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CANADA**

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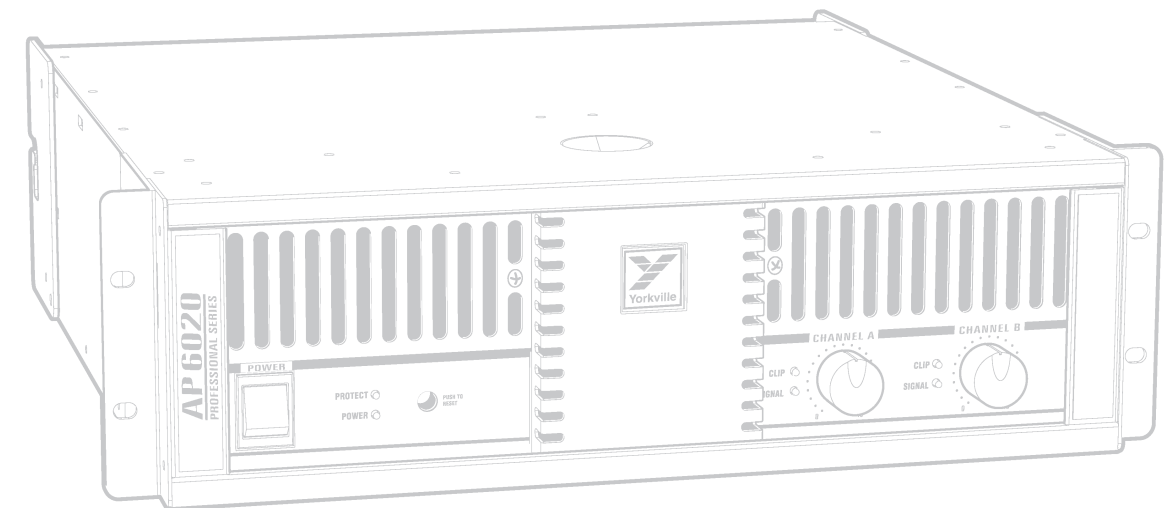
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Quality and Innovation Since 1963
Printed in Canada



AP 6020
PROFESSIONAL SERIES



MODEL TYPE: YS6020

SERVICE MANUAL

IMPORTANT SAFETY INSTRUCTIONS



INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).

NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

INSTRUCTIONS RELATIVES AU RISQUE DE FEU, CHOC ÉLECTRIQUE, OU BLESSURES AUX PERSONNES

AVIS:

AFIN DE REDUIRE LES RISQUE DE CHOC ELECTRIQUE, N'ENLEVEZ PAS LE COUVERT (OU LE PANNEAU ARRIERE)

NE CONTIENT AUCUNE PIECE REPARABLE PAR L'UTILISATEUR.

CONSULTEZ UN TECHNICIEN QUALIFIE POUR L'ENTRETIEN

Read Instructions

The Owner's Manual should be read and understood before operation of your unit. Please, save these instructions for future reference.

Packaging

Keep the box and packaging materials, in case the unit needs to be returned for service.

Warning

When using electric products, basic precautions should always be followed, including the following:

Power Sources

Your unit should be connected to a power source only of the voltage specified in the owners manual or as marked on the unit. This unit has a polarized plug. Do not use with an extension cord or receptacle unless the plug can be fully inserted. Precautions should be taken so that the grounding scheme on the unit is not defeated.

Hazards

Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious personal injury and serious damage to the product. Use only with cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Follow the manufacturer's instructions when installing the product and use mounting accessories recommended by the manufacturer.

The apparatus should not be exposed to dripping or splashing water; no objects filled with liquids should be placed on the apparatus.

Terminals marked with the "lightning bolt" are hazardous live; the external wiring connected to these terminals require installation by an instructed person or the use of ready made leads or cords.

No naked flame sources, such as lighted candles, should be placed on the apparatus.

Power Cord

The AC supply cord should be routed so that it is unlikely that it will be damaged. If the AC supply cord is damaged DO NOT OPERATE THE UNIT.

Service

The unit should be serviced only by qualified service personnel.

Veillez Lire le Manuel

Il contient des informations qui devraient être comprises avant l'opération de votre appareil. Conservez S.V.P. ces instructions pour consultations ultérieures.

Emballage

Conservez la boîte au cas où l'appareil devait être retourner pour réparation.

Attention:

Lors de l'utilisation de produits électrique, assurez-vous d'adhérer à des précautions de bases incluant celle qui suivent:

Alimentation

L'appareil ne doit être branché qu'à une source d'alimentation correspondant au voltage spécifié dans le manuel ou tel qu'indiqué sur l'appareil. Cet appareil est équipé d'une prise d'alimentation polarisée. Ne pas utiliser cet appareil avec un cordon de raccordement à moins qu'il soit possible d'insérer complètement les trois lames. Des précautions doivent être prises afin d'éviter que le système de mise à la terre de l'appareil ne soit désengagé.

Risque

Ne pas placer cet appareil sur un chariot, un support, un trépied ou une table instables. L'appareil pourrait tomber et blesser quelqu'un ou subir des dommages importants. Utiliser seulement un chariot, un support, un trépied ou une table recommandés par le fabricant ou vendus avec le produit. Suivre les instructions du fabricant pour installer l'appareil et utiliser les accessoires recommandés par le fabricant.

Il convient de ne pas placer sur l'appareil de sources de flammes nues, telles que des bougies allumées.

L'appareil ne doit pas être exposé à des égouttements d'eau ou des éclaboussures et qu'aucun objet rempli de liquide tel que des vases ne doit être placé sur l'appareil.

Les dispositifs marqués d'une symbole "d'éclair" sont des parties dangereuses au toucher et que les câblages extérieurs connectés à ces dispositifs de connexion extérieure doivent être effectués par un opérateur formé ou en utilisant des cordons déjà préparés.

Cordon d'Alimentation

Évitez d'endommager le cordon d'alimentation. N'UTILISEZ PAS L'APPAREIL si le cordon d'alimentation est endommagé.

Service

Consultez un technicien qualifié pour l'entretien de votre appareil.

