



SERVICE MANUAL

nx520p

TYPE:YS1002

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

WORLD HEADQUARTERS CANADA

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550 Granite Court
Pickering, Ontario
L1W-3Y8 CANADA

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U.S.A.

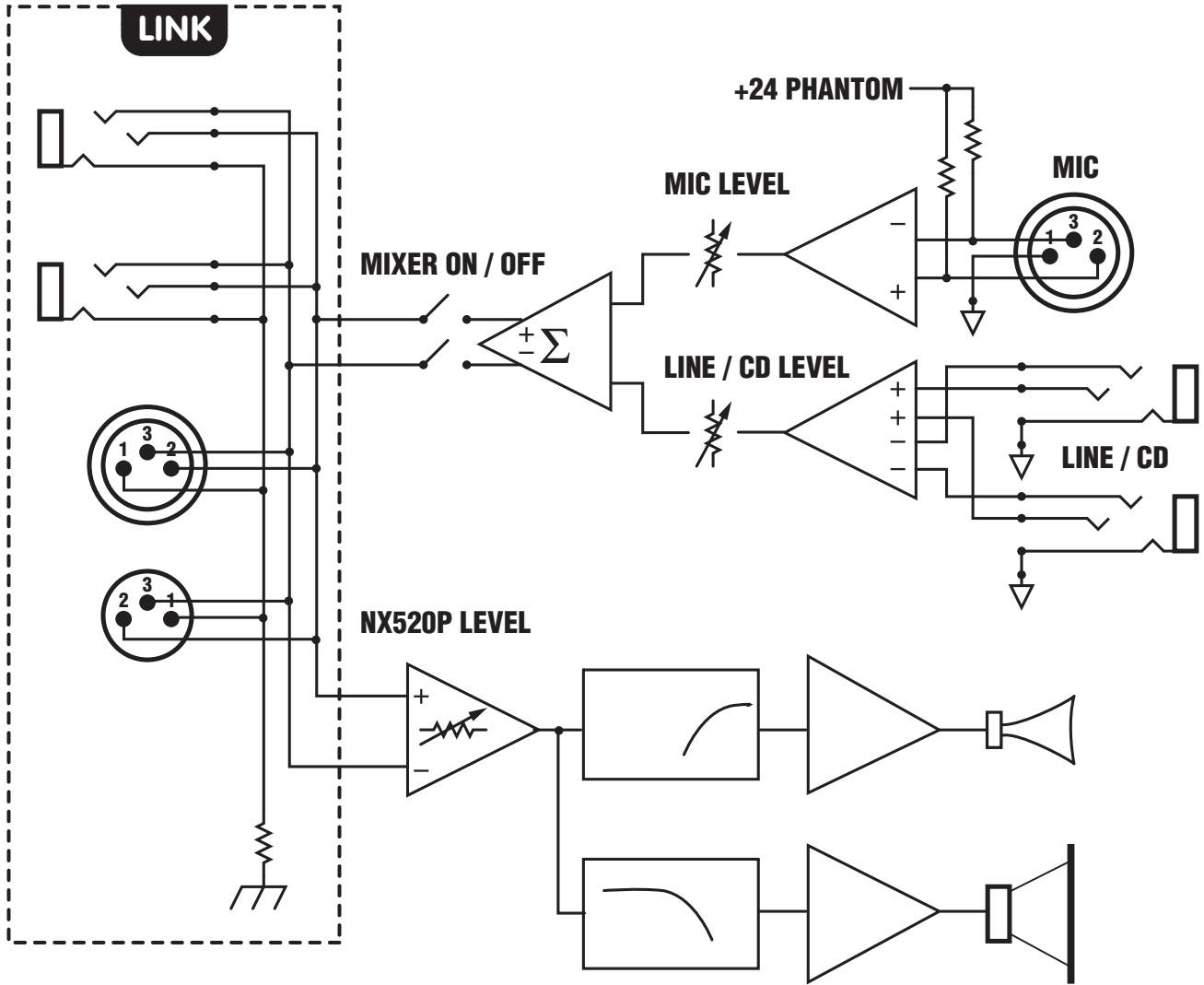
Yorkville Sound Inc.
4625 Witmer Industrial Estate
Niagara Falls, New York
14305 USA

