

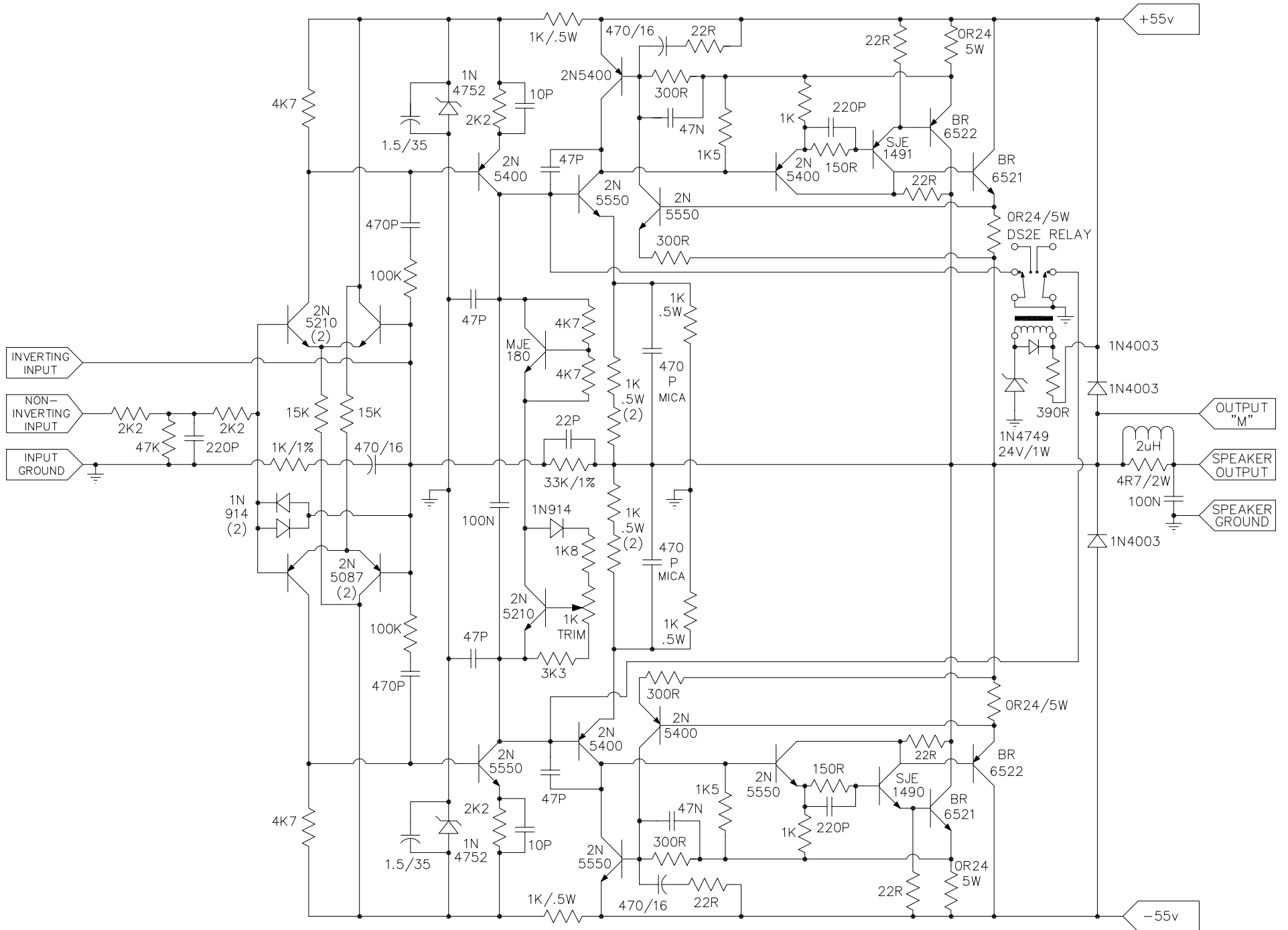
The logo for BRYSTON, featuring the brand name in a stylized, outlined font. The letter 'B' is significantly larger than the other letters. The entire logo is contained within a solid black rectangular background.

