



SERVICE MANUAL

MODEL TYPE: YS1002

ef500p

WEB ACCESS: <http://www.yorkville.com>

WORLD HEADQUARTERS CANADA

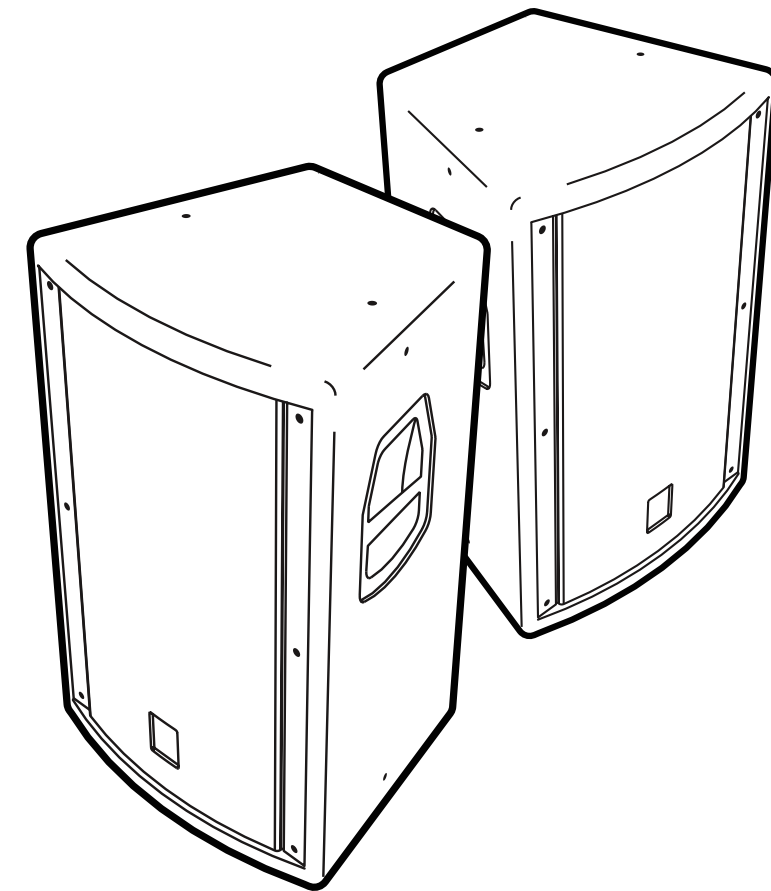
Yorkville Sound
550 Granite Court
Pickering, Ontario
L1W-3Y8 CANADA

Voice: (905) 837-8481
Fax: (905) 837-8746

U.S.A.

Yorkville Sound Inc.
4625 Witmer Industrial Estate
Niagara Falls, New York
14305 USA

Voice: (716) 297-2920
Fax: (716) 297-3689



Quality and Innovation Since 1963
Printed in Canada

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.