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



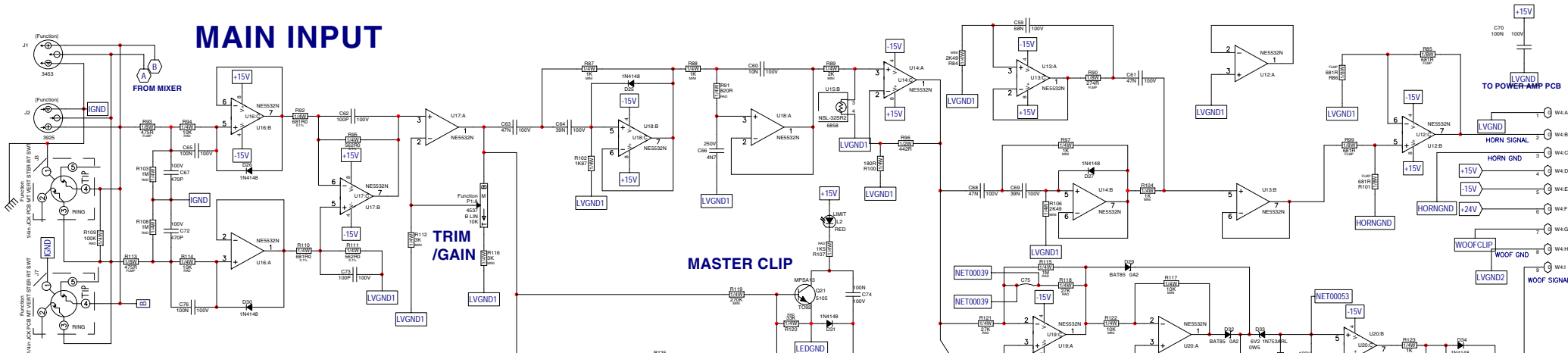
Quality and Innovation Since 1963
Printed in Canada