BRYSTON

**POWER AMPLIFIER
SCHEMATICS
for models 3B~8B**

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| 25 | 7B Channel Assembly Schematic, Rev 7.0 | May 2000 | PWRSCH7B.dwg | 7B-Channel-Schematic |



ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

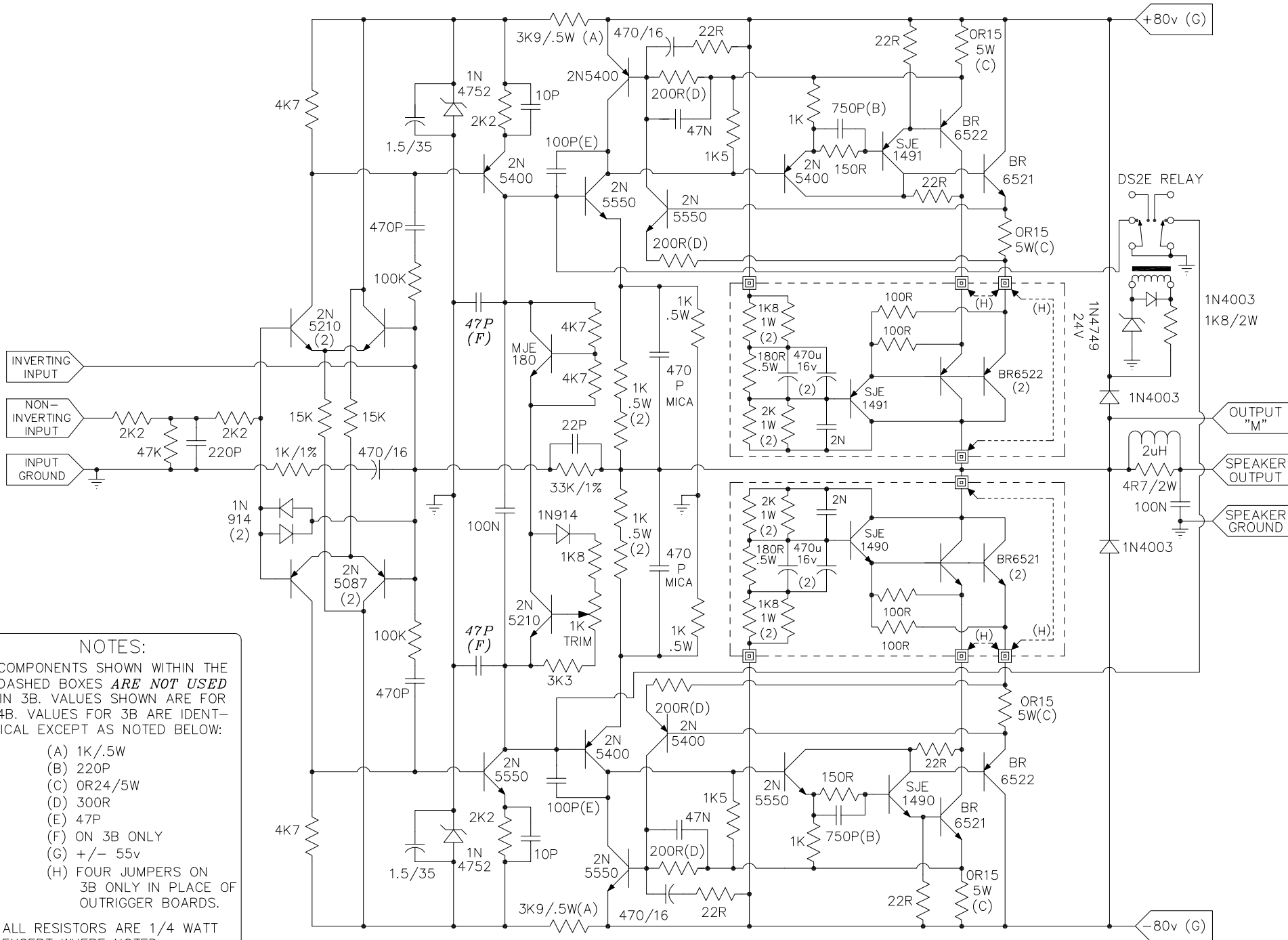


3B POWER AMPLIFIER MAIN BOARD (3B IV) SCHEMATIC

REVISION #8 20 OCT 87

DWG:

DESIGN:



NOTES:
 COMPONENTS SHOWN WITHIN THE DASHED BOXES **ARE NOT USED** IN 3B. VALUES SHOWN ARE FOR 4B. VALUES FOR 3B ARE IDENTICAL EXCEPT AS NOTED BELOW:

- (A) 1K/.5W
- (B) 220P
- (C) OR24/5W
- (D) 300R
- (E) 47P
- (F) ON 3B ONLY
- (G) +/- 55v
- (H) FOUR JUMPERS ON 3B ONLY IN PLACE OF OUTRIGGER BOARDS.