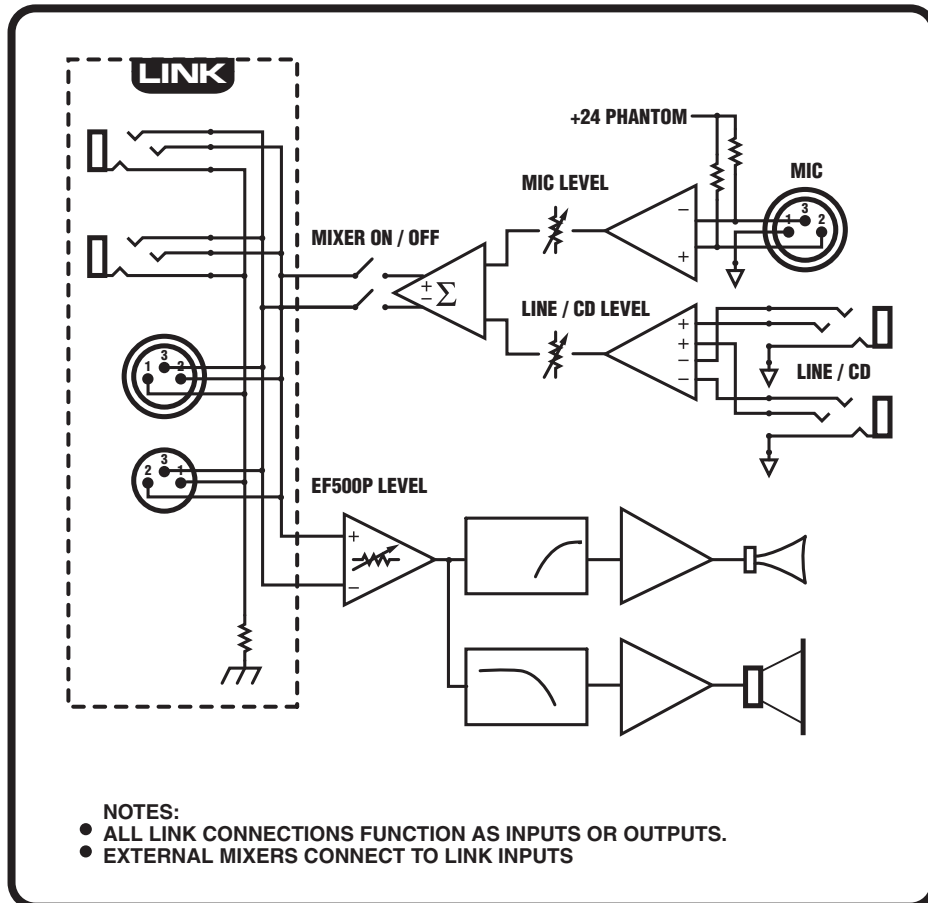
Service

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

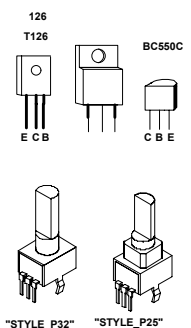
