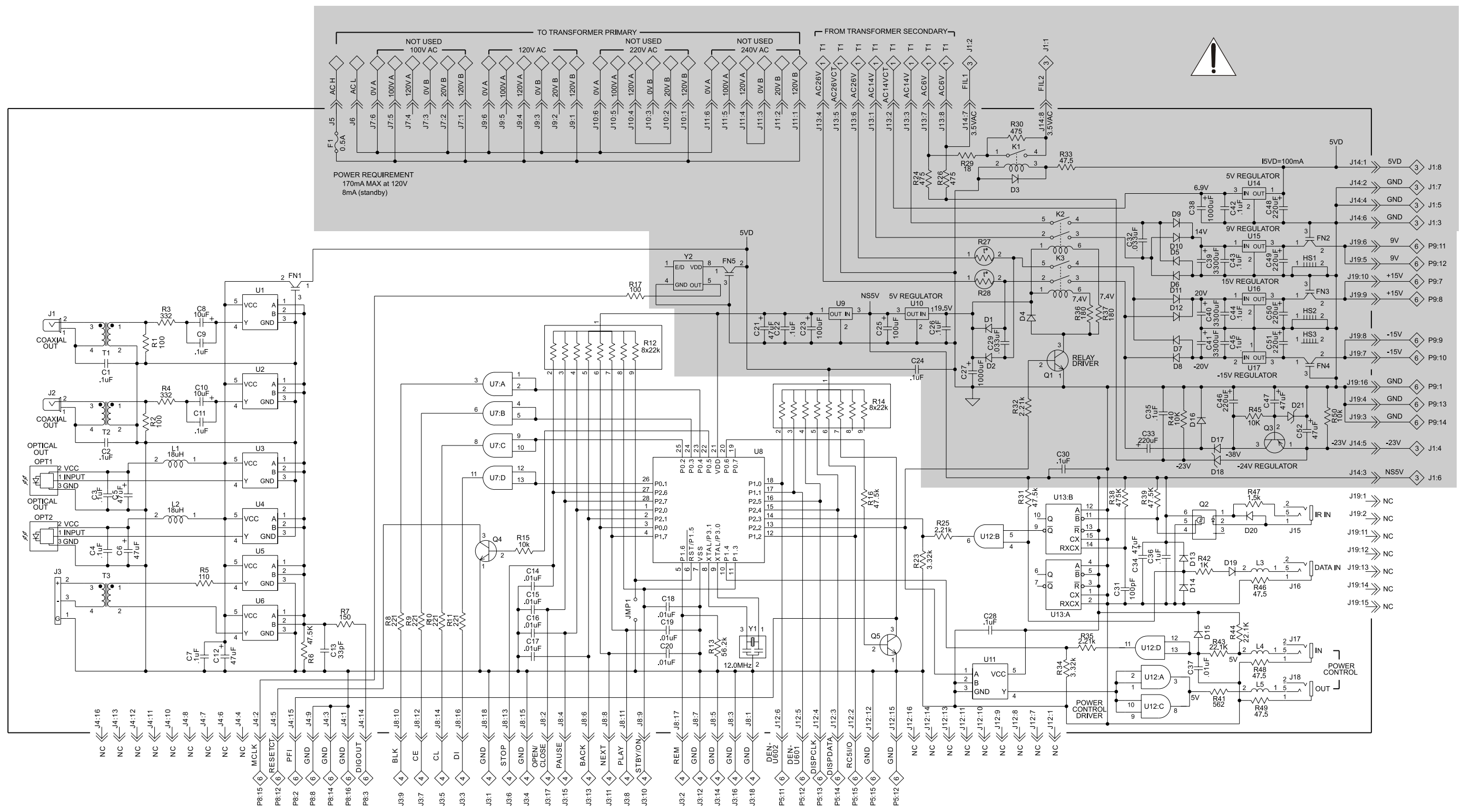
1

# INTERCONNECT



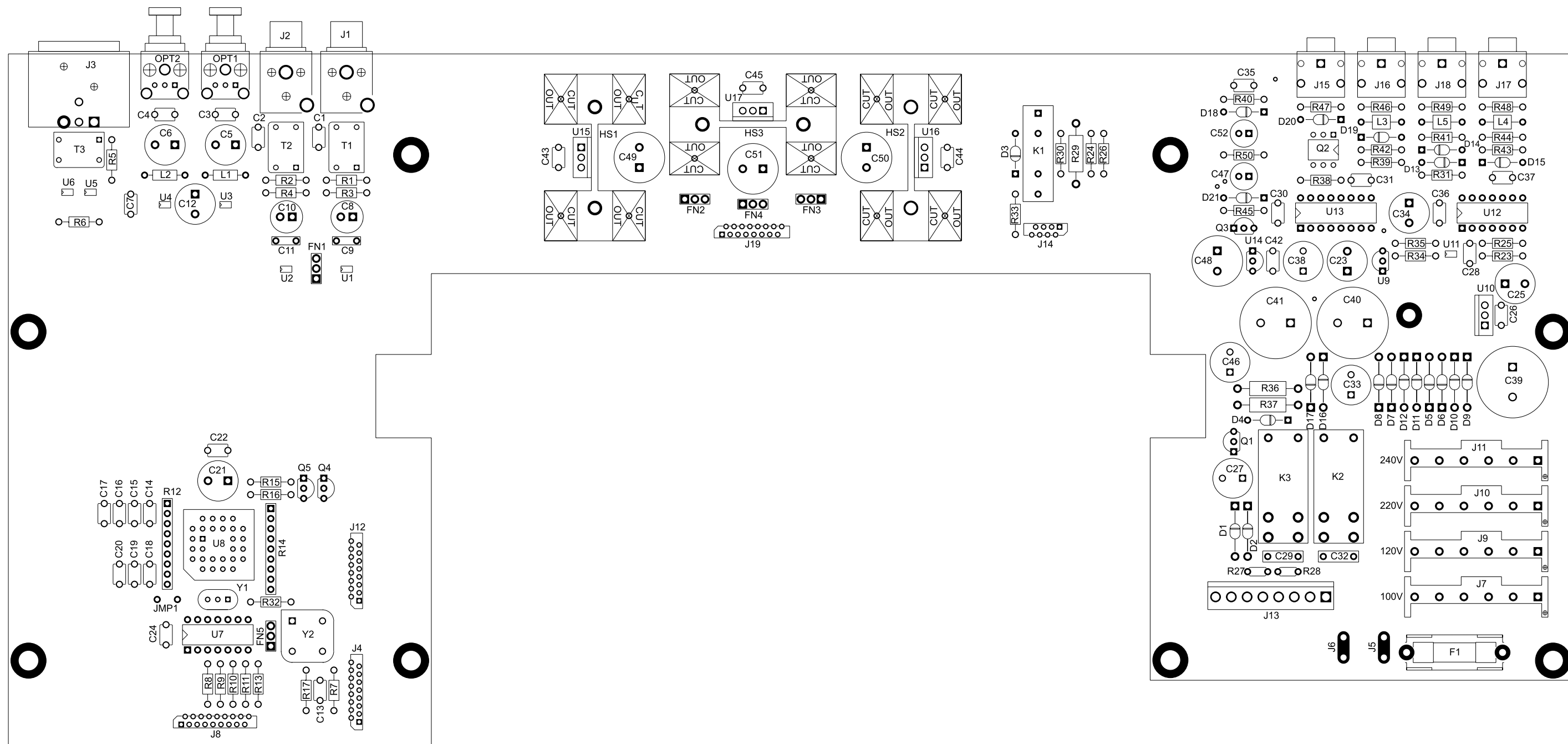
# *NOTES*

WARNING Parts located in the shaded area have critical