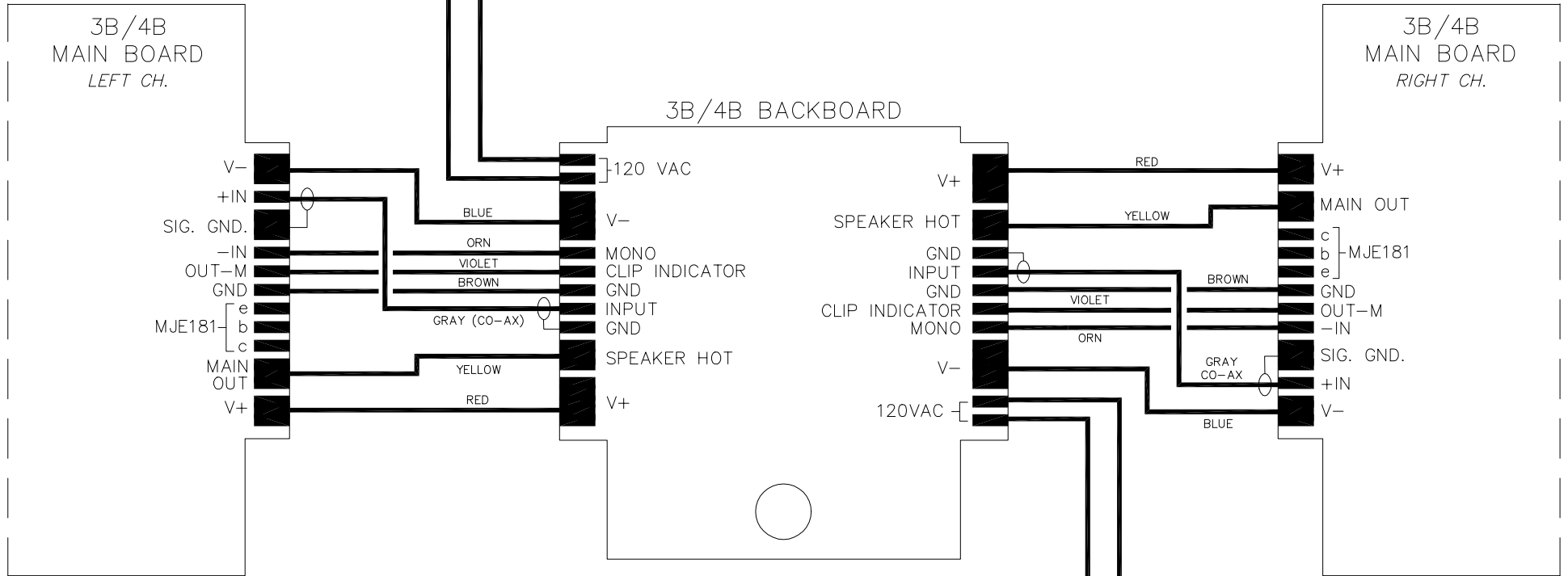
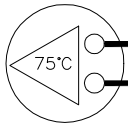
ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

☐ SYMBOL SHOWS CONNECTIONS TO OUTRIGGER PC BOARDS

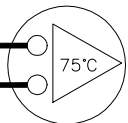


3B/4B POWER AMPLIFIER MAIN BOARD (3B IV) SCHEMATIC
 REVISION #8 12 JAN 88
 DWG: DESIGN:

THERMAL BREAKER
mounted on heatsink



THERMAL BREAKER
mounted on heatsink



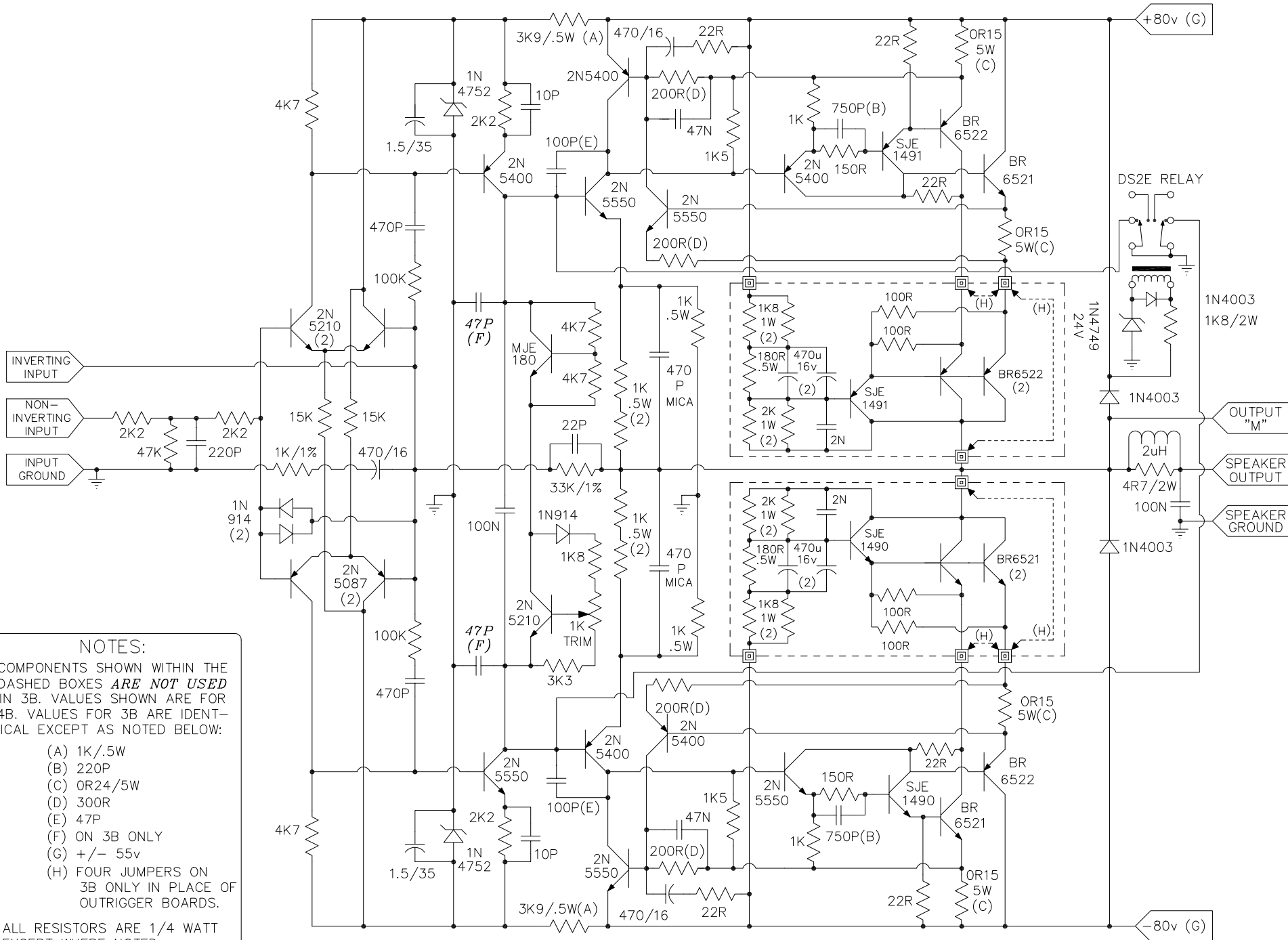
ALL BOARDS VIEWED FROM COMPONENT SIDE
MJE181 POWER TRANSISTOR (T0-126) MOUNTS BENEATH MAIN BOARD
INTO HEATSINK.