AP6020 Parts List 5/27/2003

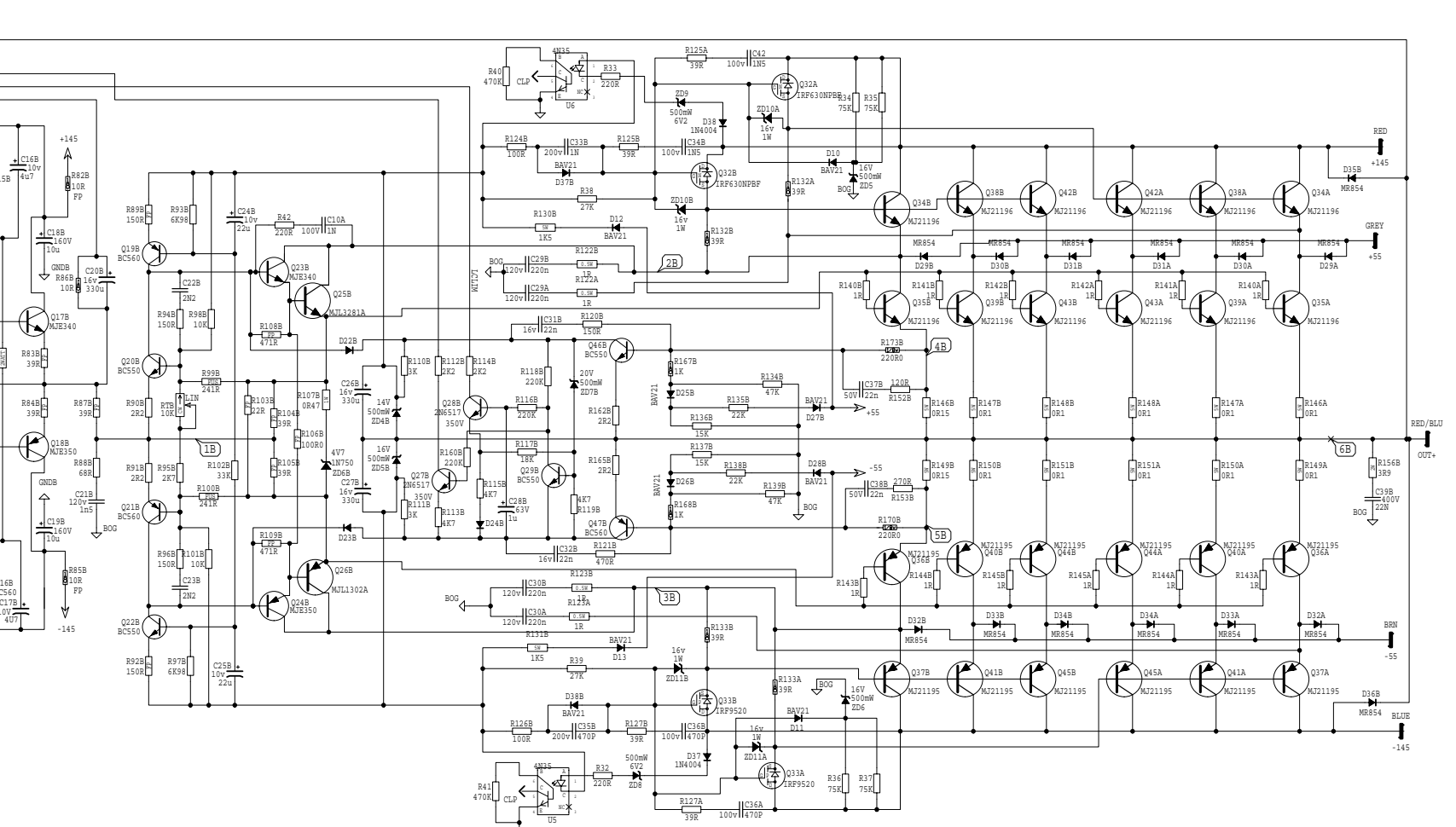
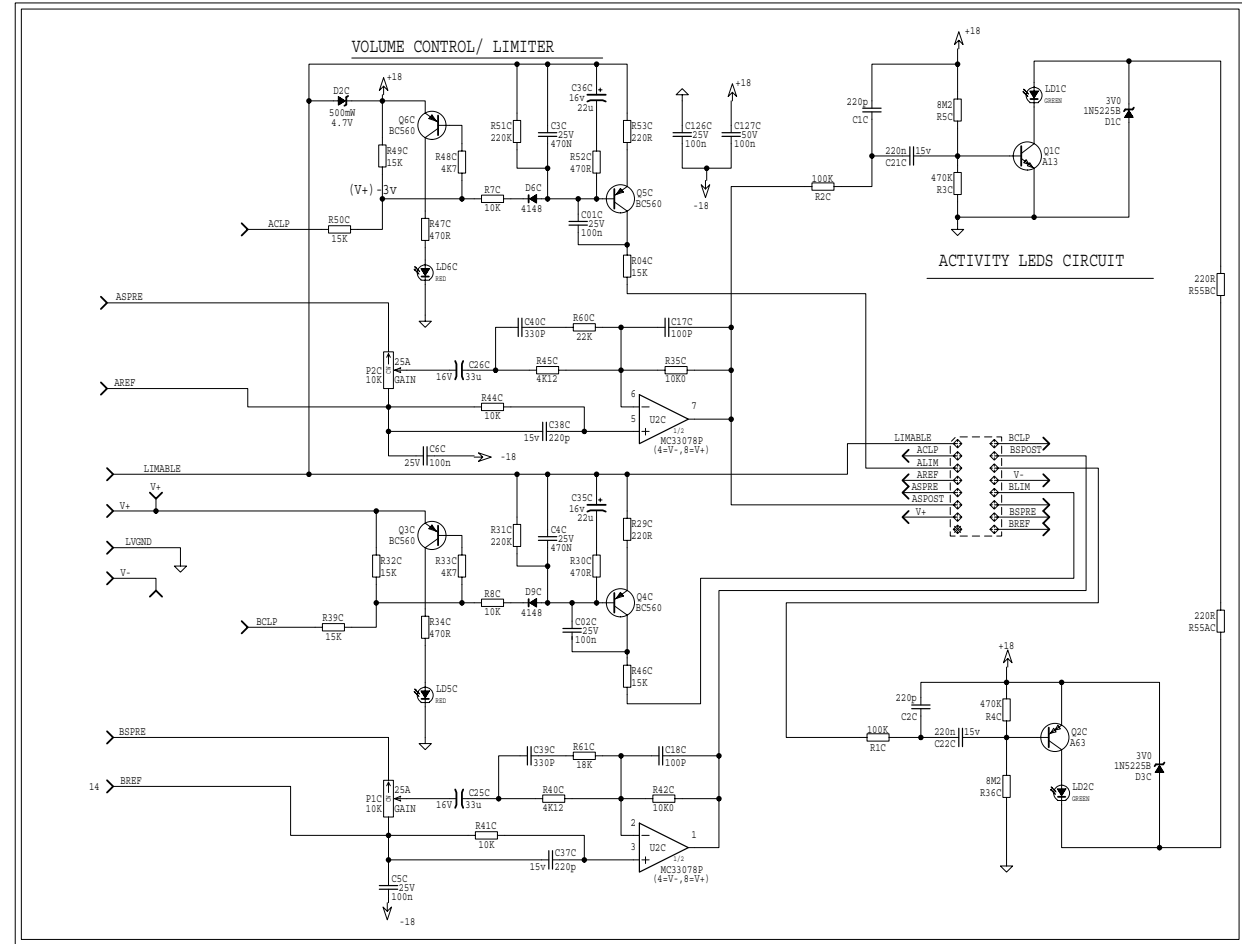
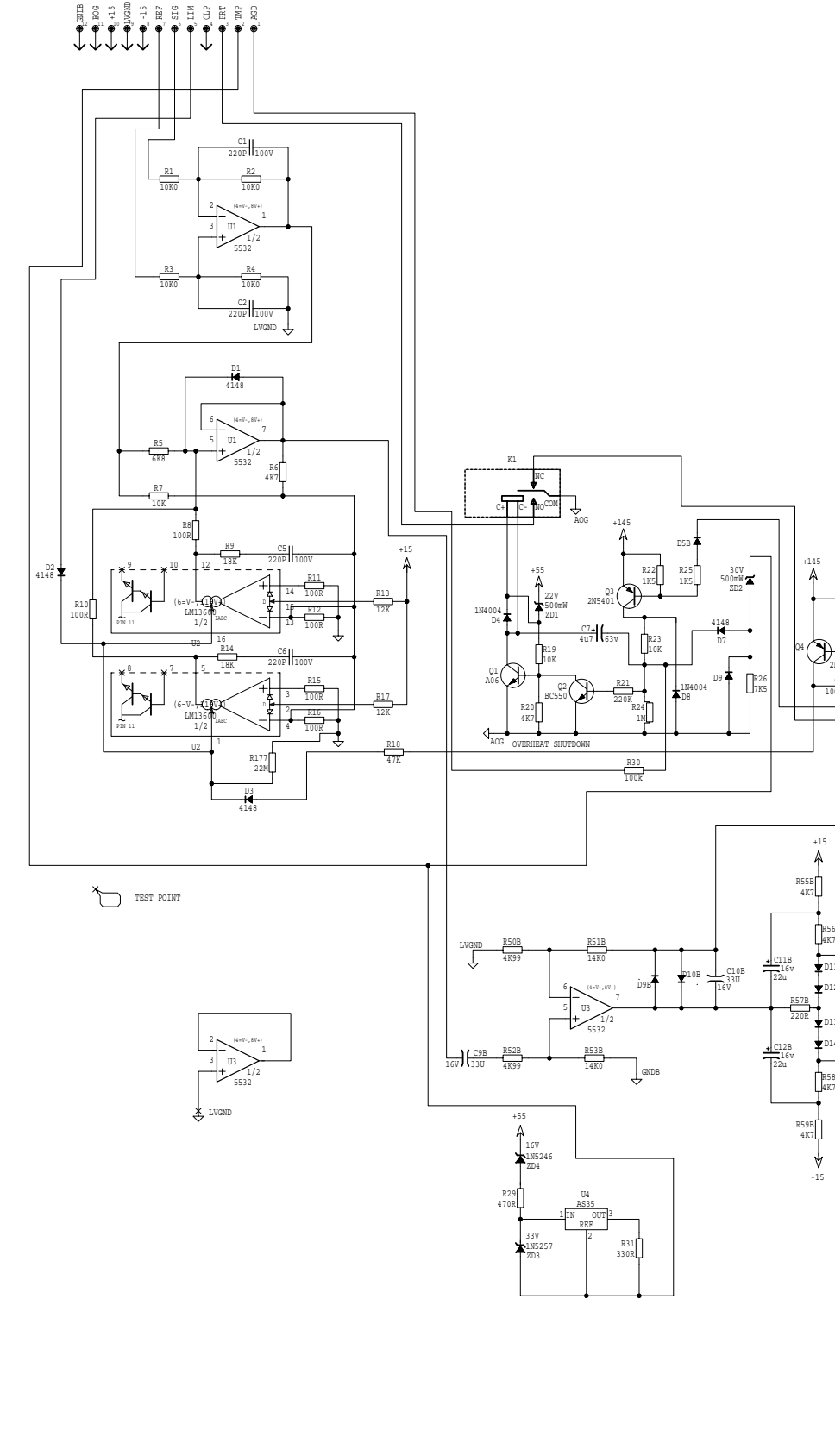
YS #	Description	Qty.	YS #	Description	Qty.	YS #	Description	Qty.
3562	16 PIN SOCKET W3116T WINSLOW	1	4520	_10K TRIM POT	2	4718	5.0W 1K5 5% BLK RES	4
5906	RED 3MM LED 1V9 20MA .4SPCER T&R	3	2444	25.0 AMP CIRCUIT BREAKER	1	4988	1/4W 1K5 5%MINI T&R RES	8
5908	GRN 3MM LED 1V9 20MA .4SPCER T&R	3	714	1.5 MIL X 36" CLEAR POLY SHEETING	4	4791	1/4W 1K54 1% T&T RES	4
6419	BRIDGE 35A 400V WIRE LEAD G13504	3	3820	4UH COIL 14AWG ZOBEL HORIZONTAL	2	6113	1/4W 2K 5%MINI T&R RES	6
6425	BAV21 200V 0A25 DIODE T&R	20	3441	CLIP 250X032 16-14AWG RIGHT ANGLE	30	4847	1/4W 2K2 5% T&R RES	4
6825	1N4148 75V 0A45 DIODE T&R	52	3459	QUIK DISCNCT TERM 250X032 10-12AWG	2	4864	1/4W 2K7 5% T&R RES	2
6438	1N4007 400V 1A0 DIODE T&R	13	3470	CLIP 250X032 14-16AWG DISCO-LOK	8	6124	1/4W 3K 5%MINI T&R RES	6
6934	MR854 400V 3A0 DIODE FASREC	28	3485	CLIP 250X032 18-22AWG RIGHT ANGLE	1	6136	1/4W 3K3 5%MINI T&R RES	4
6439	1N5225B 3V0 0W5 ZENER 5% T&R	2	3492	GROUND LUG FOR NO8-10 STUD	1	4774	1/4W 4K12 1% T&R RES	2
6440	1N750ARL 4V7 0W5 ZENER 5% T&R	5	3601	RING TERMINAL 16AWG WIRE & #8 SCREW	1	4827	1/4W 4K7 5% T&R RES	1
6436	1N753ARL 6V2 0W5 ZENER 5% T&R	4	3618	STAR RING TERMINAL 14-16AWG #10SCREW	5	4982	1/4W 4K7 5%MINI T&R RES	20
6486	1N5244B 14V0 0W5 ZENER 5% T&R	2	3682	250 MALE PCB TAB REEL	44	6128	1/4W 4K99 1%MINI MF T&R RES	4
6822	1N4745A 16V0 1W0 ZENER 5% T&R	12	3410	RED ON LEFT DUAL BINDING POST TPP5	1	4828	1/4W 6K8 5% T&R RES	2
6824	1N5246B 16V0 0W5 ZENER 5% T&R	4	3415	RED ON RIGHT DUAL BINDING POST TPP5	1	6121	1/4W 6K98 1%MINI MF T&R RES	4
6432	1N5248B 18V0 0W5 ZENER 5% T&R	2	3498	1/4" JCK PCB MT HORZ	2	4887	1/4W 7K5 5% T&R RES	2
6465	1N5250B 20V0 0W5 ZENER 5% T&R	2	6956	SPKON 4C PCB MT HORZ GRY #4	2	4663	1/2W 8K2 5% T&R RES	2
6463	1N5251BRL 22V0 0W5 ZENER 5% T&R	3	3417	6-32 SCREW TERMINAL PC MNT STRAIGHT	2	4990	1/4W 8K2 5%MINI T&R RES	4
6466	1N5256B 30V0 0W5 ZENER 5% T&R	1	3922	XLR FEML PCB MT HORZ THIN SNAP-IN	2	4762	1/4W 9K760 0.1%*** T&R RES	8
6433	1N5257B 33V0 0W5 ZENER 5% T&R	4	3451	EYELET SMALL 0.089 OD PLATED	78	4829	1/4W 10K 5% T&R RES	2
5101	BC550C TO92 NPN TRAN T&R TB	16	3864	FAN 92MM X 92MM 60CFM 24VDC	2	6116	1/4W 10K0 1%MINI MF T&R RES	29
5102	BC560C TO92 PNP TRAN T&R TB	14	3501	B52200F006 COMP WASH #4 SMALL	20	4856	1/4W 12K 5% T&R RES	4
5103	MPSA06 TO92 NPN TRAN T&R TA	4	8498	6-32 X 3/8 STEEL PEM STUD	6	4901	1/4W 13K 5% T&R RES	2
5107	2N5551 TO92 NPN TRAN T&R TA	2	3799	ROUND BUMPER BUTTON BLACK	1	4775	1/4W 14K0 1% T&R RES	4
5108	2N5401 TO92 PNP TRAN T&R TA	6	3801	5/8" BUMPER BUTTON BLACK	4	4630	1/2W 15K 5% T&R RES	4
6854	2N6517 TO92 NPN TRAN TA	4	3803	NYLON SECUR-A-TACH MINI PLASTIC TIE	1	4979	1/4W 15K 5%MINI T&R RES	10
5105	MPSA13 TO92 NPN DARL T&R TA	1	3810	4" NYLON CABLE TIE	17	4771	1/4W 17K8 1% T&R RES	2
5106	MPSA63 TO92 PNP DARL T&R TA	1	3827	SQUARE BUMPER BUTTON BLACK	5	6125	1/4W 18K 5%MINI T&R RES	7
6814	MJF6668 T221D PNP TRAN DARL TJ	1	8433	AP SERIES PLASTIC KNOB	2	6118	1/4W 22K 5%MINI T&R RES	5
6815	MJF6388 T221D NPN TRAN DARL TJ	2	8661	BUTTON KNOB FLAT GREY	3	4633	1/2W 27K 5% T&R RES	4
6873	MJE340 TO126 NPN TRAN TG	6	8437	FAN FILTER LABEL	1	6129	1/4W 27K 5%MINI T&R RES	4
6874	MJE350 TO126 PNP TRAN TG	6	3401	30 AMP 125V TWISTLOC PLUG	1	4840	1/4W 33K 5% T&R RES	6
6752	MTP10N15L TO220 NCH MFET TN	4	3839	STRAIN RELIEF 0.8 INCH W/DOME NUT □	1	4834	1/4W 47K 5% T&R RES	11
6925	MTP8P20 TO220 PCH MFET TN	4	3638	12 CIR CABLE HOLDER .098	2	4835	1/4W 56K 5% T&R RES	4
6909	MJ21196 TO3 NPN TRAN TH	24	3707	14 CIR CABLE HOLDER .098	1	4760	1/4W 75K 5% T&R RES	8
6989	MJL1302A TO3P PNP TRAN TK	2	5989	4 CIR CABLE HOLDER .098	2	4837	1/4W 82K 5% T&R RES	2
6990	MJL3281A TO3P NPN TRAN TK	2	8701	4-40 KEPS NUT ZINC	23	4838	1/4W 100K 5% T&R RES	5
6910	MJ21195 TO3 PNP TRAN TH	24	8666	6-32 X 1/4" INSERT CFS0632-8	2	4851	1/4W 120K 5% T&R RES	2
6840	MC33078P IC DUAL OP AMP	4	8760	6-32 KEPS NUT TIN PLATED	96	4894	1/4W 130K 5% T&R RES	2
6884	NE5532N IC DUAL OP AMP	4	8800	6-32 KEPS NUT ZINC	10	4668	2.0W 220K 5%10MM BODY T&R RES	2
6745	LM13600N IC XCONDUCTANCE AMP	2	8844	6-32 PENNUT	4	4841	1/4W 220K 5% T&R RES	1