characteristics. Use only replacement parts recommended by the manufacturer.



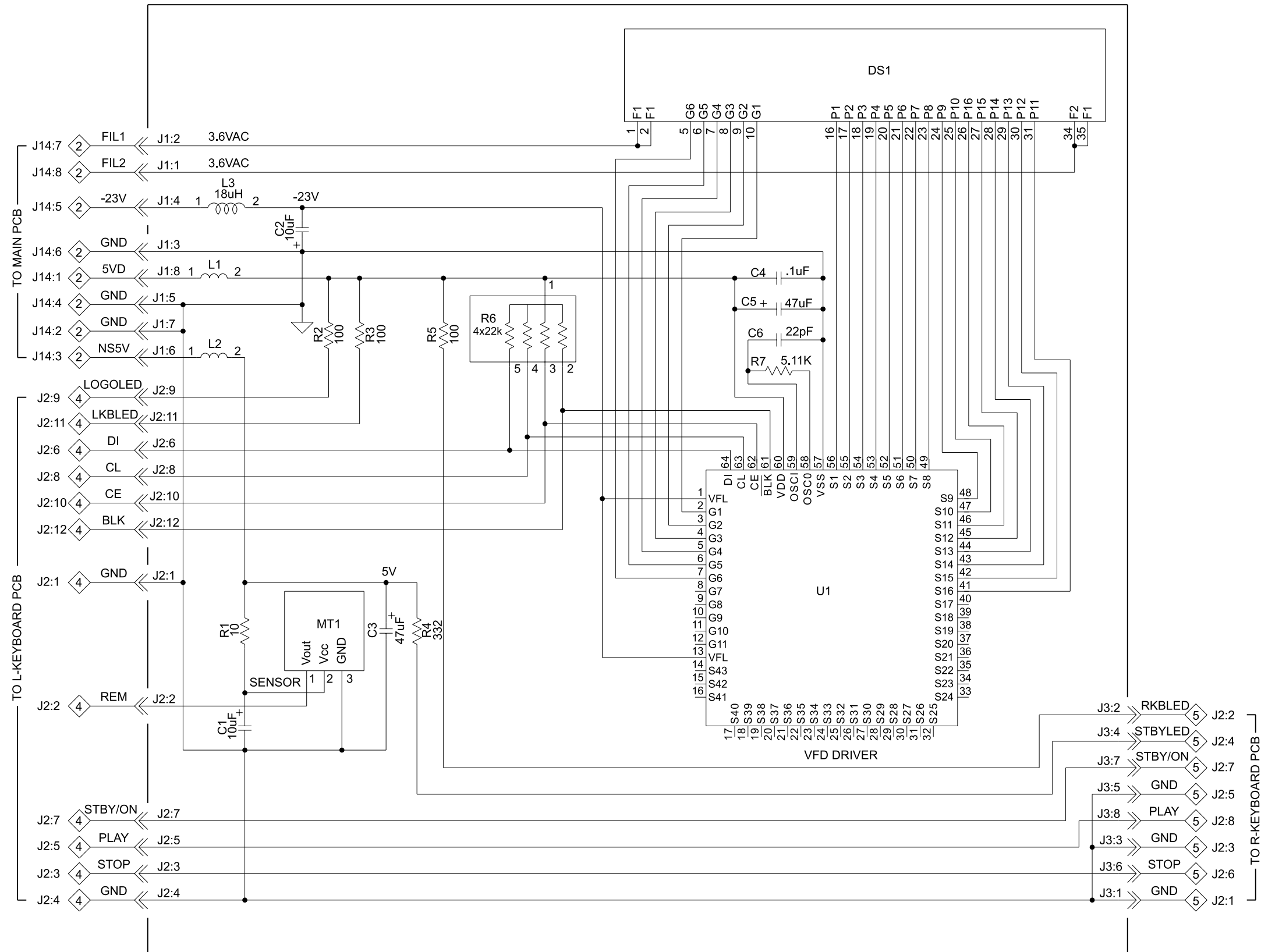
POWER REQUIREMENT  
170mA MAX at 120V  
8mA (standby)