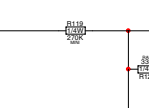


- NOTES:**
- ALL LINK CONNECTIONS FUNCTION AS INPUTS OR OUTPUTS.
 - EXTERNAL MIXERS CONNECT TO LINK INPUTS

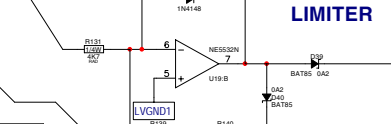
MAIN INPUT



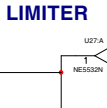
MASTER CLIP



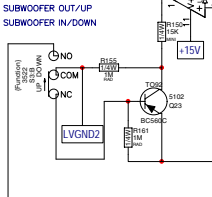
LIMITER



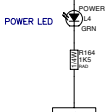
LIMITER



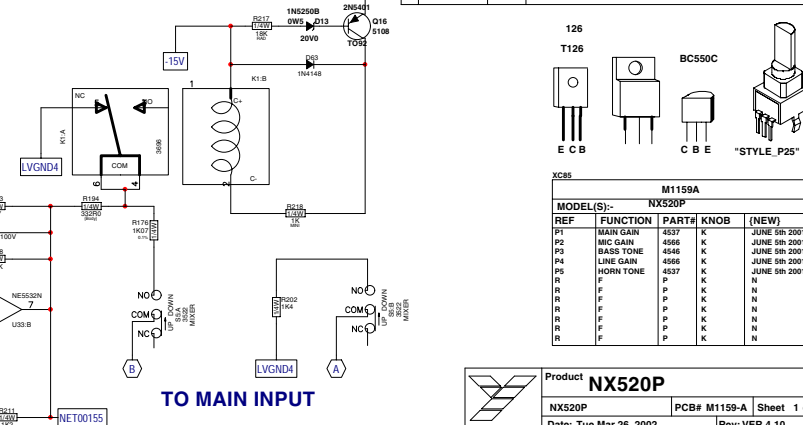
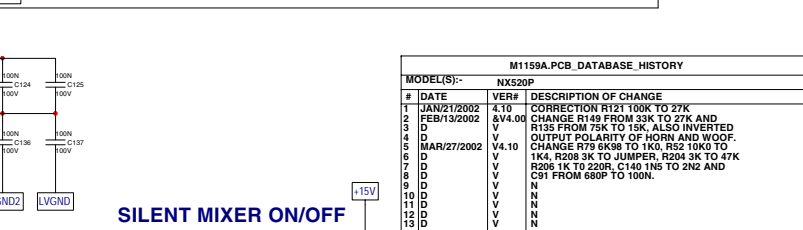
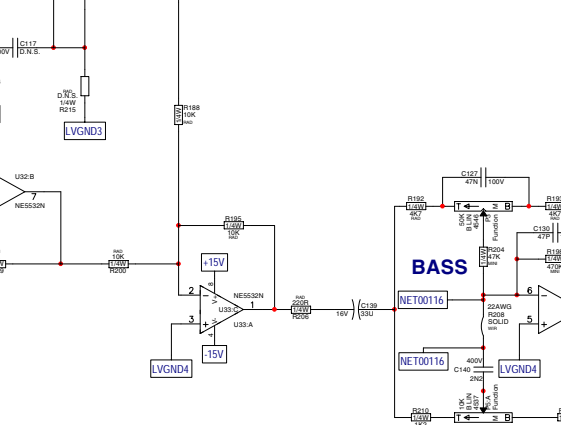
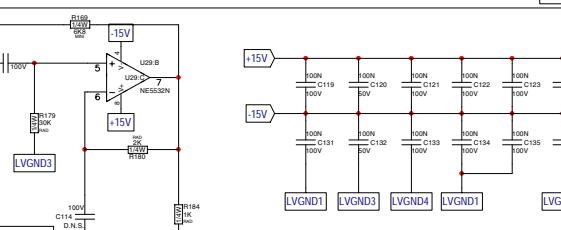
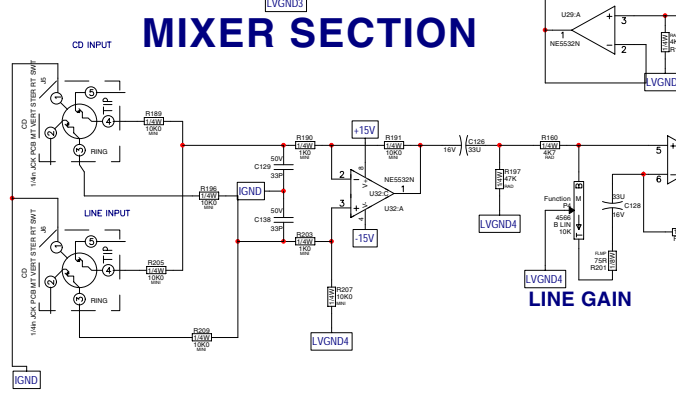
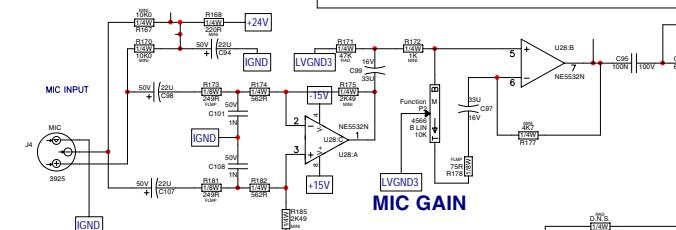
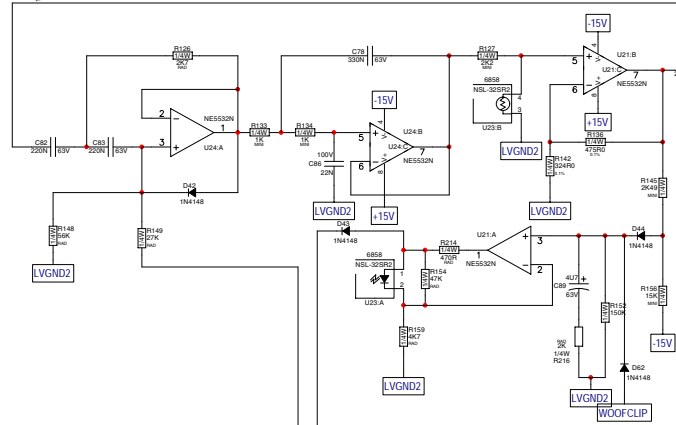
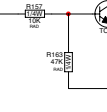
SUBWOOFER OUT/UP SUBWOOFER IN/DOWN