5190	MBS4492 TO92 8V5 DIAC T&R	2	8841	10-32 KEPS NUT ZINC	3	6126	1/4W 220K 5%MINI T&R RES	10
6444	MAC224-4 TO220 40A TRIAC 200V	2	3797	TO-247 THERMO CONDUCTIVE PAD	4	6127	1/4W 470K 5%MINI T&R RES	6
5191	MCR100-6 TO92 SCR 600V 0.8A	1	3823	TO-220 THERMO PAD SMALL HOLE	8	4844	1/4W 1M 5% T&R RES	2
6880	4N35 OPTO-COUPLER	4	3846	TO220 THERMO PAD LARGE HOLE 56359B	8	4888	1/4W 4M7 5% T&R RES	2
6489	5R0 20% NTC THERMISTOR-SURGTR	2	3916	TO3 SIL-PAD REPLACES MICA	48	6132	1/4W 8M2 5%MINI T&R RES	2
5401	_10P 500V 5%CAP T&R RAD CER.2"NPO	4	3546	14 CIR WAFER W/LCK VT 0.1"	1	4751	1/4W 22M 5% T&R RES	2
5410	100P 100V 10%CAP T&R BEAD NPO	2	3580	12 CIR WAFER W/LCK VT 0.1"	2	3696	RELAY 1C 02AMP DC24 006MA PC-S	2
5197	220P 100V 2%CAP T&R RAD CER.2"NPO	17	4597	22AWG STRAN TC WIR JMP	52	3722	RELAY 1A 30AMP DC24 036MA PC-C	1
5412	220P 100V 10%CAP T&R BEAD NPO	4	4599	22AWG SOLID SC WIR T&R JMP	152	8729	#4 X 3/8 FLAT QUAD TYPE A JS500 BLK	8
5211	330P 100V 5%CAP T&R RAD CER.2"NPO	2	5299	24AWG SOLID SC WIR RAD JMP	24	8861	4-40 X 3/8 PAN PH MS JS500	6
5201	470P 100V 5%CAP T&R RAD CER.2"NPO	6	4745	5.0W 0R1 5% BLK RES	20	8741	4-40 X 1/2 PAN PH MS JS500	16
5206	_1N 400V 5%CAP T&R RAD .2"FLM	4	4749	5.0W 0R15 5% BLK RES	4	8871	4-40 X 5/8 PAN PH MS JS500	4
5273	_1N5 200V 5%CAP T&R RAD CER.2"NPO	4	2005	1.0W 0R47 5%FLAME PROOF T&R RES	2	8799	#6 X 1/4 PAN PH TYPE B JS500	2
5208	_2N2 400V 5%CAP T&R RAD .2"FLM	6	2006	1.0W 1R 5%FLAME PROOF T&R RES	1	8832	6-32 X 1/4 PAN PH TAPTITE JS500	7
6451	_4N7 250V 20%CAP BLK 'Y' 10MM AC	1	2007	1/4W 1R 5%FLAME PROOF T&R RES	24	8807	6-32 X 5/16 PAN PH MS JS500	2
5210	_22N 100V 10%CAP T&R RAD .2"FLM	9	4677	1/2W 1R 5% T&R RES	8	8801	6-32 X 3/8 PAN PH TAPTITE JS500	4
5840	_22N 400V 10%CAP BLK RAD POLY FLM	2	4911	1/4W 2R2 5% T&R RES	8	8829	6-32 X 3/8 FLAT PH TAPTITE BO#4 HEA	40
6435	_22N 275V 20%CAP BLK 'X2' 15MM AC	2	4748	2.0W 3R9 5% T&R	3	8761	6-32 X 1/2 PAN PHIL MS ZINC CLEAR	96
5226	_68N 100V 5%CAP T&R RAD .2"FLM	4	4733	5.0W 5R6 5% BLK RES	2	8999	8-32 X 5/8 PAN PH TAPTITE JS500	20
5228	100N 100V 5%CAP T&R RAD .2"FLM	14	2009	1/4W 10R 2%FLAME PROOF T&R RES	2	8809	10-32 X 1/4 PAN PH TAPTITE JS500	8
5314	100N 50V 10%CAP T&R BEAD X7R	4	2010	1/8W 10R0 2%FLAME PROOF T&R RES	6	8753	#10 X 1/2 PAN PH TYPE A JS500 BLACK	3
5229	150N 63V 10%CAP T&R RAD .2"FLM	4	4605	1/8W 10R 5% T&R RES	1	8773	10-32 X 1 1/4 PN PH TT FULL THD JS5	3
5231	220N 63V 10%CAP T&R RAD .2"FLM	2	4875	1/4W 10R 5% T&R RES	3	8772	1/4-20 X 1 TRUSS PH MS JS500 BLACK	2
5882	220N 250V 10%CAP BLK RAD POLY FLM	8	2013	1/8W 22R1 1%FLAME PROOF T&R RES	2	8663	11/64 NYLON SPACER (MICRO PLASTIC)	96
5234	470N 63V 10%CAP T&R RAD .2"FLM	1	2014	1/8W 33R 2%FLAME PROOF T&R RES	4	3752	SNAP IN 1/4 SPACER RICHCO	3
5232	470N 50V 10%CAP T&R BEAD Z5U	2	2016	1/8W 39R 2%FLAME PROOF T&R RES	30	8629	10-32 X 1/4 SPACER PHENOLIC	8
5255	_1U 63V 20%CAP T&R RAD .2"EL	2	4811	1/4W 68R 5% T&R RES	2	8851	.250 SPACER ID.190 OD.31 ALUMINUM	6
5259	_4U7 63V 20%CAP T&R RAD .2"EL	6	2019	1/8W 100R0 1%FLAME PROOF T&R RES	18	3743	SNAP ON 0.5" SPACER RICHCO	8
5281	_10U 16V 20%CAP T&R RAD .2"NP	2	4987	1/4W 120R 5%MINI T&R RES	2	3851	1/2 PCB PLASTIC SPACER	3
5629	_10U 160V 20%CAP BLK 10X13MM EL	4	2020	1/8W 150R 2%FLAME PROOF T&R RES	14	8667	SHOULDER WASHER SWS-229 LENGTH 1/8	8
5945	_10U 63V 20%CAP T&R RAD .2"EL	5	2023	1/8W 220R0 1%FLAME PROOF T&R RES	4	3517	NYLON WASHER #8 0.062	1
5260	_22U 50V 20%CAP T&R RAD .2"EL	6	4977	1/4W 220R 5%MINI T&R RES	12	8818	3/4 OD X 3/8 ID X .080 THICK WASHER	1
5961	_33U 16V 20%CAP T&R RAD .2"NP	12	2024	1/8W 249R 2%FLAME PROOF T&R RES	4	8852	#6 INTERNAL TOOTH LOCKWASHER	1
5267	100U 25V 20%CAP T&R RAD .2"EL	3	4867	1/4W 270R 5% T&R RES	2	3436	DPDT PUSH SW PCMT H BREAK B4 MAKE	3
5914	100U 63V 20%CAP BLK 10X13MM EL	1	4855	1/4W 330R 5% T&R RES	2	3587	DPDT ROKR SW QUIK 250°AC/PWR ON-OFF	1
5630	330U 25V 20%CAP BLK 10X13MM EL	6	4736	5.0W 390R 5% BLK RES	2	3705	4P3T SLID SW PCMT H	1
5618	470U 25V 20%CAP BLK 10X15MM EL	1	2028	1/8W 475R 1%FLAME PROOF T&R RES	4			
5899	3300U 100V 20%CAP BLK 25X50MM ELS	12	4980	1/4W 470R 5%MINI T&R RES	8			
5895	6800U 63V 20%CAP BLK 25X50MM ELS	12	2033	1/8W 1K 2%FLAME PROOF T&R RES	8			
4390	_10K AUD 16MM DETENT P22	2	4823	1/4W 1K 5% T&R RES	4			