**2** MAIN 050017

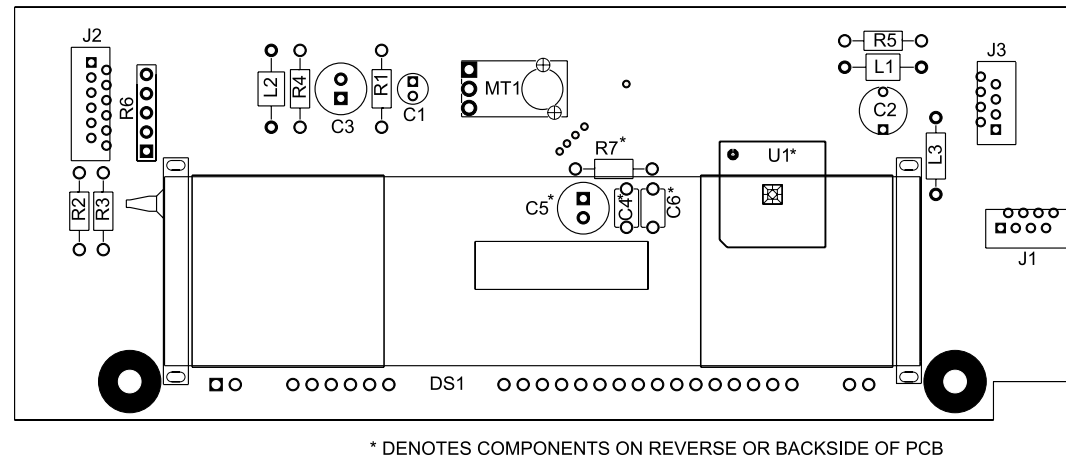




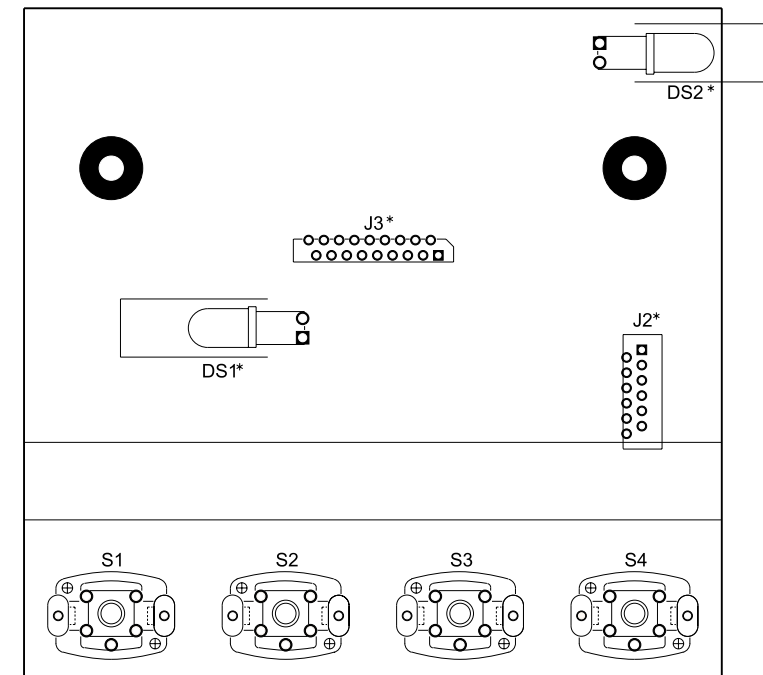
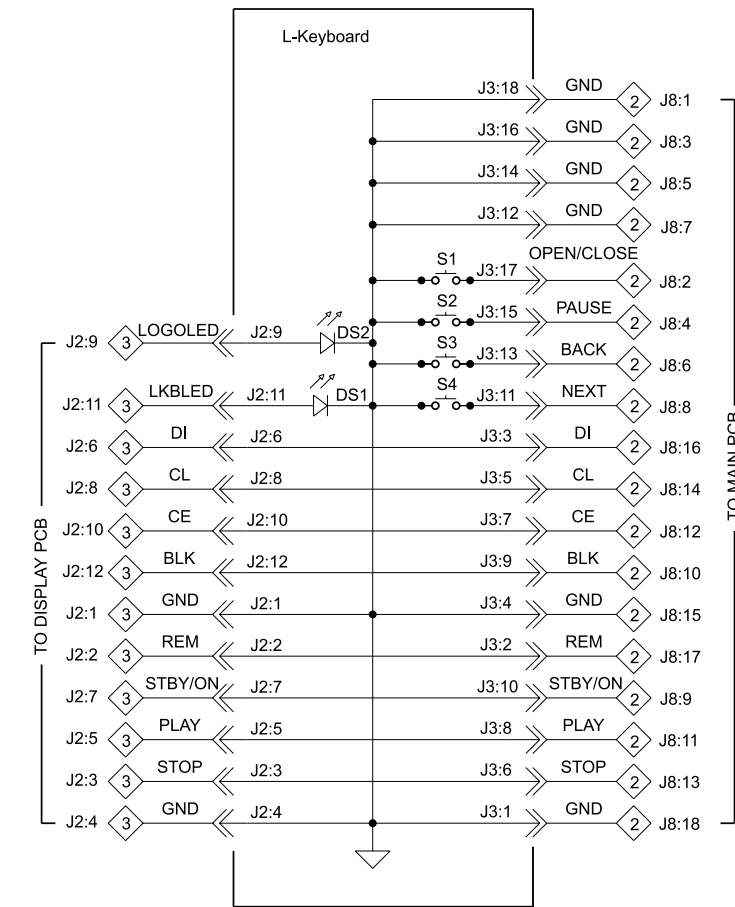
3 DISPLAY 050018