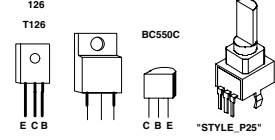
POWER LED



LIMITER SENSE



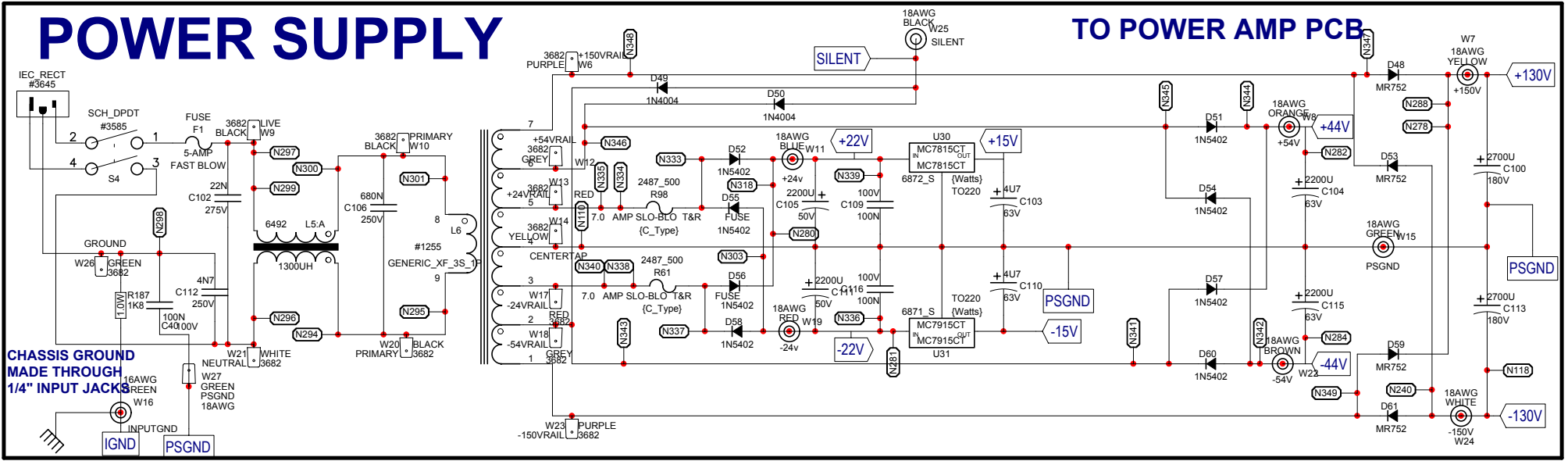
M1159A.PCB_DATABASE_HISTORY		
MODEL(S):-	VER#	DESCRIPTION OF CHANGE
	NX520P	
1	DATE	VER#
2	JAN/21/2002	4.10
3	FEB/13/2002	4.10
4	D	4.10
5	MAR/27/2002	V.4.10
6	D	V.4.10
7	D	V.4.10
8	D	V.4.10
9	D	V.4.10
10	D	V.4.10
11	D	V.4.10
12	D	V.4.10
13	D	V.4.10



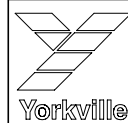
M1159A				
REF	FUNCTION	PART#	KNOB	(NEW)
P1	MAIN GAIN	4537	K	JUNE 9th 2001
P2	MIC GAIN	4566	K	JUNE 9th 2001
P3	BASS TONE	4546	K	JUNE 9th 2001
P4	LINE GAIN	4566	K	JUNE 9th 2001
P5	HORN TONE	4537	K	JUNE 9th 2001
R1	F	P	K	N
R2	F	P	K	N
R3	F	P	K	N
R4	F	P	K	N
R5	F	P	K	N
R6	F	P	K	N
R7	F	P	K	N
R8	F	P	K	N