M1176.SCH DATABASE HISTORY

#	DATE	VER#	DESCRIPTION OF CHANGE
1	JAN/2000	1.00	FIRST PRODUCTION
2	FEB/08/00	1.10	CORRECTIONS TO MATCH PCB
3	MAR/08/00	1.20	PC#6193B C5,C6 10p->220p
4	DEC/12/00	1.30	PC#6303 ADD BYPASS CAPS C5C6C
5	MAR/20/01	1.40	PC#6377 Q34B C42 470P->1N5 R102B_39K->33K
6	MAR/30/01	1.50	PC#6377 R42 470R->220R
7	SEP/25/01	1.60	PC#6454 C10A 470P->1N ADD R40, R41
8	SEP/03/0	1.70	PC#6565 D25B/Z0B 4148->BAV21
9	MAY/23/06	1.80	PC#7083 Q32A/Q32B MTP10N15L TO IRP630NBPB

M1176A.PCB POT LIST

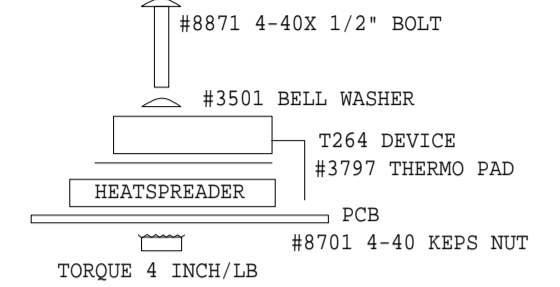
#	REF	FUNCTION	PART#	KNOB	AS OF
1	PC1	LEFT_GAIN	#4390	#8433	JAN_2000
2	PC2				
3					
4					
5					
6					
7					
8					
9					
10					



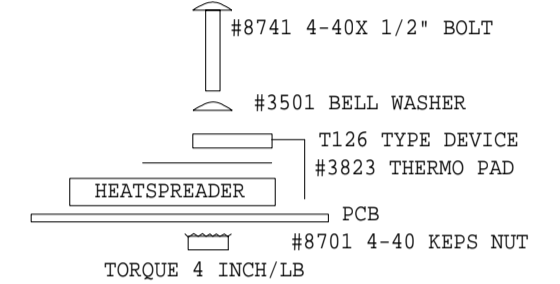
PRODUCTION NOTES
1 MOUNTING DETAILS FOR 5W

ADD #8629 SPACERS ONLY ON
5 WATT RESISTORS
R130A, R131A R130B AND R131B

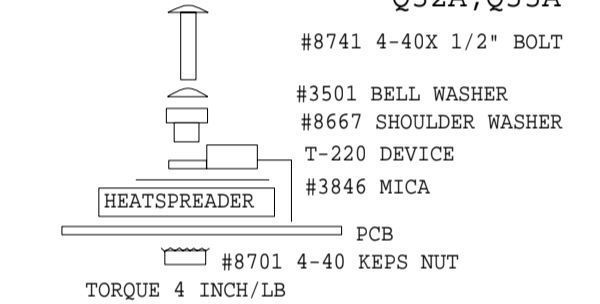
MOUNTING HARDWARE FOR Q25B, Q26B



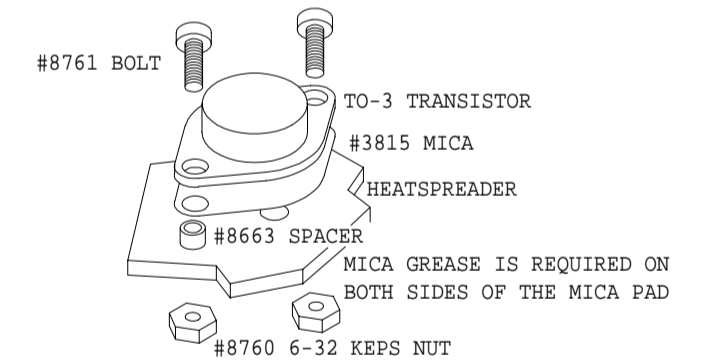
MOUNTING HARDWARE FOR Q23B, Q24B
Q17B, Q18B



MOUNTING HARDWARE FOR Q32B, Q33B
Q32A, Q33A



MOUNTING HARDWARE FOR TO3 OUTPUTS



INITIAL TORQUE FOR TO-3'S IS 8 INCH/LB
FINAL TORQUE AFTER HEATSINK HAS
COOLED FROM WAVE SOLDER IS 6 INCH/LB

TAB WIRE COLOURS

TB2	RED	14AWG	+145V
TB3	GRY	14AWG	+55V
TB5	BRN	14AWG	-55V
TB6	BLU	14AWG	-145V

TB4 OUTPUT +
TB7 OUTPUT -

PIC & P2C

STYLE "P22"

ETCH GUIDE

ETCH GUIDE

ETCH GUIDE

ETCH GUIDE

USE 2 OZ. COPPER

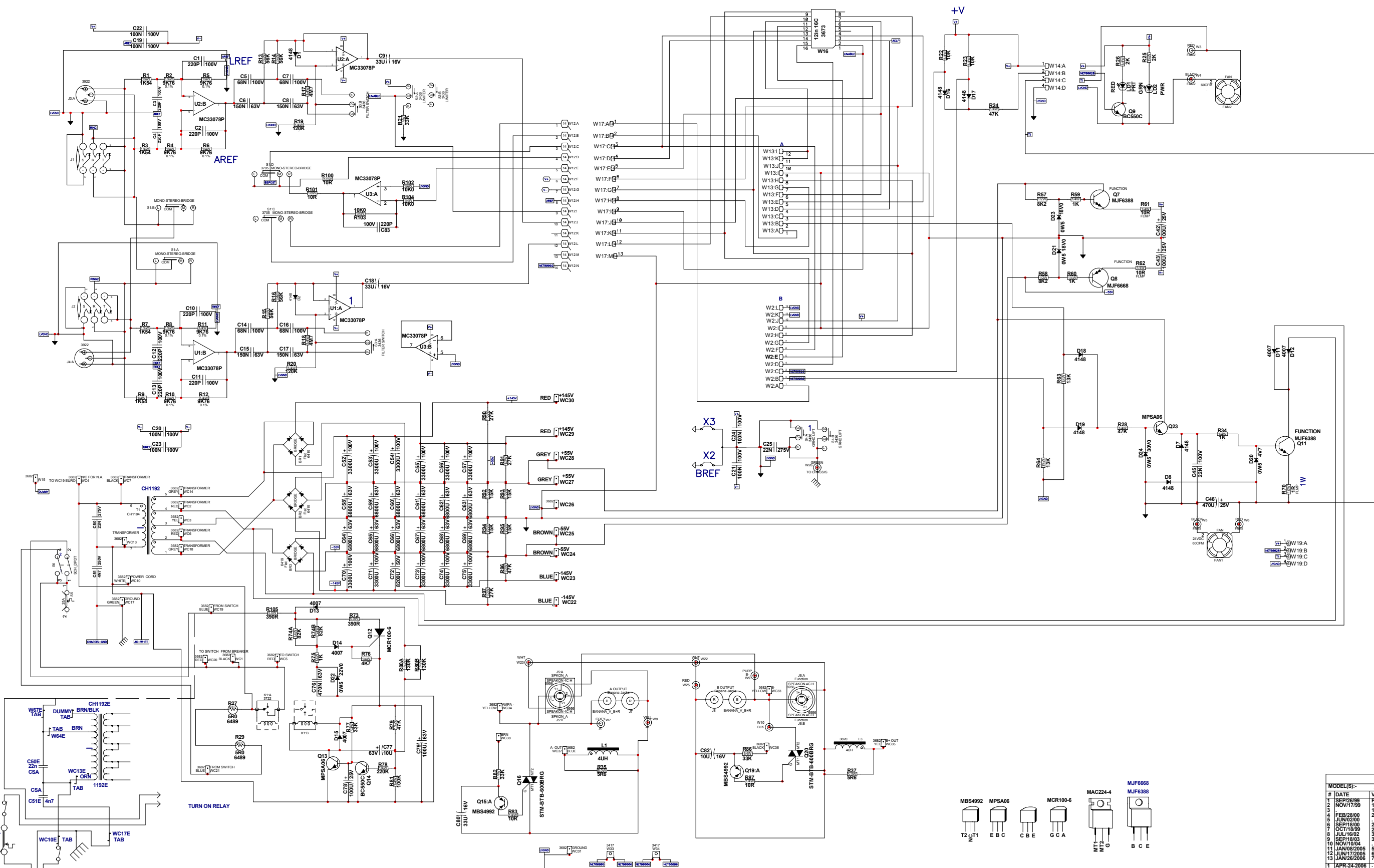
ASSEMBLY M1176-6.10
PCBMECH M1176-6.10

SOLDER SIDE

M1176-PCB_DATABASE_HISTORY		
MODEL(S):-	AP6020	
#	DATE	DESCRIPTION OF CHANGE
1	MAY12/99	1.00 PILOT RUN RELEASE
2	AUG/25/99	1.00 M1176-PROTO-TYPE
3	NOV/16/99	1.00 FINAL
4	FEB/08/00	2.00 FIX MISSING TRACES FIX DUPLICATE PART REFERENCE NUMBERS
5	DEC/12/00	3.00 REDUCE WIDTH .125" PC#6303_ADD_C5C-C6C_BYPASS_CAPS
6	MAR/20/01	3.00 PC#6357_C34B,C42_470P->1N5_R102B_39K->33K
7		3.00 FIXED_PADSTACKS/ADDED_MACPINS
8		3.00 PC#6377_R42A_470R->220R
11	MAR/30/01	3.10

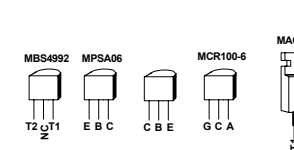
M1176-PCB_DATABASE_HISTORY		
MODEL(S):-	AP6020	
#	DATE	DESCRIPTION OF CHANGE
1	SEP/26/01	4.00 PC#6454_C10A_470P->1N ADD R40,R41
2	AUG/27/02	5.00 MOVE TRACE TO ELIMINATE SHORT
3	SEP/03/02	5.10 PC#6565_D25B_26B_4148->R4V21
4	AUG/31/04	5.00 R100B,R99B_249R->241R FUSIBLE
5		5.00 R41B,R40B_33R->FUSIBLE,R132A/B
6		5.00 R125A/B,R127A/B,R77B,R87B,R104B,
7		5.00 R133A/B,R104B,R78B,R105B-39R
8		5.00 R108B,R109B-470R->471R-FUSIBLE
9		5.00 R100B,R99B_249R->241 FUSIBLE
10	JUN/17/05	6.00 PC#6844 REDO SOLDERMASK
11	MAY/02/06	6.10 PC#7083_MTP10N15L TO IRF630NPNF