3B/4B REGULAR POWER AMPLIFIER
BACKBOARD TO MAIN BOARD HOOKUP



12 MARCH 87



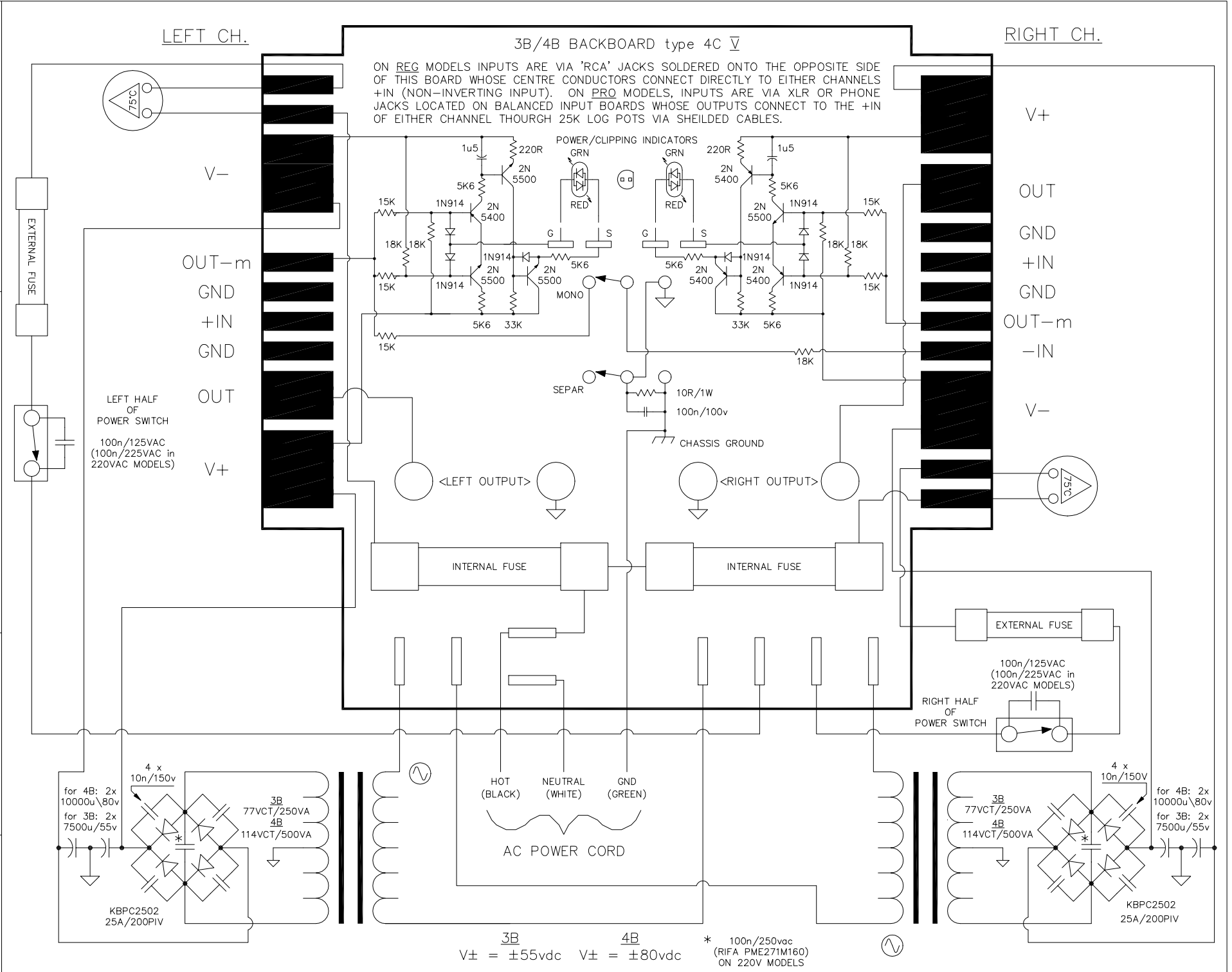
NOTES:
 COMPONENTS SHOWN WITHIN THE DASHED BOXES **ARE NOT USED** IN 3B. VALUES SHOWN ARE FOR 4B. VALUES FOR 3B ARE IDENTICAL EXCEPT AS NOTED BELOW:

- (A) 1K/.5W
- (B) 220P
- (C) OR24/5W
- (D) 300R
- (E) 47P
- (F) ON 3B ONLY
- (G) +/- 55v
- (H) FOUR JUMPERS ON 3B ONLY IN PLACE OF OUTRIGGER BOARDS.