POWER SUPPLY

TO POWER AMP PCB



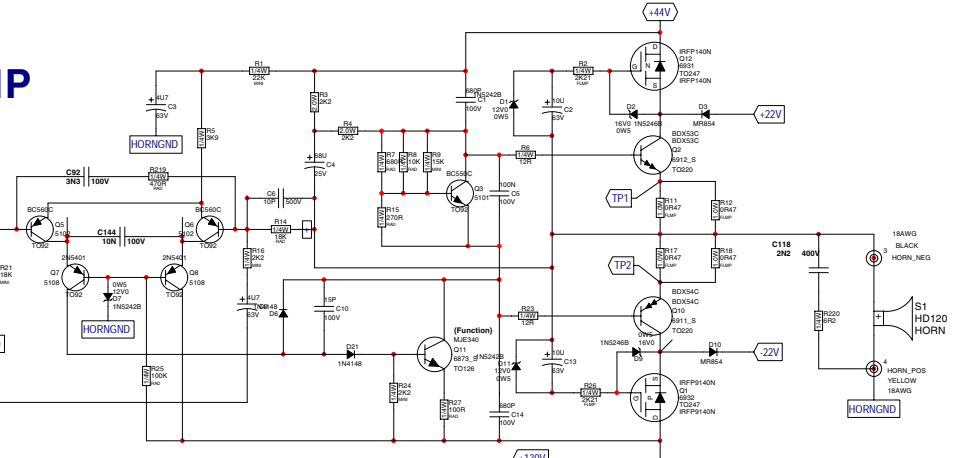
CHASSIS GROUND
MADE THROUGH
1/4" INPUT JACKS



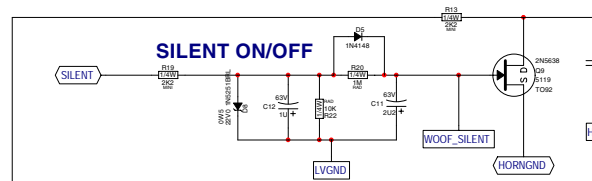
Product NX520P		
NX520P	PCB# M1159-A	Sheet 3 of 4
Date: Wed Apr 23, 2003		Rev: VER.4.10
Filename: M1159-A-VER4.10.sch2001		

M1159A.PCB_DATABASE_HISTORY			
MODEL(S):-		NX520P	
#	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 R34 FROM 33K TO 47K
4	SEPT 20 2001	2.10	PC#6433 R39 6R2 TO 2R2
5	OCT 22 2001	3.10	REPAIR CHASSIS GROUND FOR CSA STANDARD 4mm CLEARANCE.
6	NOV 06 2001	3.10	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 1/4 JACKS #3921
9	D	N	MOVE R24, ADD D21 AND C144, R27 FROM 47R TO 100R.
10	D	N	&V4.11
11	D	N	
12	D	N	
13	D	N	