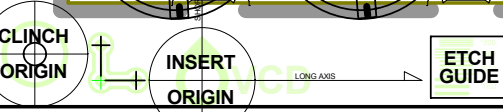
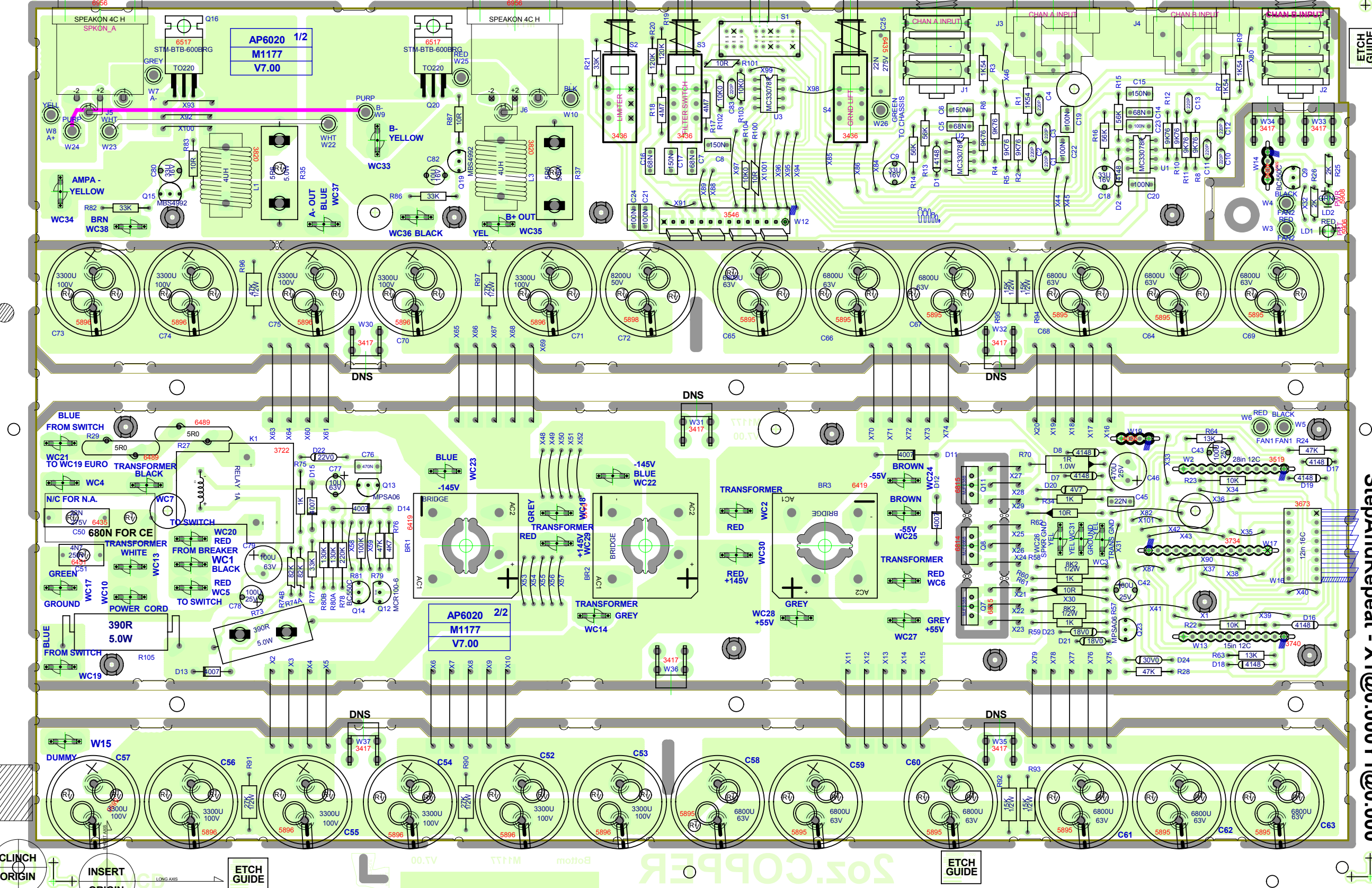
M1176A.PCB POT LIST				
MODEL(S):-	AP6020			
REF	FUNCTION	PART#	KNOB	AS OF
P1C	RIGHT_GAIN	#4390	#8433	JAN/2000
P2C	LEFT_GAIN	#4390	#8433	JAN/2000
P3C				
P4C				
P5C				
P6C				
P7C				
P8C				
P9C				
P10C				
P11C				
P12C				
P13C				
P14C				
P15C				
P16C				
P17C				
P18C				
P19C				
P20C				
P21C				
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P70C				
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P95C				
P96C				
P97C				
P98C				
P99C				
P100C				



MODEL(S):		AP620	
#	DATE	VER#	DESCRIPTION OF CHANGE
1	SEP/26/99	1.00	NEW AP620 PROTOTYPE
2	NOV/17/99	1.00	FINAL LAB MODEL
3	FEB/28/00	1.10	PC#6207 FUSE REPLACED BY 390R SW
4	JUN/02/00	2.00	PC#6242 SHA-R MOVED IN X
5	SEP/18/00	2.10	PC#6209 EYELET REMOVED FROM SPEAKER
6	OCT/15/99	2.20	PC#6553 REPLACE SHEARS WITH ROUTING
7	JUL/16/02	3.00	PC#6356 MOVED R105
8	SEP/19/03	3.10	PC#6528 C80-C82 10u -> 33u
9	NOV/19/04	5.00	PADS FOR EYELETS @ C9 ROUND TO SQUARE
10	JAN/05/2005	5.00	PC#6708 RED AC FOR CE COMPLIANCE
11	JUN/17/2005	6.00	PC#6844 REDO SOLDERMASK
12	JAN/26/2006	7.00	PC#6869: CONVERT TO PCAD2002 AND FIX CE AGAIN
13	JUN-24-2006		PC#7004: Q1: Q16&Q20 #6444 -> #6517.

MODEL(S):		M1177_SCH_DATABASE_HISTORY	
#	DATE	VER#	DESCRIPTION OF CHANGE
1	FEB/28/00	1.10	PC#6207 REPLACE FUSE WITH 390R SW (R105)
2	SEP/18/03	1.20	PC#6526 C80, C82 10u -> 33u
3	AUG/21/04	1.30	R100B, R585 249R -> 241R FUSIBLE
4	MAY/2005	2.00	CONVERT TO PCAD2002
5			
6			
7			
8			
9			
10			
11			
12			
13			





SEE LAYOUT DOCUMENTATION

StepAndRepeat - X1@0.000Y1@0.000



SEE LAYOUT DIAGRAM



M1177

M1177 DRILL HISTORY

MODEL(S):- AP6020			
#	DATE	VER#	DESCRIPTION OF CHANGE
1	SEP/26/99	P1.00	NEW AP6020 PROTOTYPE
2	NOV/17/99	1.00	FINAL LAB MODEL
3	.	1.10	PC# Q23 BC550 TO MPSA06
4	FEB/28/00	2.00	PC#6207 FUSE REPLACED BY 390R 5W
5	JUN/02/00	.	PC#6242 SHEAR MOVED .050" IN X
6	SEP/18/00	2.10	PC#6209 EYELET REMOVED FROM SPEAKON
7	OCT/18/99	2.20	PC#6553 REPLACE SHEARS WITH ROUTING
8	JUL/16/02	3.00	PC#6395 MOVED R105
9	SEP/18/03	3.10	PC#6626 C80-C82 10u -> 33u
10	NOV/10/04	.	PADS FOR EYELETS @ Q9 ROUND TO SQUARE
11	JAN/08/2005	5.00	PC#6788 REDO AC FOR CE COMPLIANCE
12	JUN/17/2005	6.00	PC#6844 REDO SOLDERMASK
13	JAN/26/2006	7.00	PC#6869: CONVERT TO PCAD2002 AND FIX CE AGAIN
1	APR-24-2006	.	PC#7004:GT:Q16&Q20 #6444 -> #6517.
2	D	V	N
3	D	V	N
4	D	V	N
5	D	V	N
6	D	V	N
7	D	V	N
8	D	V	N
9	D	V	N
10	D	V	N
11	D	V	N
12	D	V	N
13	D	V	N

MODEL(S):- AP6020			
#	DATE	VER#	DESCRIPTION OF CHANGE
1	D	V	N
2	D	V	N
3	D	V	N
4	D	V	N
5	D	V	N
6	D	V	N

M1177 PENDING CHANGES

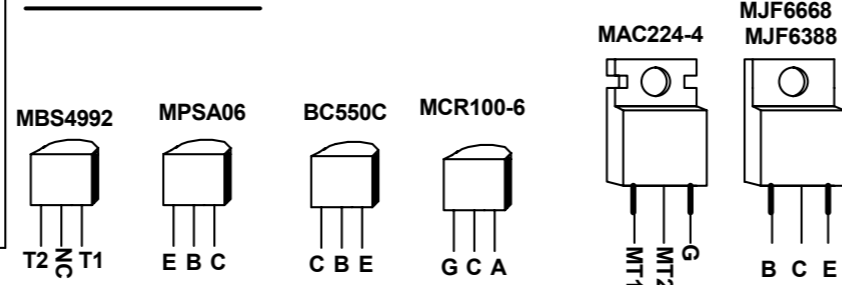
MODEL(S):- AP6020		
#	PC#	PENDING CHANGE
1	PC	X
2	PC	X
3	PC	X
4	PC	X
5	PC	X
6	PC	X

*PLACE IMPLEMENTED CHANGES INTO BOARD HISTORY

M1177.SCH_DATABASE_HISTORY

MODEL(S):- AP6020			
#	DATE	VER#	DESCRIPTION OF CHANGE
1	FEB/28/00	1.10	PC#6207 REPLACE FUSE WITH 390R 5W (R105)
2	SEP/18/03	1.20	PC#6626 C80, C82 10u -> 33u
3	AUG/31/04	.	R100B, R99B 249R -> 241R FUSIBLE
4	MAY/2005	2.00	CONVERT TO PCAD2002
5	D	V	N
6	D	V	N
7	D	V	N
8	D	V	N
9	D	V	N
10	D	V	N
11	D	V	N
12	D	V	N
13	D	V	N

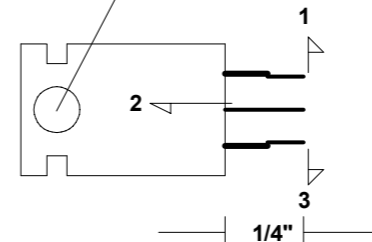
LEAD/PIN REFERENCE



PRODUCTION NOTES

1. MOUNTING DETAILS FOR Q30 TRIAC

USE #8799 TO MOUNT TRIAC Q30

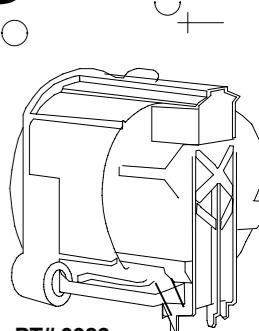


IMPORTANT!