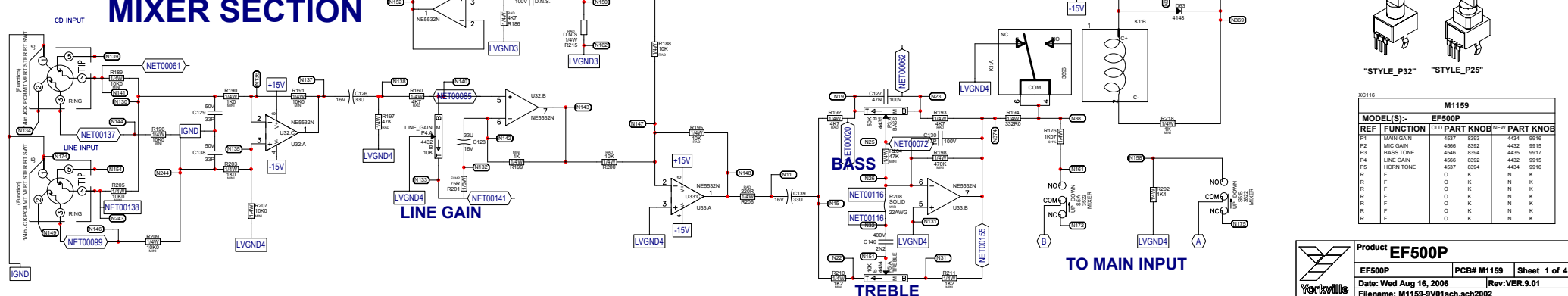
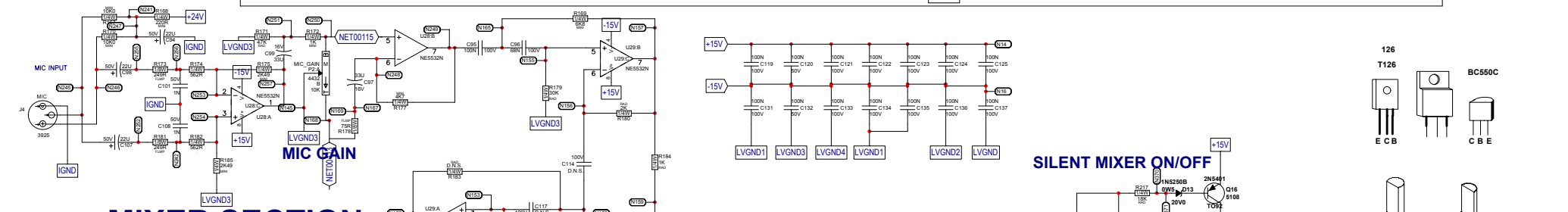
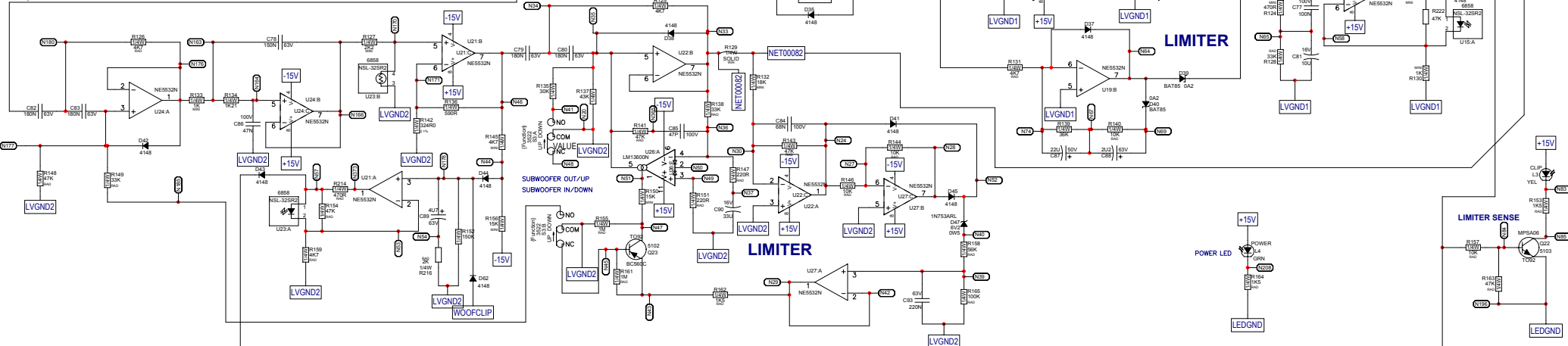
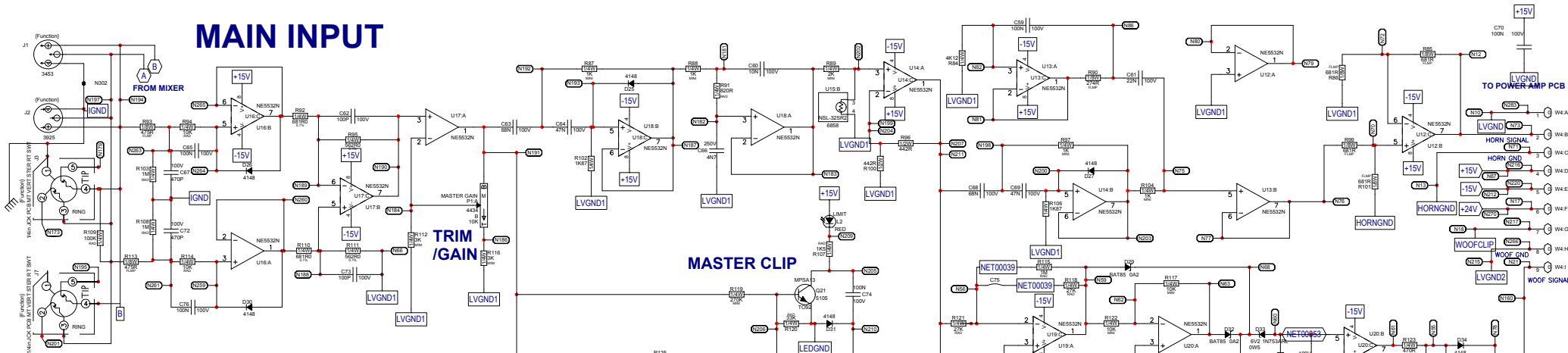