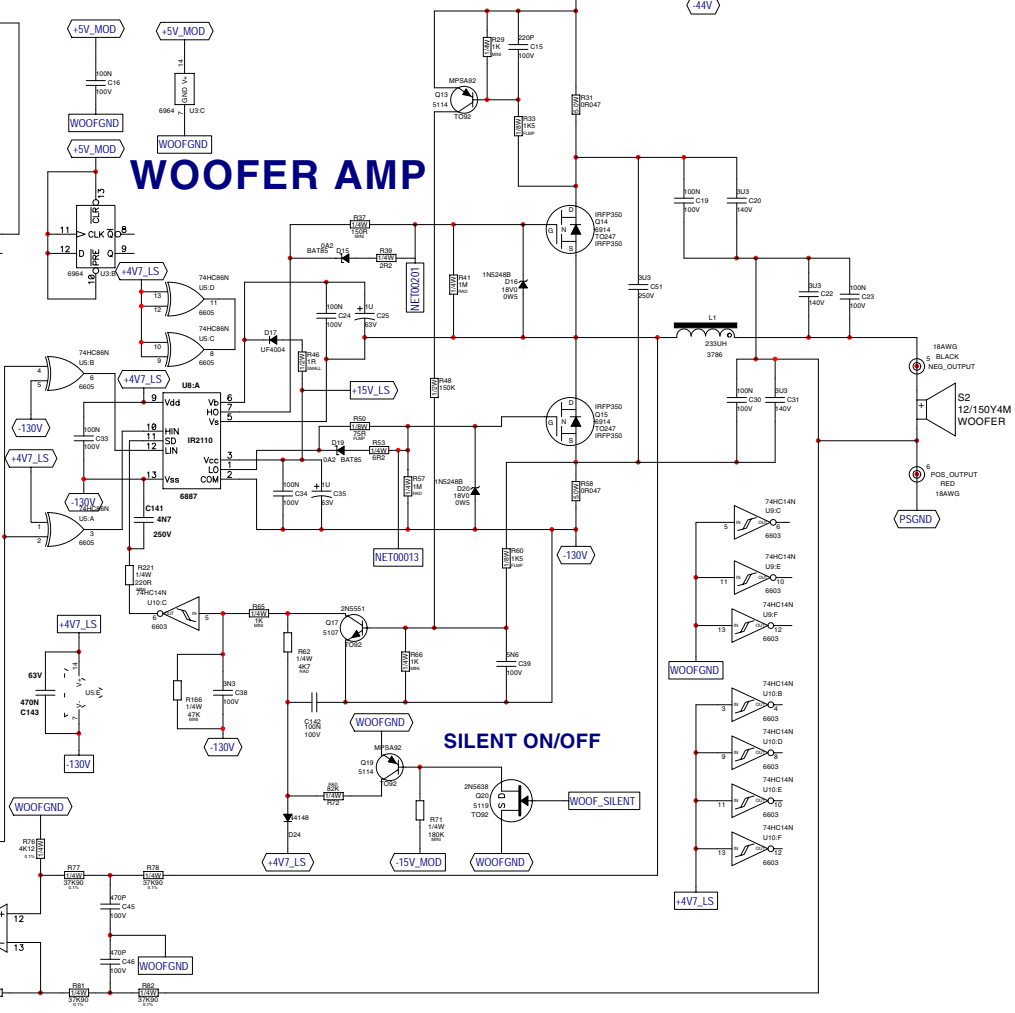
HORN AMP



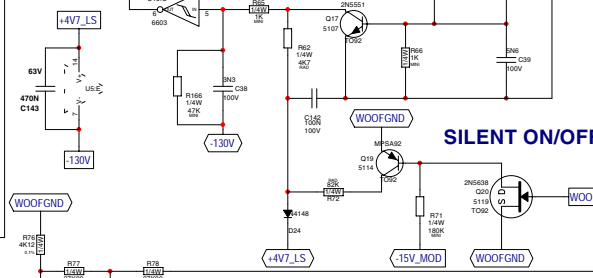
SILENT ON/OFF



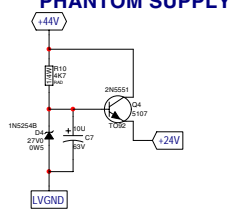
WOOFER AMP



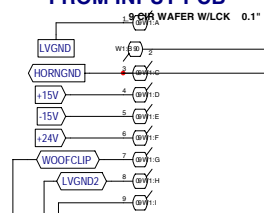
SILENT ON/OFF



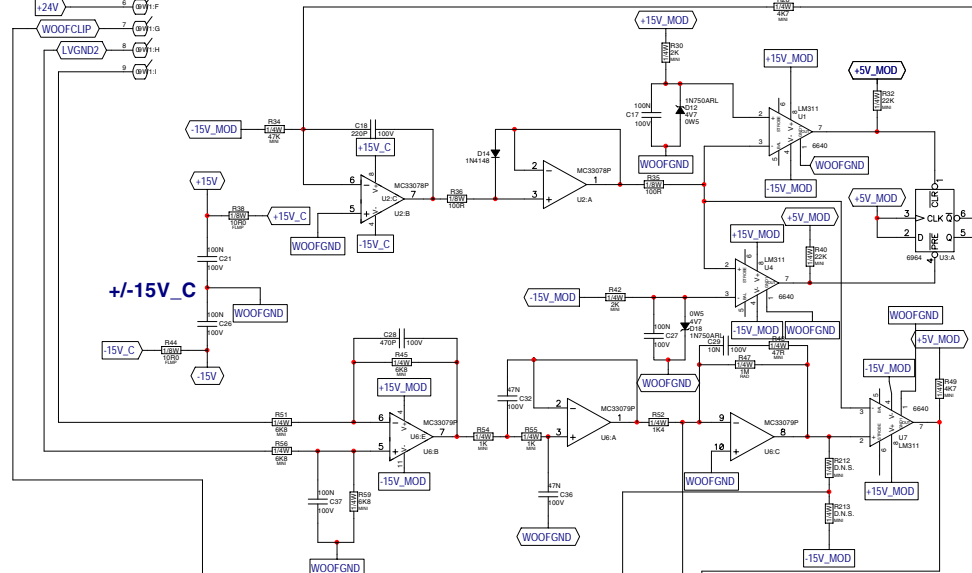
PHANTOM SUPPLY



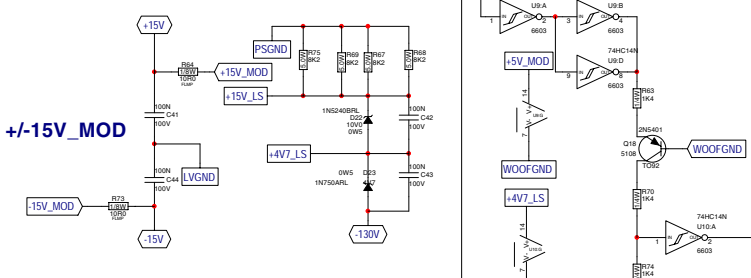
FROM INPUT PCB



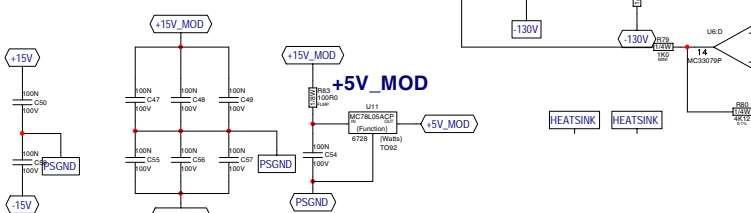
+/-15V_C



+/-15V_MOD



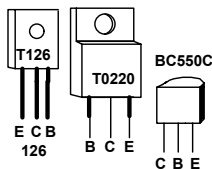
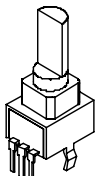
+5V_MOD



M1159A.PCB_DATABASE_HISTORY			
MODEL(S):-	VER#	DESCRIPTION OF CHANGE	
#	DATE	VER#	DESCRIPTION OF CHANGE
1	JAN/21/2002	4.10	CORRECTION R121 100K TO 27K AND R135 FROM 75K TO 15K, ALSO INVERTED OUTPUT POLARITY OF HORN AND WOOF.
2	FEB/13/2002	&V4.00	CHANGE R149 FROM 33K TO 27K AND R135 FROM 75K TO 15K, ALSO INVERTED OUTPUT POLARITY OF HORN AND WOOF.
3	D	V	CHANGE R79 6K98 TO 1K0, R52 10K0 TO 1K4, R206 3K TO JUMPER, R204 3K TO 47K