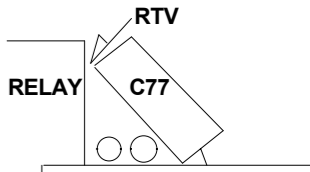
AFTER MOUNTING DEVICE
DO NOT CUT LEGS #2 OR #3
BEND LEGS IN DIRECTION SHOWN
IT IS IMPERATIVE THAT LEGS
MARKED 2 AND 3 ARE BENT FLAT
AGAINST THE COPPER SURFACE

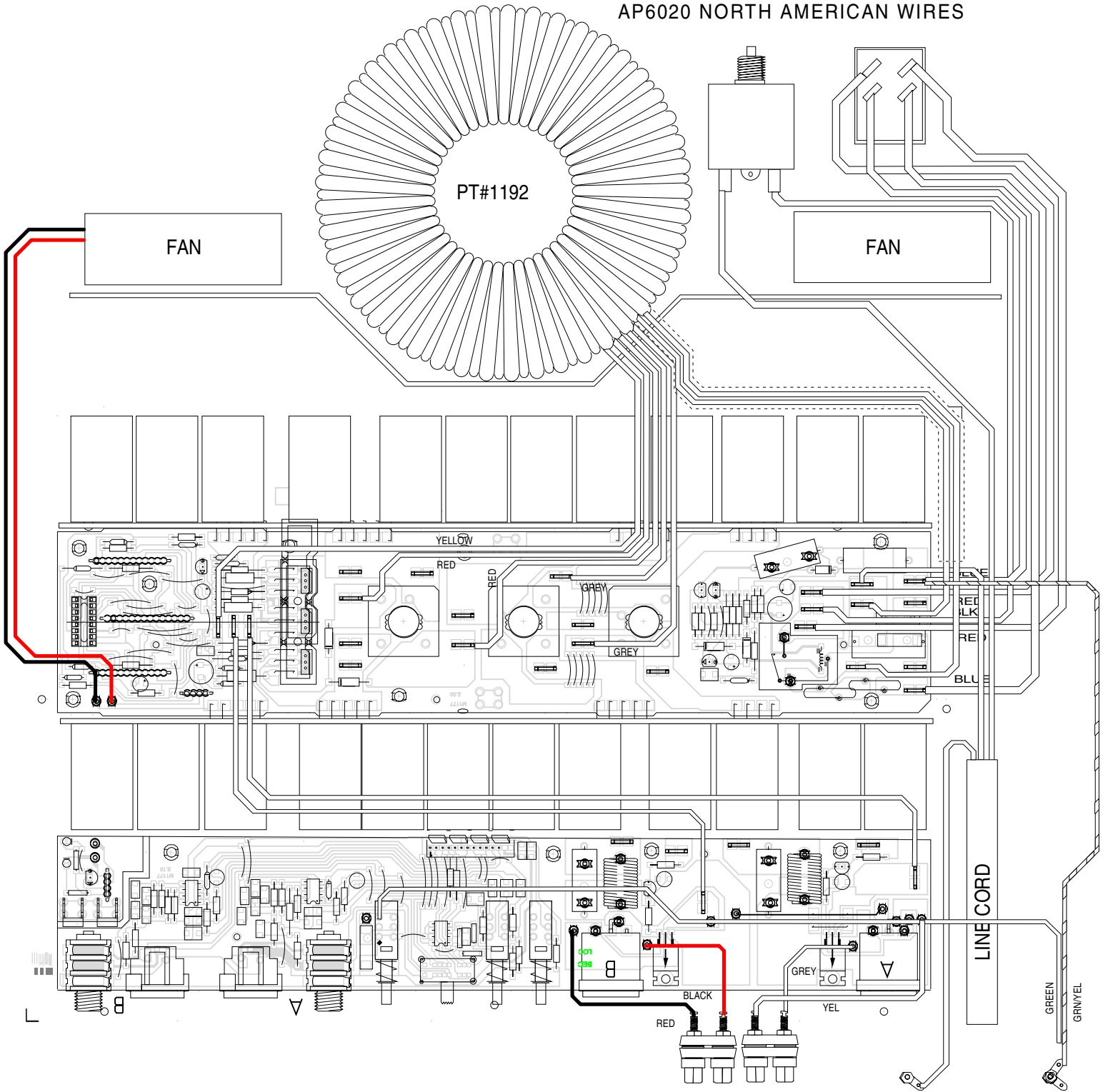
BEND DOWN 1/4" FROM BODY OF TRANSISTOR

- CUT LARGE CAP LEADS BEFORE WAVE SOLDER.
- SCREW DOWN BRIDGES WITH #8753 SCREW.
- REMOVE GROUND TAB ON XLR JACKS.
- FOR CE REMOVE R74A&R80A
- BEND C77 OVER AND RTV TO RELAY

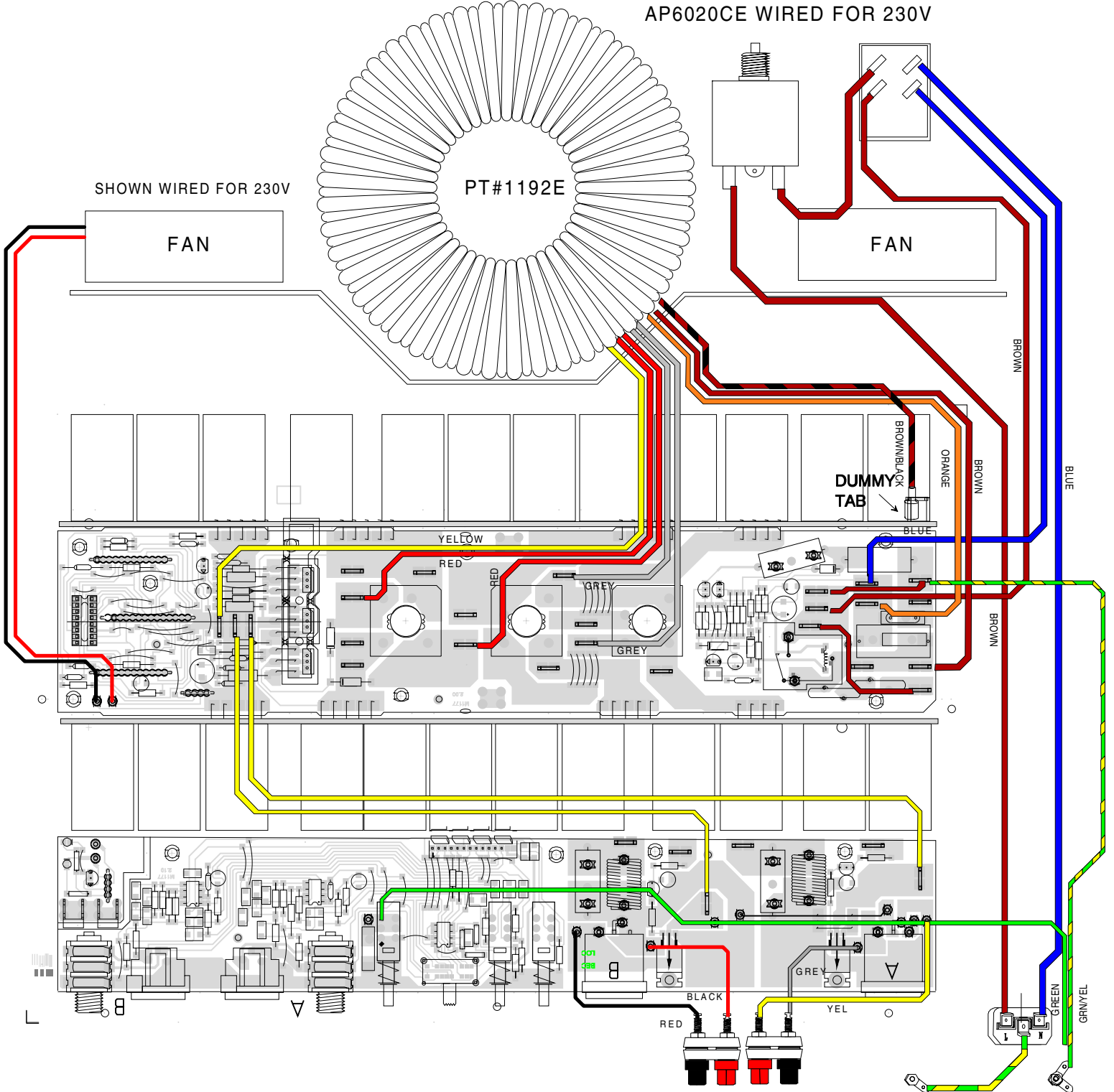


PT# 3922
THIS CONNECTION
MUST BE BROKEN HERE

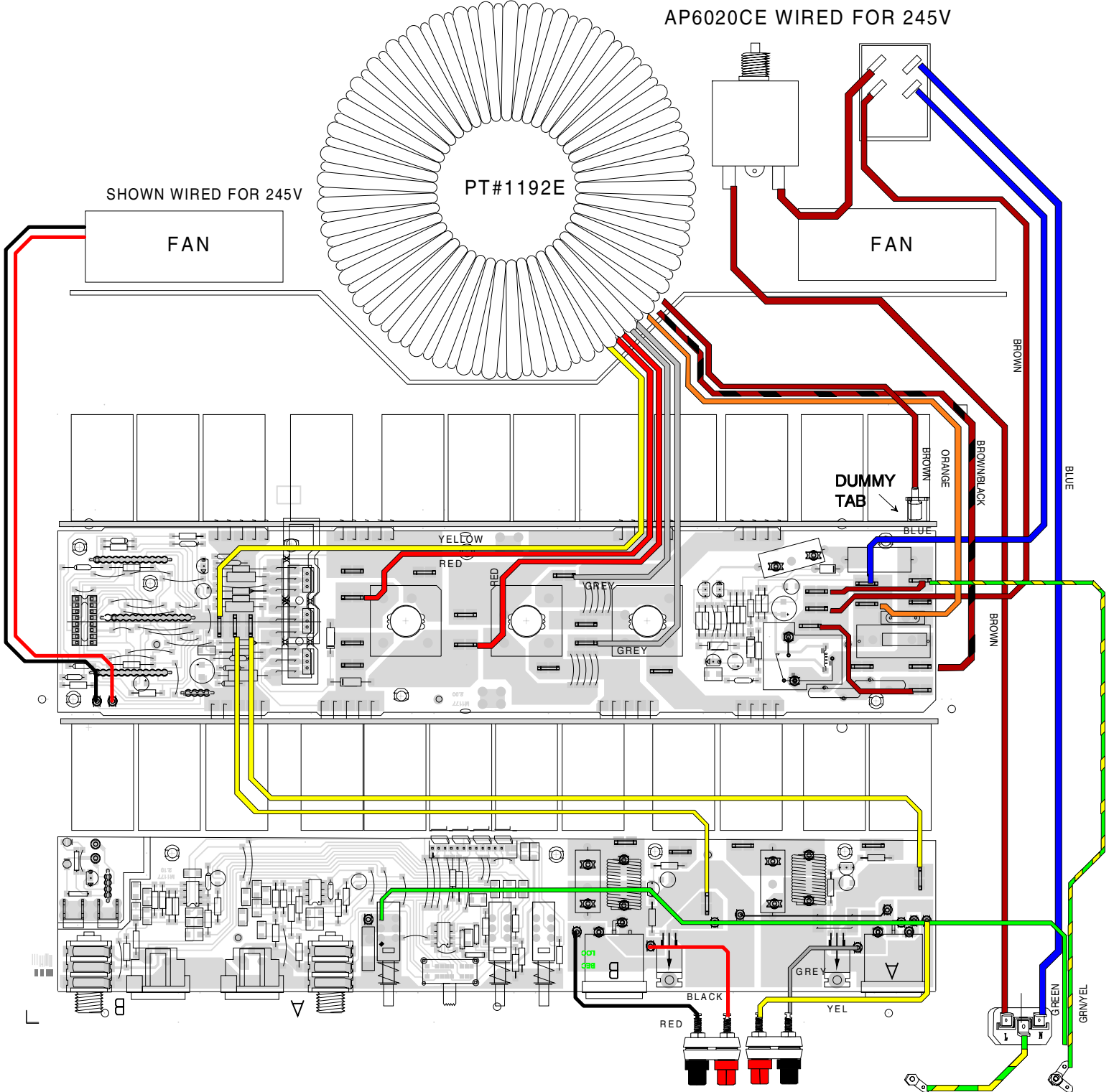




AP6020CE WIRED FOR 230V



AP6020CE WIRED FOR 245V





Yorkville Sound
550 Granite Court
Pickering, Ontario
Canada L1W 3Y8

Phone: (905)837-8550 Ext.218

Fax: (905)839-5776

Email: pmourtos@yorkville.com

www.yorkville.com

SERVICE BULLETIN

Date : February 29, 2000

Re : AP6020 / AP6040 Internal Fuse Problem

Dear Staff & Dealers,

We are sorry to advise that a service issue has developed with the AP6020 and AP6040 power amplifiers that will eventually affect every unit shipped before February 26th, 2000. All units in stock in Canada and the USA have been reworked to correct this problem.