élite EF500P

800 WATT POWERED LOUDSPEAKER ENCLOSURE



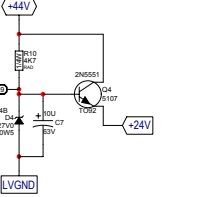
MAIN INPUT



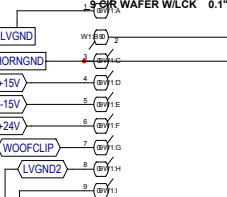
M1159			
MODEL(S)-	REF FUNCTION	PCB PART KNOB	WEP# PART KNOB
P1	MIC GAIN	4537 8393	4434 9916
P2	MIC GAIN	4596 8392	4432 9915
P3	BASS TONE	4590 8394	4435 9917
P4	LINE GAIN	4595 8392	4432 9915
P5	HORN TONE	4537 8394	4434 9916
R	F	O	K
R	F	O	K
R	F	O	K
R	F	O	K
R	F	O	K
R	F	O	K
R	F	O	K
R	F	O	K

HORN AMP

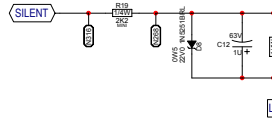
PHANTOM SUPPLY



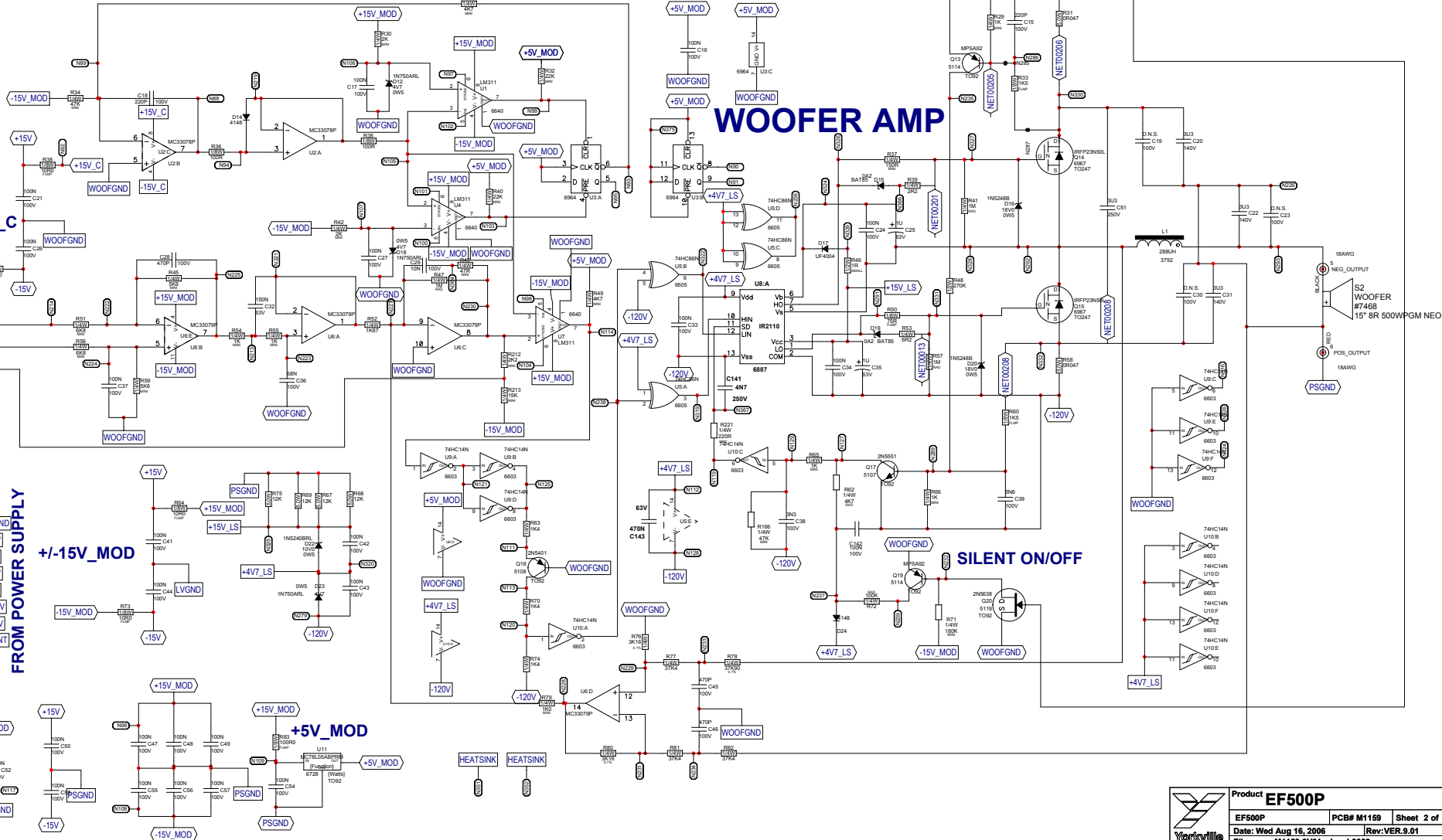
FROM INPUT PCB



SILENT ON/OFF



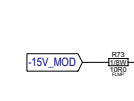
WOOFER AMP



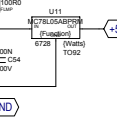
FROM POWER SUPPLY

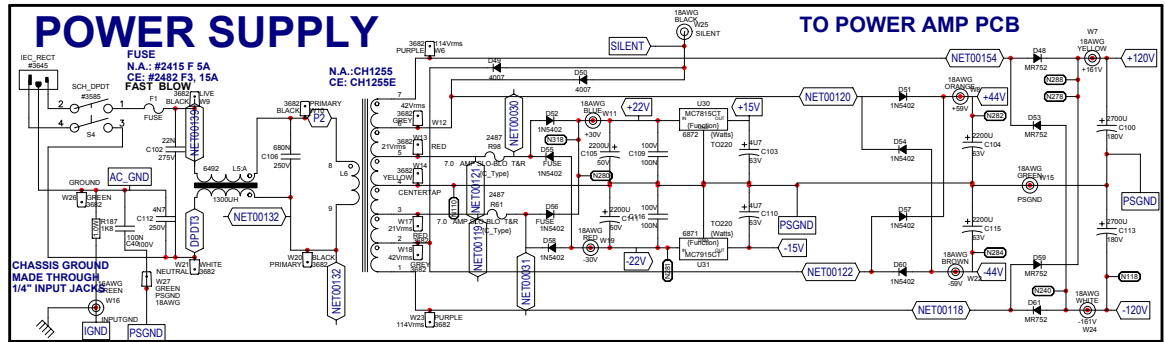


+/-15V_MOD



+5V_MOD



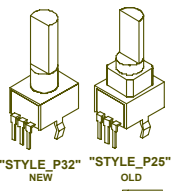


	N.A.	CE
TRANSFORMER	CH1255	CH1255E
FUSE F1	#2415 F 5A	#2482 F3, 15A

M1159		
MODEL(S):-	EF500P	
#	DATE	VER# DESCRIPTION OF CHANGE
1	AUG 22 2001	2.00 1st RUN CHANGES FOR VER.2.00
2	D	V SEE ATTACHED NOTES ON P.C.B. DATA BASE
3	SEPT 18 2001	2.00 CHANGE R28 FROM 10K TO 4K7 AND R24 FROM 33K TO 47K
4	SEPT 20 2001	2.10 PC#6453 R39 6R2 TO 2R2
5	OCT 22 2001	3.00 REPOUR CHASSIS GROUND FOR CSA STANDARD 4mm CLEARANCE.
6	D	V ADD COPPER POURS UNDER ALL OUTPUT DEVICES.