4	D	V4.10	R206 1K TO 220R, C140 1N5 TO 2N2 AND C91 FROM 680P TO 100N.
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

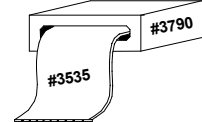
M1159A.PCB_DATABASE_HISTORY			
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#	DATE	VER#	DESCRIPTION OF CHANGE
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2	D	V	SEE ATTACHED NOTES ON DATA BASE.
3	SEPT 18 2001	2.00	CHANGE R28 FROM 10K TO 4K7 AND R34 FROM 33K TO 47K
4	SEPT 20 2001	2.10	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 1/4" JACKS #3921 &V4.10
9	APR 11, 2002	5.00	UPDATE TABS
10	D	V	PC#6513 R123 1K TO 470R, R130 2K TO 1K
11	D	V	N
12	D	V	N
13	D	V	N

M1159A					
MODEL(S):-	FUNCTION	PART#	NOB	{NEW}	
REF	FUNCTION	PART#	NOB	{NEW}	
P1	MAIN GAIN	4537	K	JUNE 5th 2001	
P2	MIC GAIN	4566	K	JUNE 5th 2001	
P3	BASS TONE	4546	K	JUNE 5th 2001	
P4	LINE GAIN	4566	K	JUNE 5th 2001	
P5	HORN TONE	4537	K	JUNE 5th 2001	
R	F	P	K	N	
R	F	P	K	N	
R	F	P	K	N	
R	F	P	K	N	
R	F	P	K	N	
R	F	P	K	N	