### 3 DISPLAY 050018



### 4 L-KEYBOARD 050019

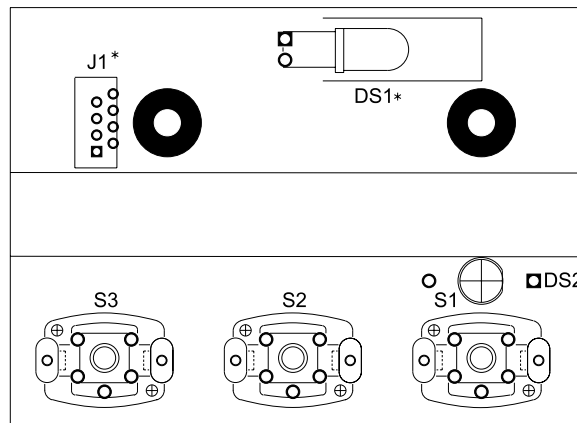
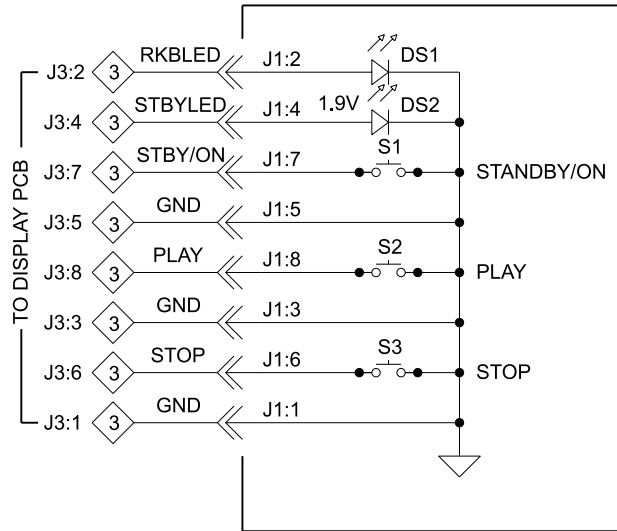


\* DENOTES COMPONENTS ON REVERSE OR BACKSIDE OF PCB

5

R-KEYBOARD 050020

R-Keyboard



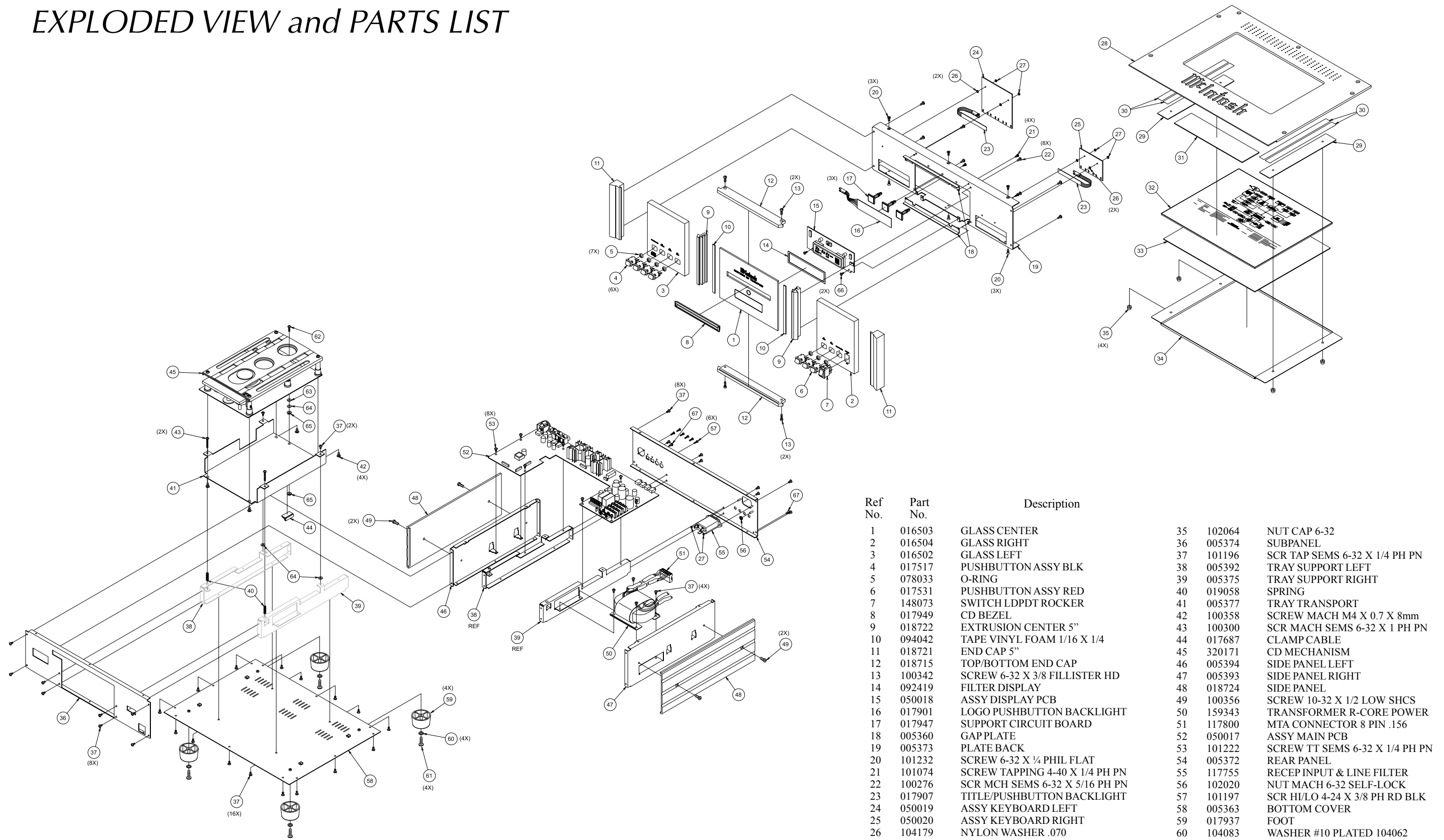
\* DENOTES COMPONENTS ON BACK OR FARSIDE OF PCB