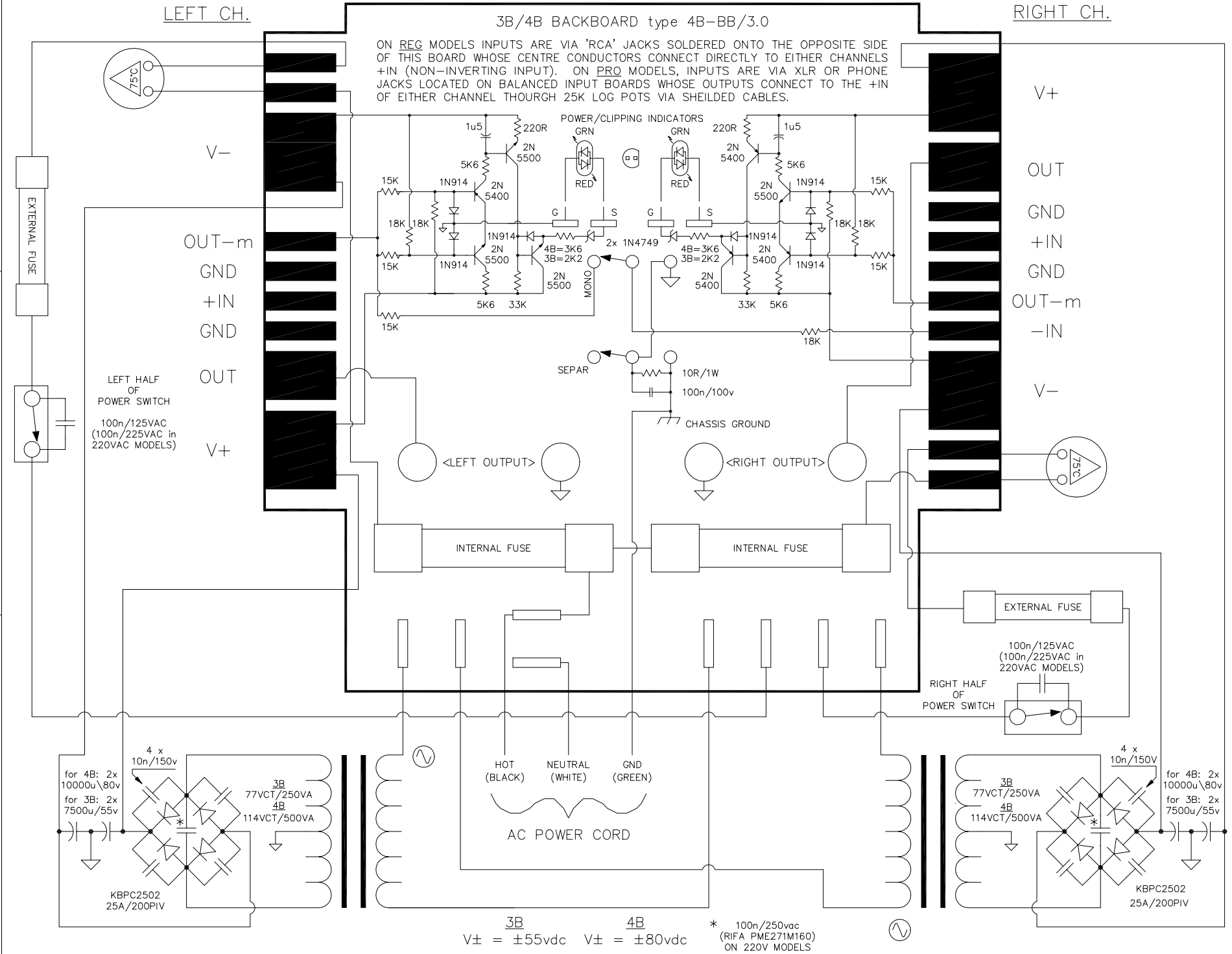
ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