The problem is serious enough that it is necessary to modify all units in the field, so we are here by issuing a service bulletin that will be followed up with letters and phone calls to all affected dealers and distributors.

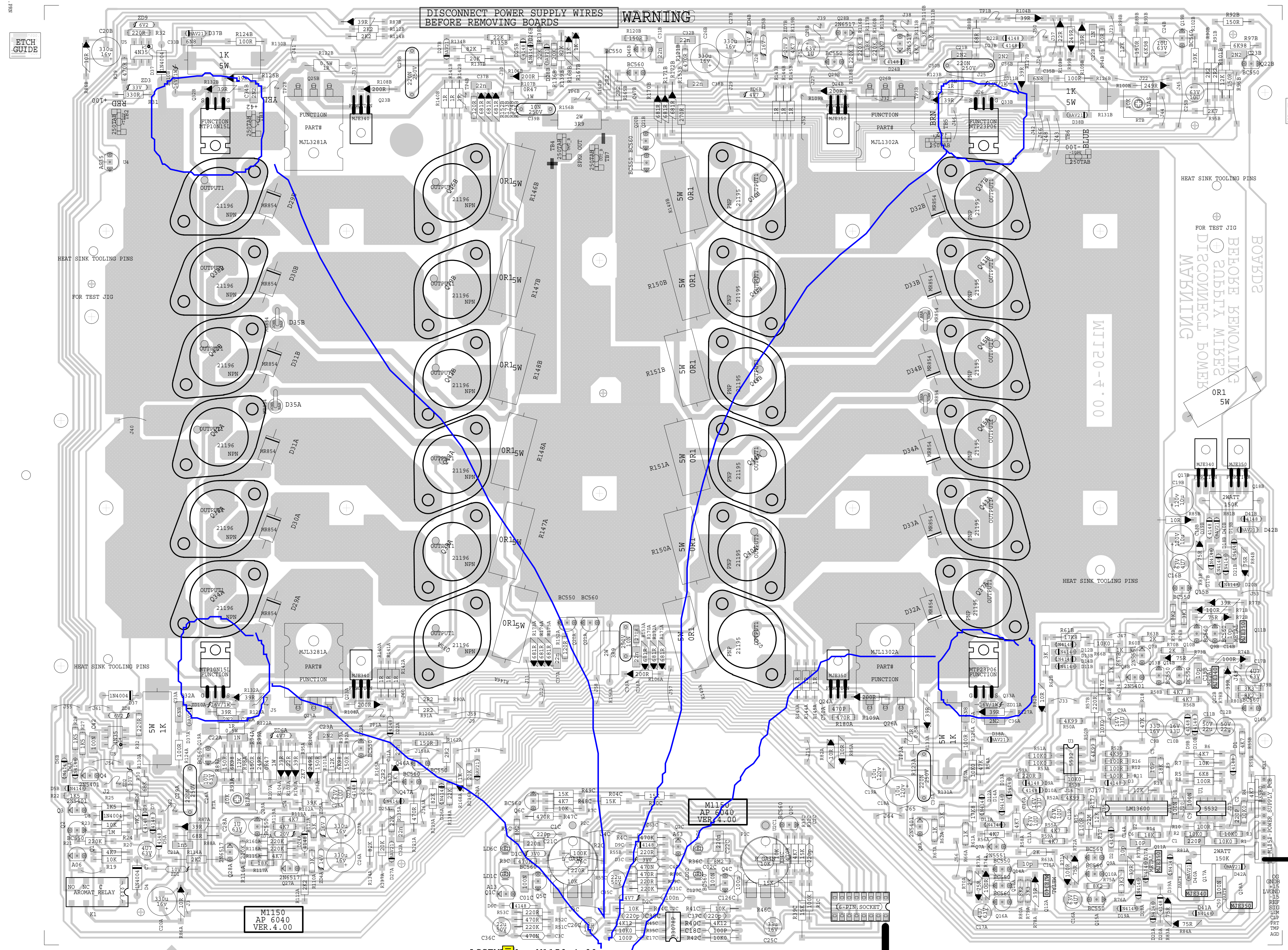
All units should be modified as soon as possible. The units can either be returned to Yorkville for modification, or can easily be modified in the field by a qualified service technician. We will, of course, accept warranty claims for this modification.

Required Modification:

- Remove the lid from the unit and both power amp boards.
- Locate the small 0.1A fuse on lower power supply board (#M1151 - AP6040 or M1177 - AP6020). This is the only fuse in the unit.
- Replace this fuse with a 5W 390R resistor (YSL Part#4736).
- Dress all wires away from the two 5W 390R resistors.
- In order to be sure that no damage was done to the upper power amp boards when they were removed it is strongly advised that the technician carefully retouch the solder on the three legs of each of the following transistors: #Q32A, Q32B, Q33A and Q33B on each of the two power amp boards (AP6040 - M1176/M1176A, AP6020 - M1150/M1150A)
- Replace the upper boards and lid.

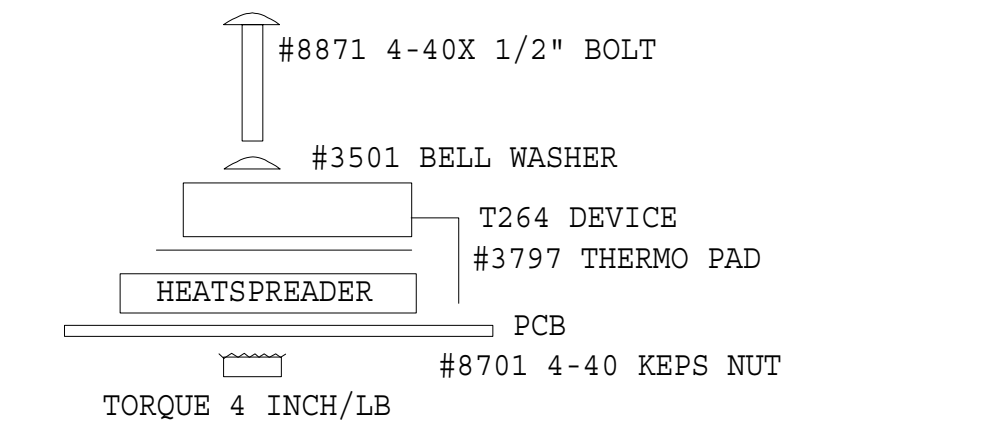
Sorry for any inconvenience caused as a result of this problem. For further technical information or assistance please contact Peter Mourtos at Yorkville Sound via phone at (905)837-8550 Ext.218 or via email at pmourtos@yorkville.com .

Enclosed - Layouts for AP6020/AP6040 Power Supply and Power Amplifier boards.