# *NOTES*

## PARTS LIST

Ref. No.	Description	Part No.									
①	<b>050017 MAIN PCB</b>										
C1	CAP MONO .1uF 50V 20% Z5U	061305	D2	DIODE RECTIFIER	070131	Q2	COUPLER OPTICAL SCHMITT OUTPUT	131023	U8	PROGRAMMED VERSION OF 133495	133520
C2	CAP MONO .1uF 50V 20% Z5U	061305	D3	DIODE SILICON	070047	Q3	TRANSISTOR PNP SILICON	132172	U9	REGULATOR 3.3V LOW DROP	133464
C3	CAP MONO .1uF 50V 20% Z5U	061305	D4	DIODE SILICON	070047	Q4	TRANSISTOR NPN	132223	U10	IC REGULATOR 5V	133250
C4	CAP MONO .1uF 50V 20% Z5U	061305	D5	DIODE RECTIFIER	070131	Q5	TRANSISTOR NPN	132223	U11	SINGLE 2-INPUT OR GATE	133516
C5	CAP ELECT 47UF 25V	066413	D6	DIODE RECTIFIER	070131	R1	RES MF 100 OHM 1% 1/4W	144196	U12	IC AND 2 INPUT X 4	133175
C6	CAP ELECT 47UF 25V	066413	D7	DIODE RECTIFIER	070131	R2	RES MF 100 OHM 1% 1/4W	144196	U13	IC MONOSTB MULTIVIB X 2	133182
C7	CAP MONO .1uF 50V 20% Z5U	061305	D8	DIODE RECTIFIER	070131	R3	RES MF 332 OHM 1% 1/4W	144446	U14	REGULATOR 5V LOW DROP	133452
C8	CAP ELECT 10UF 100VDC	066411	D9	DIODE RECTIFIER	070131	R4	RES MF 332 OHM 1% 1/4W	144446	U15	REGULATOR VOLTAGE 9V 1.5A	133340
C9	CAP MPF 0.1UF 5% 63VDC	064325	D10	DIODE RECTIFIER	070131	R5	RES MF 110 OHM 1% 1/4W	144489	U16	15V LOW DROPOUT REGULATOR	133515
C10	CAP ELECT 10UF 100VDC	066411	D11	DIODE RECTIFIER	070131	R6	RES MF 47.5K 1% 1/4W	144108	U17	-15V LOW DROPOUT REGULATOR	133514
C11	CAP MPF 0.1UF 5% 63VDC	064325	D12	DIODE RECTIFIER	070131	R7	RES MF 150 OHM 1% 1/4W	144122	Y1	RESONATOR CERAM 12.0MHZ W/CAP	180059
C12	CAP ELECT 47UF 25V	066413	D13	DIODE SILICON	070047	R8	RES MF 221 OHM 1% 1/4W	144172	Y2	CRYSTAL OSCILLATOR 16.9344MHZ	180063
C13	CAP MONO 33PF 200V 5%NPO T&R	061307	D14	DIODE SILICON	070047	R9	RES MF 221 OHM 1% 1/4W	144172			
C14	CAP MONO .01UF 50V 20% X7R	061304	D15	DIODE SILICON	070047	R10	RES MF 221 OHM 1% 1/4W	144172	③	<b>050018 DISPLAY PCB</b>	
C15	CAP MONO .01UF 50V 20% X7R	061304	D16	DIODE RECTIFIER	070131	R11	RES MF 221 OHM 1% 1/4W	144172	C1	CAP ELECT 10UF 16V 4X5 CASE	066382
C16	CAP MONO .01UF 50V 20% X7R	061304	D17	DIODE RECTIFIER	070131	R12	RES NETWORK 9X-1-223	144238	C2	CAP ELECT 10UF 50V LOW ESR	066437
C17	CAP MONO .01UF 50V 20% X7R	061304	D18	DIODE ZENER 6.2V 5% 500MW	070085	R13	RES MF 56.2K 1% 1/4W	144402	C3	CAP ELECT 47UF 16V 6.3X5 CASE	066380
C18	CAP MONO .01UF 50V 20% X7R	061304	D19	DIODE SILICON	070047	R14	RES NETWORK 9X-1-223	144238	C4	CAP MONO .1uF 50V 20% Z5U	061305
C19	CAP MONO .01UF 50V 20% X7R	061304	D20	DIODE SILICON	070047	R15	RES MF 10K 1% 1/4W	144053	C5	CAP ELECT 47UF 16V 6.3X5 CASE	066380
C20	CAP MONO .01UF 50V 20% X7R	061304	D21	DIODE ZENER 24V	070091	R16	RES MF 47.5K 1% 1/4W	144108	C6	CAP MONO 22PF 200V 10% NPO	061298
C21	CAP ELECT 47UF 25V	066413	F1	0.5A 5x20 fuse IEC	089092	R17	RES MF 100 OHM 1% 1/4W	144196	DS1	VACUUM FLUORESCENT DISPLAY	058160
C22	CAP MONO .1uF 50V 20% Z5U	061305	FN1	FILTER EMI	180057	R23	RES MF 3.32K 1% 1/4W	144095	J1	FFC CONNECTOR 8PIN RA	117837
C23	CAP ELECT 100UF 25V	066412	FN2	FILTER EMI	180057	R24	RES MF 475 OHM 1% 1/4W	144086	J2	FFC CONNECTOR 12PIN RA	117838
C24	CAP MONO .1uF 50V 20% Z5U	061305	FN3	FILTER EMI	180057	R25	RES MF 2.21K 1% 1/4W	144298	J3	FFC CONNECTOR 8PIN RA	117837
C25	CAP ELECT 100UF 25V	066412	FN4	FILTER EMI	180057	R26	RES MF 475 OHM 1% 1/4W	144086	L1	BEADS FERRITE LEADED	076019
C26	CAP MONO .1uF 50V 20% Z5U	061305	FN5	FILTER EMI	180057	R27	PTC RESETTABLE FUSE	144488	L2	BEADS FERRITE LEADED	076019
C27	CAP ELECT 1000UF 25V	066513	HS1	HEATSINK TO-220	080017	R28	PTC RESETTABLE FUSE	144488	L3	CHOKE 18uH 5%-10%	122224
C28	CAP MONO .1uF 50V 20% Z5U	061305	HS2	HEATSINK TO-220	080017	R29	RES CF 18 OHM 5% 1/2W	141206	MT1	SENSOR IR 38KHZ	121046