7	NOV 06 2001	3.10 PC#6464 R37 75R TO 150R PC#6469 R130 4K7 TO 2K
8	NOV 29 2001	4.00 MOVED TRACES UNDER 14 JACKS R3521
9	D	V R4.14 MOVE R24, ADD D21 AND C144, R27 FROM 47R TO 100R.
10	MAR/27/2002	V4.10 CHANGE R208 5K TO JUMPER, R204 5K TO 47K, R206 1K TO 220R, C140 1N5 TO 2N2
11	D	V AND C31 FROM 680P TO 100N.
12	D	V -INVERT BOTH AMP OUTPUT WIRE COLORS-INVERT BOX
13	D	V
1	1-APR-2002	4.20 PC#6513 R130 2K TO R123 1K TO 470R
2	11-APR-2002	5.00 PC#6523 UPDATE TABS, REMOVE COPPER UNDER XFMR
3	23-OCT-2003	6.00 BOARD NOT USED FOR NX5209 - REMOVE M1159A
4	19-FEB-2004	7.00 PC#6571 P.S. MODIFIED TO MEET CE SPACING STNDS.
5	OCT-07-2004	7.10 PC#6584 CHANGE POTS TO P32 STYLE
6		PC#6743 CHANGE C23, C19, C30 TO "DO NOT STUFF"
7	OCT15/2004	8.00 UPDATE TABS FOR DS PCB'S
8	SEP-13-2005	9.00 PC#6936-INCREASE SPACING OF PADS AT POW. DIODES
9		PC#6979-GT-R6&R23 #4815 12R->#2038 11R FUSIBLE
10	OCT-31-2005	PC7003-GT-R9 #4979 15K->#6104 2K2, ADD 8921 WASHER
11	APR-27-2006	PC#7098-GT-C148C18 6914 IRFP350->6967 IRFP250, PBF
12	JUN-30-2006	9.00 HA, PC#7136, REPLACE R77, R81 AND R82 WITH #4686
13		37X4 1% 1/4W, REPLACE R78 WITH TWO #4611

M1159			
MODEL(S):-	EF500P		
#	DATE	VER#	DESCRIPTION OF CHANGE
1	AUG 22 2001	2.00	1ST RUN CHANGES FOR VER.2.00
2	1	V	SEE ATTACHED NOTES ON DATA BASE.
3	SEPT 18 2001	2.10	CHANGE R28 FROM 10K TO 4K7 AND R34 FROM 33K TO 47K