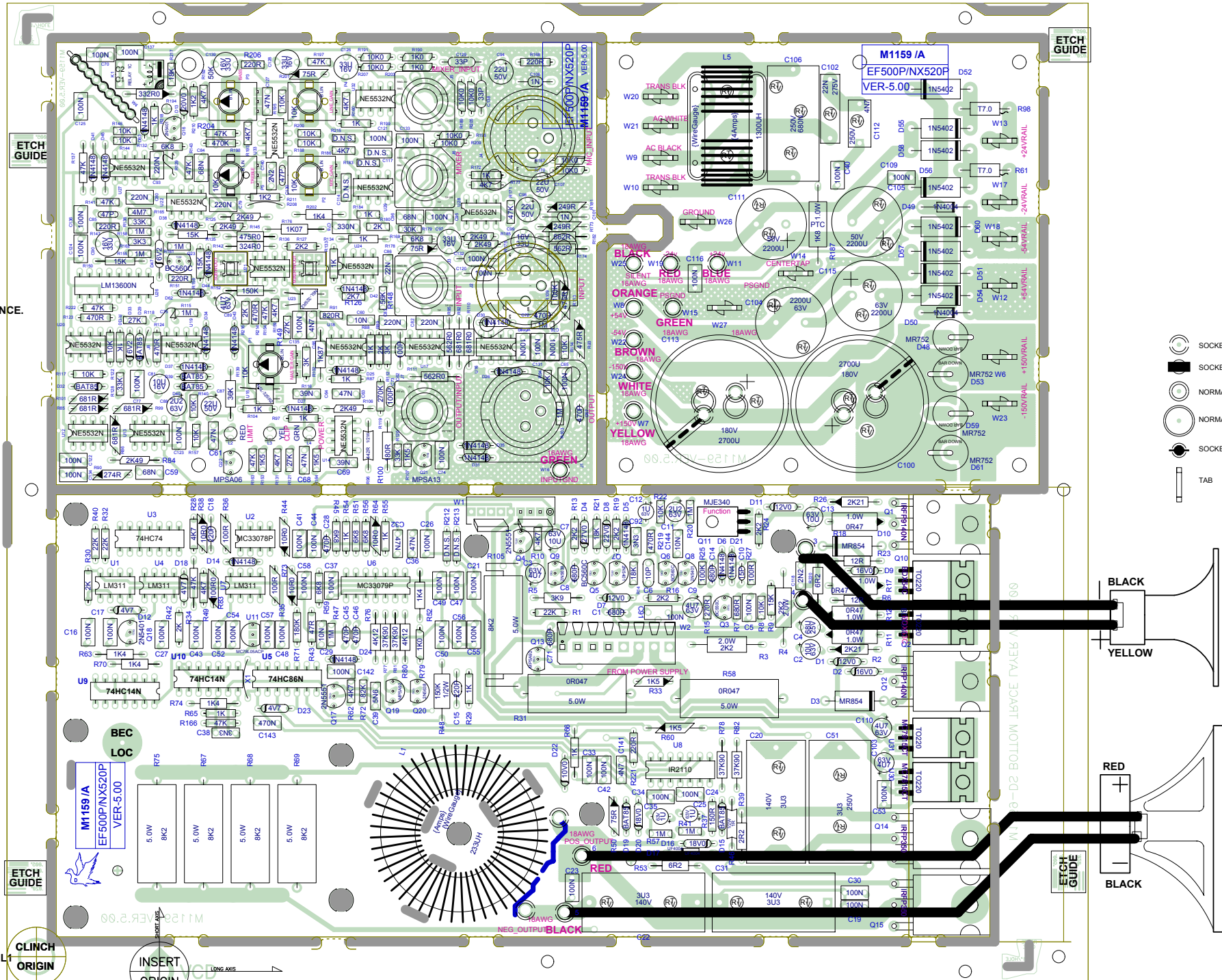
"STYLE_P25" PRODUCTION NOTES

- NOTE THAT THERE IS SEVERAL LINES ON THE DSBOTMASK LAYER. THESE MAY BE USED FOR MARCONI TEST POINTS SO HAVE THIS LAYER ON IF DOING ANY MODIFICATIONS.
- NOTE THAT HORN WIRES FOR NX520P AND EF500P ARE OPPOSITE IN COLOR W.R.T. PCB INSERTION. CHECK PROPER LAYOUT FOR CORRECT COLORS
- SLIDE EMI FILTER OVER RIBBON BEFORE INSERTING INTO P.C.B.



*****IMPORTANT*****
4. ADD AMPLE RTV UNDER ENTIRE BASE OF OUTPUT COIL

M1159A-NX520P



- SOCKET
- SOCKET UPSIDE DOWN
- NORMAL
- NORMAL LARGE
- SOCKET WITH DIRECTION
- TAB

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.

WOOFER AMP