C29	CAP MPF 0.033UF 100V 10%	064427	HS3	HEATSINK TO-220	080017	R30	RES MF 475 OHM 1% 1/4W	144086	R1	RES MF 10 OHM 1% 1/4W	144157
C30	CAP MONO .1uF 50V 20% Z5U	061305	J1	JACK RCA ORANGE WITH GOLD	117798	R31	RES MF 47.5K 1% 1/4W	144108	R2	RES MF 100 OHM 1% 1/4W	144196
C31	CAP MONO 100PF 100V 10% NPO	061300	J2	JACK RCA ORANGE WITH GOLD	117798	R32	RES MF 2.21K 1% 1/4W	144298	R3	RES MF 100 OHM 1% 1/4W	144196
C32	CAP MPF 0.033UF 100V 10%	064427	J3	RECEPTACLE XLR MALE	117686	R33	RES MF 47.5 OHM 1% 1/4W	144442	R4	RES MF 332 OHM 1% 1/4W	144446
C33	CAP ELECT 220UF 50V 20%	066254	J4	FFC CONNECTOR 16PIN	117839	R34	RES MF 3.32K 1% 1/4W	144095	R5	RES MF 100 OHM 1% 1/4W	144196
C34	CAP ELECT 47UF 25V	066413	J5	BLADE FASTON W/FEET	117708	R35	RES MF 2.21K 1% 1/4W	144298	R6	RES NETWORK 4 X 22K BUS	144234
C35	CAP MONO .1uF 50V 20% Z5U	061305	J6	BLADE FASTON W/FEET	117708	R36	RES CF 180 OHM 5% 1/2W	141173	R7	RES MF 5.11K 1% 1/4W	144083
C36	CAP MONO .1uF 50V 20% Z5U	061305	J7	CONN PCB MOUNT POWER RED	117719	R37	RES CF 180 OHM 5% 1/2W	141173	U1	VFD DRIVER	133442
C37	CAP MONO .01UF 50V 20% X7R	061304	J8	CONN FFC 18PIN	117765	R38	RES MF 475K 1% 1/4W	144364			
C38	CAP ELECT 1000UF 25V	066513	J9	CONN PCB MOUNT POWER RED	117719	R39	RES MF 47.5K 1% 1/4W	144108	④	<b>050019 L-KEYBOARD PCB</b>	
C39	CAP ELECT 3300UF 35V	066509	J10	CONN PCB MOUNT POWER RED	117719	R40	RES MF 10K 1% 1/4W	144053	DS1	LED GREEN 5MM HI-INT VF[V] 3.5	058165
C40	CAP ELECT 3300UF 35V	066509	J11	CONN PCB MOUNT POWER RED	117719	R41	RES MF 562 OHM 1% 1/4W	144408	DS2	LED GREEN 5MM HI-INT VF[V] 3.5	058165
C41	CAP ELECT 3300UF 35V	066509	J12	FFC CONNECTOR 16PIN	117839	R42	RES MF 1K 1% 1/4W	144090	J2	FFC CONNECTOR 12PIN RA	117838
C42	CAP MONO .1uF 50V 20% Z5U	061305	J13	HEADER 8 PIN MTA-156	117717	R43	RES MF 22.1K 1% 1/4W	144187	J3	CONN FFC 18PIN	117765
C43	CAP MONO .1uF 50V 20% Z5U	061305	J14	FFC CONNECTOR 8PIN	117842	R44	RES MF 22.1K 1% 1/4W	144187	S1	SWITCH PB TACT	150058
C44	CAP MONO .1uF 50V 20% Z5U	061305	J15	JACK HEADPHONE STEREO 1/8IN	117759	R45	RES MF 10K 1% 1/4W	144053	S2	SWITCH PB TACT	150058
C45	CAP MONO .1uF 50V 20% Z5U	061305	J16	JACK HEADPHONE STEREO 1/8IN	117759	R46	RES MF 47.5 OHM 1% 1/4W	144442	S3	SWITCH PB TACT	150058
C46	CAP ELECT 220UF 50V 20%	066254	J17	JACK HEADPHONE STEREO 1/8IN	117759	R47	RES MF 1.5K 1% 1/4W	144128	S4	SWITCH PB TACT	150058
C47	CAP ELECT 47UF 50V	066215	J18	JACK HEADPHONE STEREO 1/8IN	117759	R48	RES MF 47.5 OHM 1% 1/4W	144442			
C48	CAP ELECT 220UF 25V AUDIO	066414	J19	FFC CONNECTOR 16PIN	117839	R49	RES MF 47.5 OHM 1% 1/4W	144442	⑤	<b>050020 R-KEYBOARD PCB</b>	
C49	CAP ELECT 220UF 25V AUDIO	066414	K1	RELAY REED FORM 1A 5V 500 OHMS	087050	R50	RES MF 10K 1% 1/4W	144053	DS1	LED GREEN 5MM HI-INT VF[V] 3.5	058165
C50	CAP ELECT 220UF 25V AUDIO	066414	K2	RELAY DPST 12VDC	087059	T1	TRANSFORMER DIGITAL INTERFACE	159285	DS2	LED RED HIGH EFFICIENCY	058148
C51	CAP ELECT 220UF 25V AUDIO	066414	K3	RELAY DPST 12VDC	087059	T2	TRANSFORMER DIGITAL INTERFACE	159285	J1	FFC CONNECTOR 8PIN RA	117837
C52	CAP ELECT 47UF 50V	066215	L1	CHOKE 18uH 5%-10%	122224	T3	TRANSFORMER DIGITAL INTERFACE	159285	S1	SWITCH PB TACT	150058
D1	DIODE RECTIFIER	070131	L2	CHOKE 18uH 5%-10%	122224	U1	SINGLE 2-INPUT AND GATE	133502	S2	SWITCH PB TACT	150058
			L3	BEADS FERRITE LEADED	076019	U2	SINGLE 2-INPUT AND GATE	133502	S3	SWITCH PB TACT	150058
			L4	BEADS FERRITE LEADED	076019	U3	SINGLE 2-INPUT AND GATE	133502			
			L5	BEADS FERRITE LEADED	076019	U4	SINGLE 2-INPUT AND GATE	133502	⑥	<b>320171 CD MECHANISM MODULE</b>	
			OPT1	TRANSMITTER FIBER OPTIC	058157	U5	SINGLE 2-INPUT AND GATE	133502			
			OPT2	TRANSMITTER FIBER OPTIC	058157	U6	SINGLE 2-INPUT NAND GATE	133501			
			Q1	TRANSISTOR NPN SILICON	132171	U7	IC QUAD AND GATE	133372			