4	SEPT 20 2001	2.10	PC#6453 R39 R62 TO 2R2
5	OCT 22 2001	3.00	REFLOW ALL SOLDER GROUND FOR CSA STANDARD 4mm CLEARANCE.
6	D	V	ADD COPPER POURS UNDER ALL OUTPUT DEVICES.
7	NOV 06 2001	3.10	PC#6464 R37 75R TO 150R PC#6468 R130 4K7 TO 2K
8	NOV 29 2001	4.00	MOVED TRACES UNDER 14" JACKS #9321
9	D	V	MOVE R24, ADD D21 AND C144, R27 FROM 47R TO 100R.
10	MAR/27/2002	V4.10	CHANGE R208 3K TO JUMPER, R204 3K TO 47K, R206 1K TO 220R, C140 1N5 TO 2N2 AND C91 FROM 880P TO 100N
11	D	V	INVERT BOTH AMP OUTPUT WIRE COLORS-INVERT BOX
12	D	V	
13	D	V	
1	1-APR-2002	4.20	PC#6513 R130 2K TO R123 1K TO 470R
2	11-APR-2002	4.20	PC#6523 UPDATE TABS, REMOVE COPPER UNDER XFMR BOARD NOT USED FOR NX520P - REMOVE M1159A
3	19-FEB-2004	7.00	PC#6671 P.S. MODIFIED TO MEET CE SPACING STNDS.
4	OCT-07-2004	7.10	PC#6694 CHANGE POTS TO P32 STYLE
5			PC#6743 CHG C23, C19, C30 TO "DO NOT STUFF"
6			UPDATE TABS FOR DS PCB'S
7	OCT/15/2004	8.00	PC#6984:INCREASE SPACING OF PADS AT POW, DIODES
8	SEP-13-2005	8.00	PC#6979:GT.R66R23 #4615 12R->#2038 11R FUSIBLE
9			PC7003:GT.R5 #4978 15K->#6104 2K2, ADD #821 WASHER
10	OCT-31-2005		PC#7098:GT.Q1&Q15 6914 IRFP350->6967 IRFP23N50LPBF
11	APR-27-2006		HA,PC#7136, REPLACE R77, R81 AND R82 WITH #4686
12	AUG-16-2006	9.01	37K4 1% 1/4W, REPLACE R78 WITH TWO #4611
13			