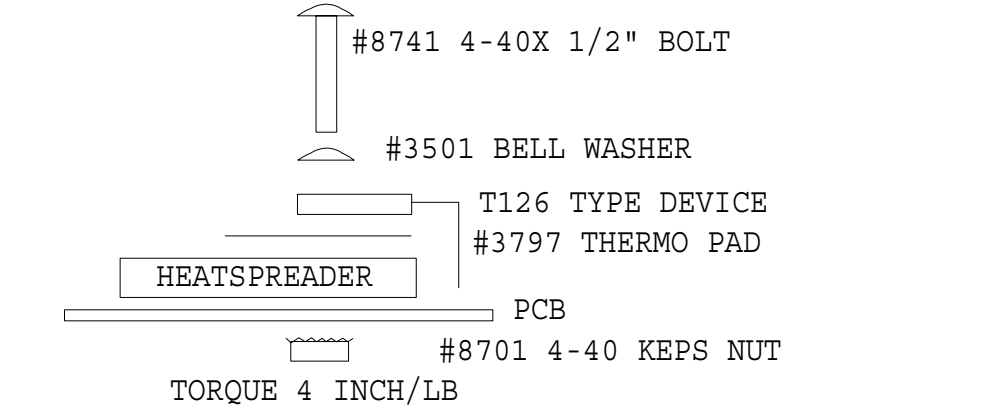


ADD #8629 SPACERS ONLY ON 5 WATT RESISTORS R29, R29A R45 AND R45A

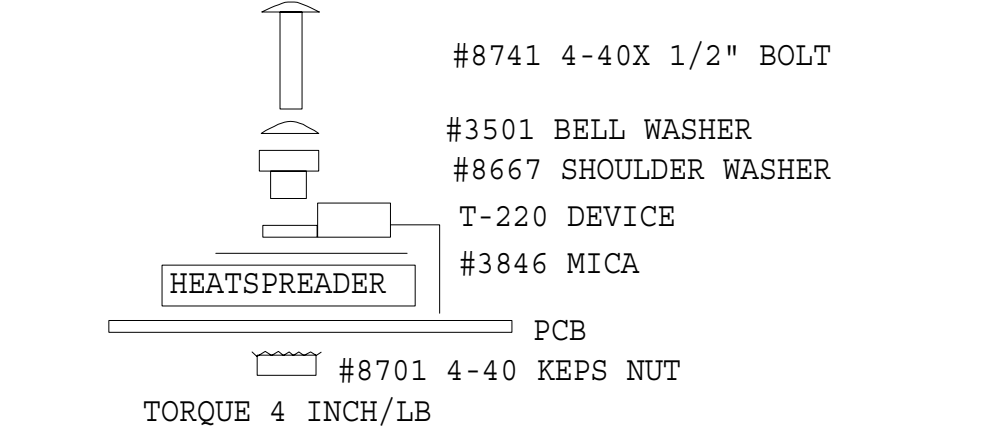
MOUNTING HARDWARE FOR Q5,Q6



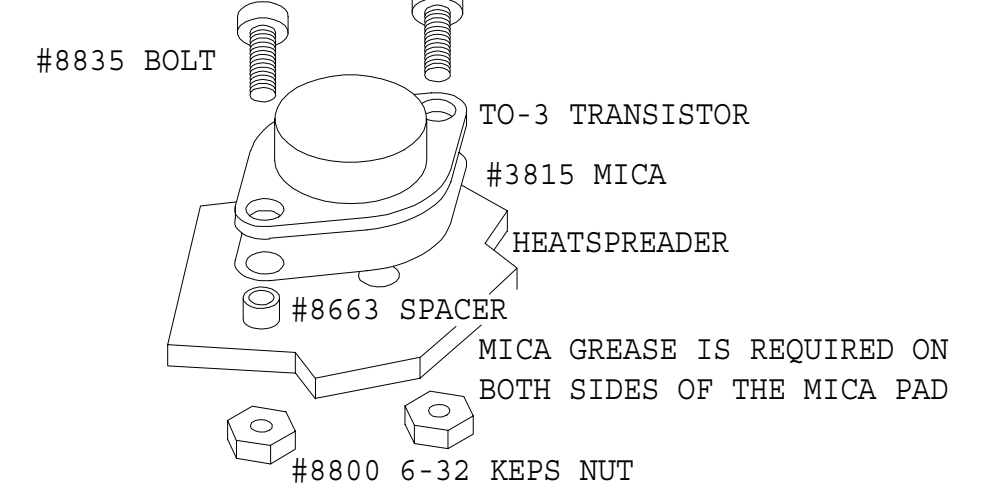
MOUNTING HARDWARE FOR Q40,Q41



MOUNTING HARDWARE FOR Q11,Q12



MOUNTING HARDWARE FOR TO3 OUTPUTS



INITIAL TORQUE FOR TO-3'S IS 8 INCH/LB
FINAL TORQUE AFTER HEATSINK HAS COOLED FROM WAVE SOLDER IS 6 INCH/LB

TAB WIRE COLOURS

- TAB 2 RED 14AWG
- TAB 3 YEL 14AWG
- TAB 5 BRN 14AWG
- TAB 6 BLU 14AWG
- TAB 4 OUTPUT +
- TAB 7 OUTPUT -

M1150-PCB DATABASE HISTORY

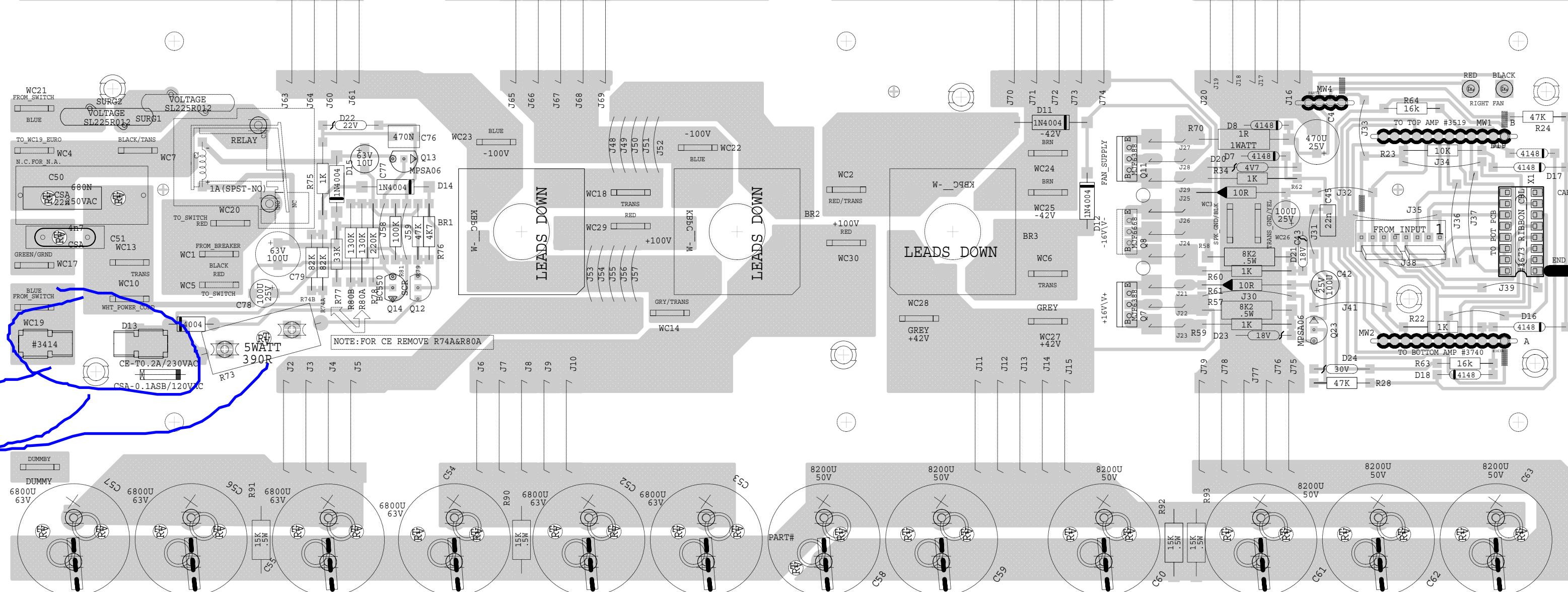
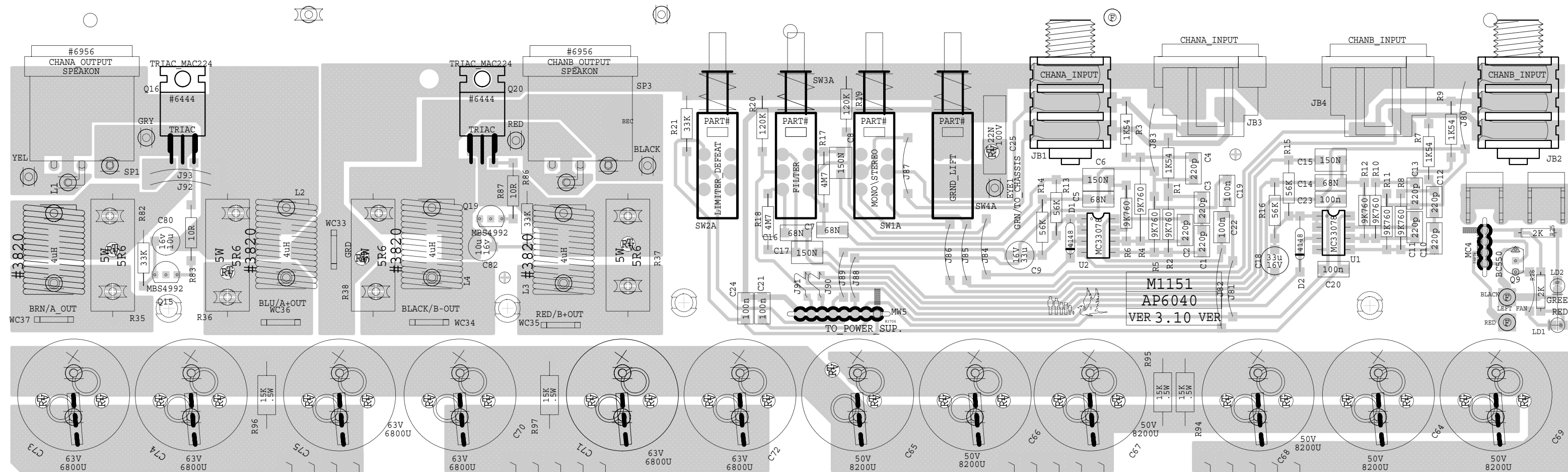
#	DATE	VER#	DESCRIPTION OF CHANGE
1	MAY12/99	1.00	PILOT RUN RELEASE
2	AUG/10/99	2.00	PC#6043 RELAY CONNECTIONS ALTERED
3			ADD R30 R50A/B R52A/B 10K0
4			->4K99 R35C/R42C 20K0->10K0
5			PC#6042 C50A B TO C Q24A ADD J63 TO
6			ELIMINATE SHORT SCREW
7			PC#6033 R163A/R158A->J163A/J158A
8	AUG/24/99	3.00	PC#6066 C126C 1 PIN V->GND
9	SEP/16/99		PC#6098 CHANGES AS PER PC
10	OCT/18/99		#3673 RIBBON->#3562 SKT
11	NOV/26/99	4.00	PC#6066 REPAIR ERROR

USE 2 OZ. COPPER

ASSEMBLY M1150-4.00

00.4-0211M YJHM22A

ETCH GUIDE



ETCH GUIDE

"000.01 X "000.24" M4
BLANK SIZE=15.000"



50% COPPER

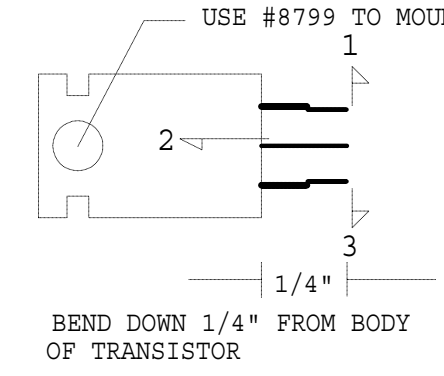
ETCH GUIDE

ASSEMBLY M1151-3.10
PCB MECH M1151-3.10

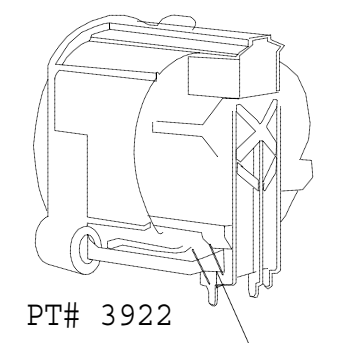
SOLDSIDE M1151-3.00

M1151.PCB DATABASE HISTORY			
#	DATE	VER#	DESCRIPTION OF CHANGE
1	AUG/10/99	2.00	PC#6034 LD2 ROTATED
2	.	.	TRIACS Q18,Q22 DELETED. R85,Q17,C81
3	.	.	R84,R88,Q21,C83,R89 DELETED
4	SEP/28/99	3.00	PC#6125 CHANGE SPACING R73_PC#6128
5	.	.	CHANGE SPAING OF COILS
6	OCT/18/99	.	REPLACE 16 PIN IC-SOCKET WITH #3673
7	.	.	RIBBON CABLE
8	JAN/31/00	3.10	PC# Q23 BC550->MPSA06_(TO_MATCH SCHEMATIC)
9	.	.	
10	.	.	
11	.	.	
12	.	.	
13	.	.	
14	.	.	
15	.	.	
16	.	.	
17	.	.	
18	.	.	
19	.	.	
20	.	.	
21	.	.	
22	.	.	
23	.	.	

1 MOUNTING DETAILS FOR Q30 TRIAC



IMPORTANT AFTER MOUNTING DEVICE DO NOT CUT LEGS #2 OR #3 BEND LEGS IN DIRECTION SHOWN IT IS IMPERATIVE THAT LEGS MARKED 2 AND 3 ARE BENT FLAT AGAINST THE COPPER SURFACE



THIS CONNECTION MUST BE BROKEN HERE

- 2 CUT LARGE CAP LEADS BEFORE WAVE SOLDER.
- 3 SCREW DOWN BRIDGES WITH #8753 SCREW.