# EXPLODED VIEW and PARTS LIST



Ref No.	Part No.	Description	Ref No.	Part No.	Description
1	016503	GLASS CENTER	35	102064	NUT CAP 6-32
2	016504	GLASS RIGHT	36	005374	SUBPANEL
3	016502	GLASS LEFT	37	101196	SCR TAP SEMS 6-32 X 1/4 PH PN
4	017517	PUSHBUTTON ASSY BLK	38	005392	TRAY SUPPORT LEFT
5	078033	O-RING	39	005375	TRAY SUPPORT RIGHT
6	017531	PUSHBUTTON ASSY RED	40	019058	SPRING
7	148073	SWITCH LDPDT ROCKER	41	005377	TRAY TRANSPORT
8	017949	CD BEZEL	42	100358	SCREW MACH M4 X 0.7 X 8mm
9	018722	EXTRUSION CENTER 5"	43	100300	SCR MCH SEMS 6-32 X 1 PH PN
10	094042	TAPE VINYL FOAM 1/16 X 1/4	44	017687	CLAMP CABLE
11	018721	END CAP 5"	45	320171	CD MECHANISM
12	018715	TOP/BOTTOM END CAP	46	005394	SIDE PANEL LEFT
13	100342	SCREW 6-32 X 3/8 FILLISTER HD	47	005393	SIDE PANEL RIGHT
14	092419	FILTER DISPLAY	48	018724	SIDE PANEL
15	050018	ASSY DISPLAY PCB	49	100356	SCREW 10-32 X 1/2 LOW SHCS
16	017901	LOGO PUSHBUTTON BACKLIGHT	50	159343	TRANSFORMER R-CORE POWER
17	017947	SUPPORT CIRCUIT BOARD	51	117800	MTA CONNECTOR 8 PIN .156
18	005360	GAP PLATE	52	050017	ASSY MAIN PCB
19	005373	PLATE BACK	53	101222	SCREW TT SEMS 6-32 X 1/4 PH PN
20	101232	SCREW 6-32 X 1/4 PHIL FLAT	54	005372	REAR PANEL
21	101074	SCREW TAPPING 4-40 X 1/4 PH PN	55	117755	RECEP INPUT & LINE FILTER
22	100276	SCR MCH SEMS 6-32 X 5/16 PH PN	56	102020	NUT MACH 6-32 SELF-LOCK
23	017907	TITLE/PUSHBUTTON BACKLIGHT	57	101197	SCR HI/LO 4-24 X 3/8 PH RD BLK
24	050019	ASSY KEYBOARD LEFT	58	005363	BOTTOM COVER
25	050020	ASSY KEYBOARD RIGHT	59	017937	FOOT
26	104179	NYLON WASHER .070	60	104083	WASHER #10 PLATED 104062
27	102001	NUT KEP 4-40 CADMIUM PLATE	61	100159	SCR MCH 10-32 X 3/4 PH PN BLK
28	018723	TOP PANEL	62	100304	SCR MCH SEMS 6-32 X 1/2 PH PN
29	005364	TOP STRIP	63	104009	WASH FIBRE FLAT 6 X 3/8 X 3/64
30	094192	TAPE DOUBLE SIDED 1/2"	64	104005	WASH FLAT STEEL 6 X 3/8 X .032
31	005396	GOLD STRIP	65	102003	NUT MACH 6-32 W/LOCK
32	016505	GLASS TOP COVER	66	101057	SCREW 4-40 X 1/4 PH PN
33	094442	FOAM PAD	67	101109	SCREW 6-32 X 5/16 PH PN
34	005365	TRAY			