M1159					
MODEL(S):-	EF500P				
REFUNCTION	OLD PART	KNOB	NEW PART	KNOB	
P1	MAIN GAIN	4537	8363	4434	9916
P2	MIC GAIN	4566	8362	4434	9916
P3	BASS TONE	4566	8364	4435	9917
P4	LINE GAIN	4566	8362	4432	9915
R	HORN TONE	4537	8364	4434	9916
R	F	O	K	N	K
R	F	O	K	N	K
R	F	O	K	N	K
R	F	O	K	N	K
R	F	O	K	N	K
R	F	O	K	N	K
R	F	O	K	N	K

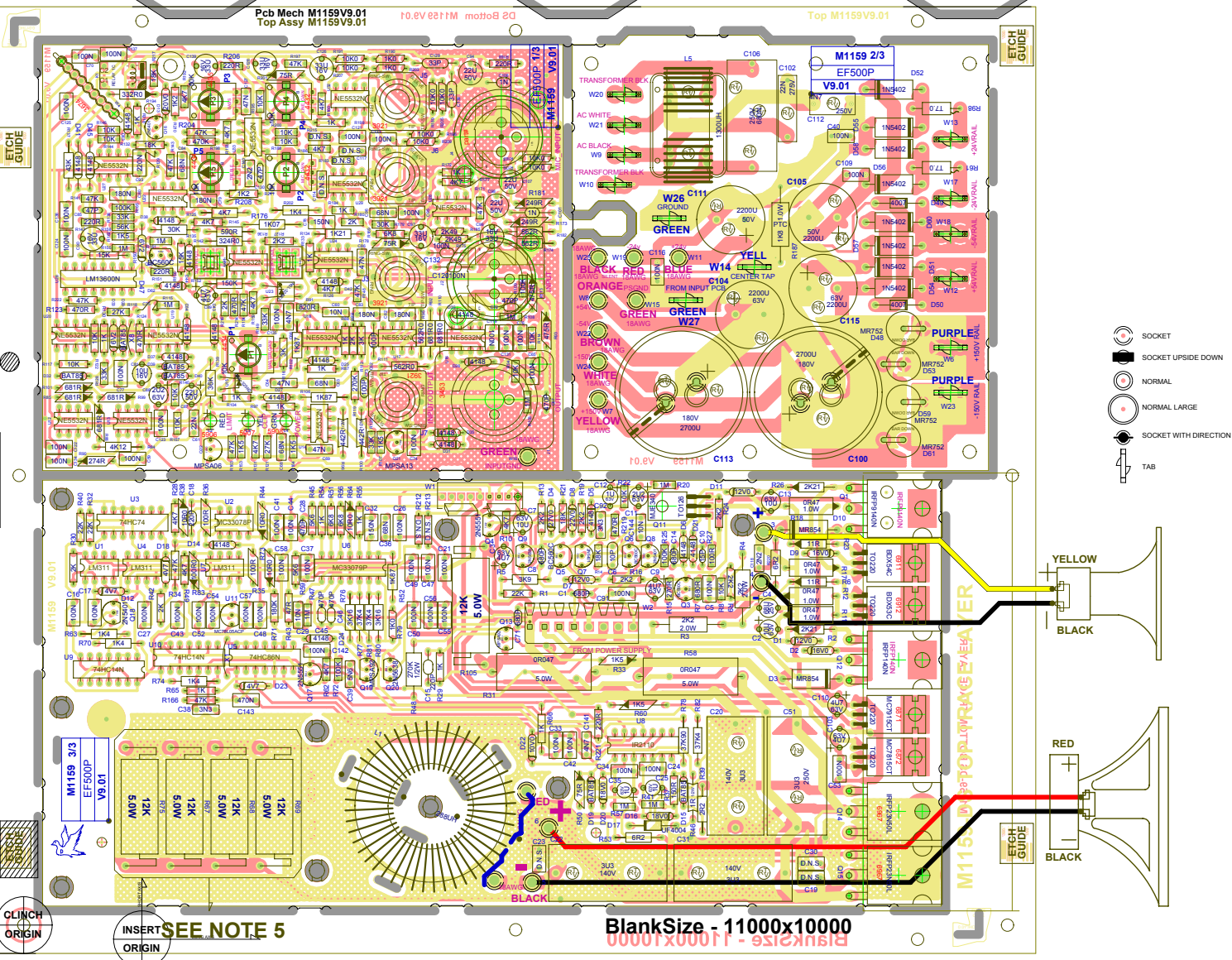


PRODUCTION NOTES

- NOTE THAT THER IS SEVERAL LINES ON THE DSBOTMASK LAYER. THESE MAY BE USED FOR MARCONI TEST POINTS SO HAVE THIS LAYER ON IF DOING ANY MODIFICATIONS.
- SLIDE EMI FILTER OVER RIBBON BEFORE INSERTING INTO P.C.B.
- ADD AMPLE RTV UNDER ENTIRE BASE OF OUTPUT COIL L1
- LEADS FOR 5 WATT RESISTORS MUST BE BENT ON THE MACHINE LEAD LOOP MUST NOT BE ABOVE TOP OF RESISTOR
- #5858 Apply a ring of RTV on cap's sleeve as shown
- Q11 ONLY: Mount #8871 4-40 screw with head on bottom. #5793 nut and 3501 washer on top
- FIT #8921 FLAT WASHER BETWEEN #3501 BELL WASHER AND #8667 SHOULDER WASHER FOR Q2, Q10 U30 AND U31
*NOTE: IF THE NX520P MODEL IS BEING USED AS A REFERENCE, NOTE THAT THE HORN OF THE EF500P IS WIRED OPPOSITE TO THAT OF THE NX520P.
- REPLACE R78 WITH TWO #4611

M1159 PENDING CHANGES	
MODEL(S):-	EF500P
#	PC#
1	PC
2	7091
3	PC
4	PC
5	PC
6	PC
7	PC
8	PC
9	PC
10	PC
11	PC
12	PC
13	PC

*PLACE IMPLEMENTED CHANGES INTO BOARD HISTORY



SEE NOTE 5

BlankSize - 11000x10000
BlankSize - 11000x10000

NOTE: COMPONENTS R183, C114, C117, R215, C30, C19, AND C23 ARE ALL DNS (DO NOT STUFF). THEY ARE FIXED SO THAT THEY WILL NOT GET FORCE UPDATED.

We have experienced some failures with the short pilot runs of 520P and EF500P due to an incorrectly mounted resistor on the power board. There are only about a dozen of each of these in each of our market territories. These failures at first sight will seem somewhat intimidating due to the blackening soot which is produced when the resistor arcs out to the printed high voltage rails under the resistor designated R60. The damage looks far worse than it really is and is generally repairable by anyone with basic electronics and soldering skills.

The greatest difficulty with servicing class "D" amplifiers is that most service people have never serviced one before. And, like all things new, they don't like being in unfamiliar water. When you have done a couple of these kinds of amps, you will realize that they are probably easier to repair than their linear counterparts. But there are two dramatic differences to be observed in testing this class of amp. They are:

- 1) You cannot soft start this type of amplifier as it has an error amplifier, which will deny start up at low voltage.
- 2) You must have a load connected to the output upon startup. The amp sends a test pulse upon startup which must be registered in the feedback loop before it will activate the driver chip. If there is no load there is no current in the output, if there is no current, there is no voltage and consequently no feedback pulse.

The good news is that this class of amp will generally not cook off if you failed to repair it and then try to fire it up. It usually just sits there dumbfounded waiting for you to find the missing faulty bits.

The process for repair of units suffering from an R60 arc over is as follows.

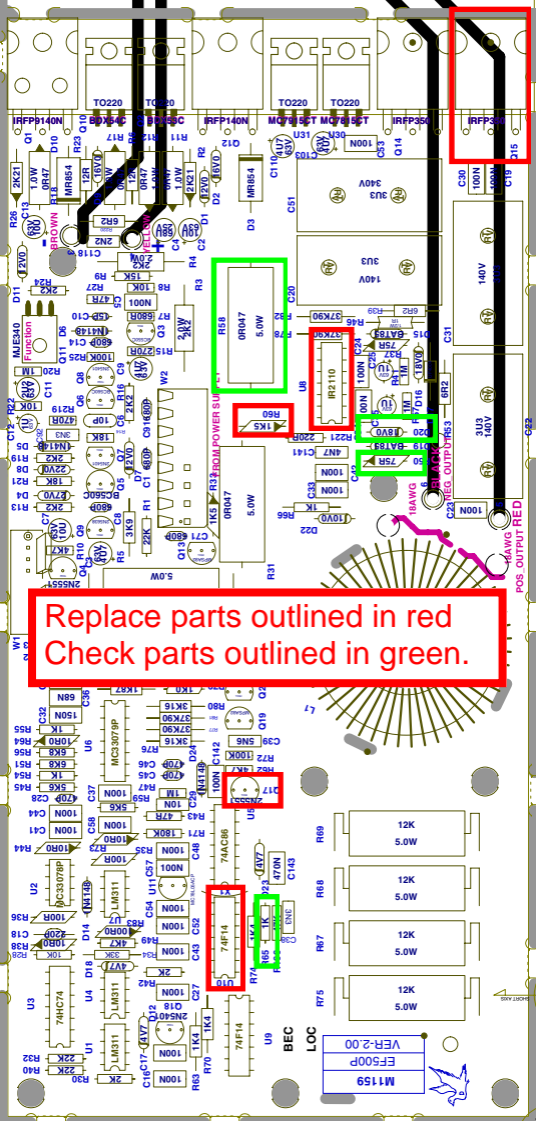
- A) Remove the remains of R60 and clean the soot from the board. Please remember this is a double-sided circuit board with thru plated component holes. Do not use excess force to remove the component leads from their solder holes. They will come out easy enough when you have enough heat on the joint.
- B) Replace the following components : 1) Q15 , IRFP350 2) Q17 , 2N5551 3) U10 , 74HC14N 4) U8 , IR2110 And finally, R60 , 1K5 , which should be installed about ¼" above the board so as not to arc out to the high voltage traces again.
- C) Measure the following parts; just to be sure we don't have any stragglers. 1) R58, .47ohms 2) R50 , 75R 3) R65 , 1K and 4) D20 , 18 volt zener.
- D) Yorkville Part #'s (Q15 = 6914) (Q17 = 5107) (U10 = 6603) (U8 = 6887) (R60 = 2034)

When all the bits have been replaced and the other parts measured, you are ready to fire it up.

Do not forget the startup rules mentioned above and you should have a 95% chance of a first shot success on the job.

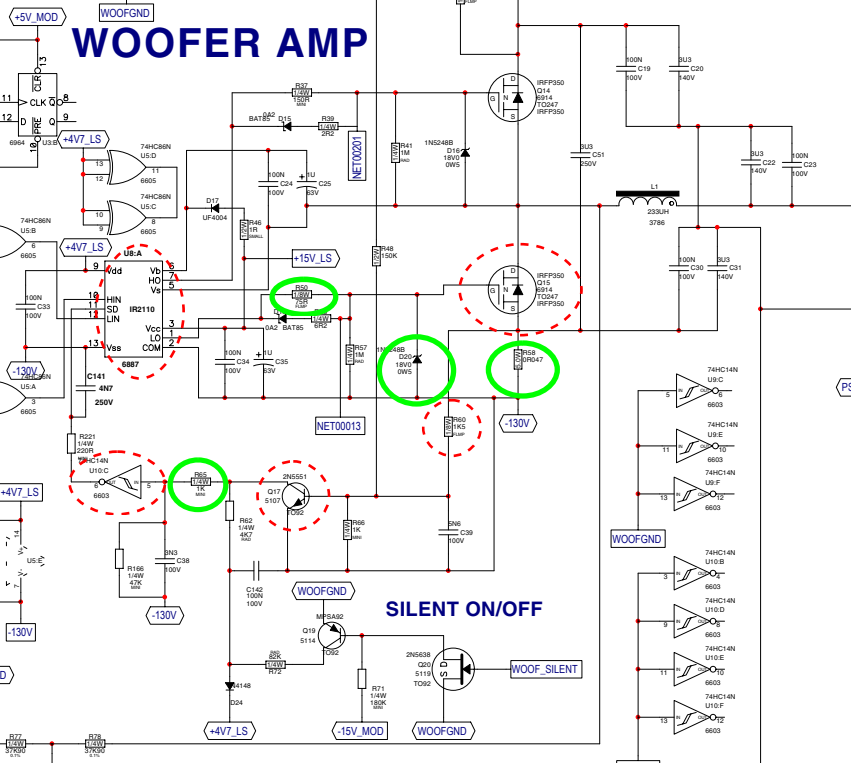
Address any further questions to: Guy Beresford (gberesford@yorkville.com) or 905-837-8481 extension 236.

Replace parts outlined in red
Check parts outlined in green.



WOOFGRND

WOOFER AMP



SILENT ON/OFF

WOOFGRND

WOOF_SILENT