# REPACKING INSTRUCTION

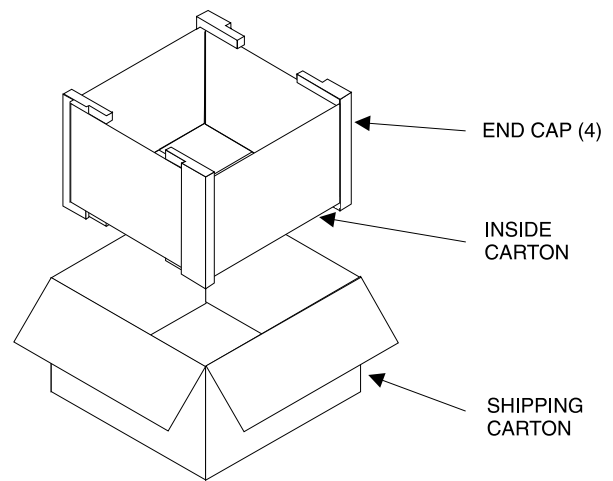
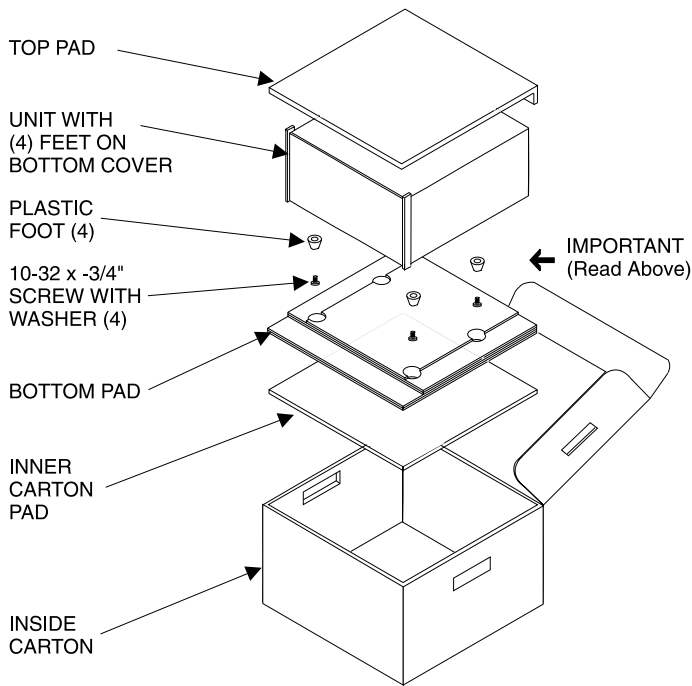
In the event it is necessary to repack the unit for shipment, the unit must be packed exactly as shown below.

*IMPORTANT - The four plastic feet must be attached to the bottom of the unit so they will locate in the four holes of the bottom pad. Failure to do this will result in shipping damage.*

If a shipping carton or any of the interior parts is needed, please call or write the Customer Service Department of McIntosh Laboratory. Order parts from the accompanying list by part number.

Use the original shipping carton and interior parts only if they are in good serviceable condition.

Qty.	Part No.	Description
1	034075	Shipping carton only
4	033837	Foam end cap
1	034076	Inside carton only
1	033726	Top pad
1	034255	Bottom pad
1	034077	Inner carton pad
4	017937	Plastic foot
4	100159	#10-32 x 3/4" Machine screw
4	104083	#10 x 7/16" Flat washer
1	049270	Shipping carton complete with all the above parts.



# MCD1000

## CD TRANSPORT SERVICE MANUAL



The continuous improvement of its products is the policy of McIntosh Laboratory Incorporated, who reserve the right to improve design without notice. Because of the constant upgrading of McIntosh products' circuitry and components, the Company cannot insure, and does not warrant, the accuracy of the within schematic material, which is intended for information only.