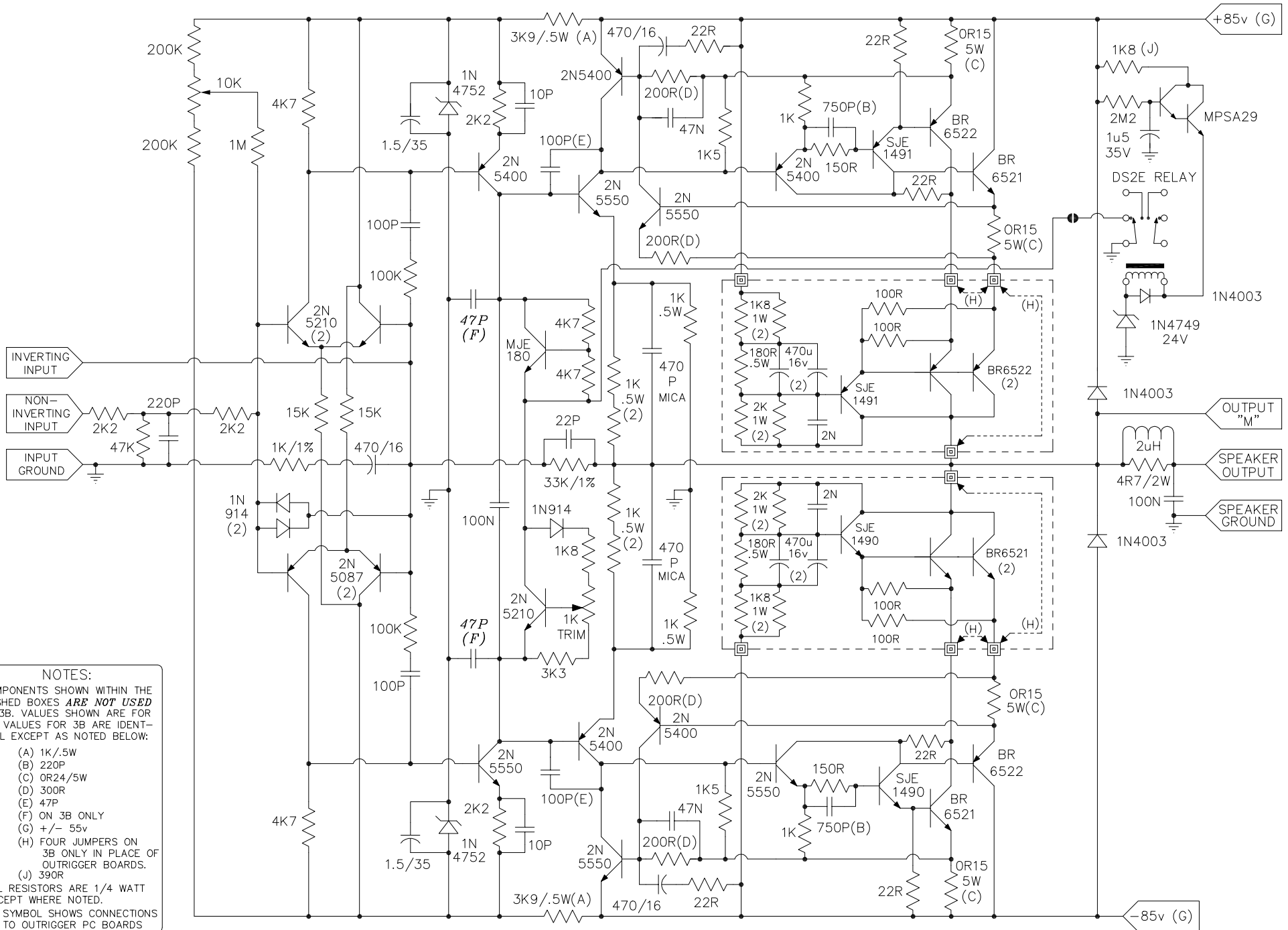
☐ SYMBOL SHOWS CONNECTIONS TO OUTRIGGER PC BOARDS





Pg. 9





NOTES:
 COMPONENTS SHOWN WITHIN THE DASHED BOXES **ARE NOT USED** IN 3B. VALUES SHOWN ARE FOR 4B. VALUES FOR 3B ARE IDENTICAL EXCEPT AS NOTED BELOW:

- (A) 1K/.5W
- (B) 220P
- (C) 0R24/5W
- (D) 300R
- (E) 47P
- (F) ON 3B ONLY
- (G) +/- 55v
- (H) FOUR JUMPERS ON 3B ONLY IN PLACE OF OUTRIGGER BOARDS.
- (J) 390R

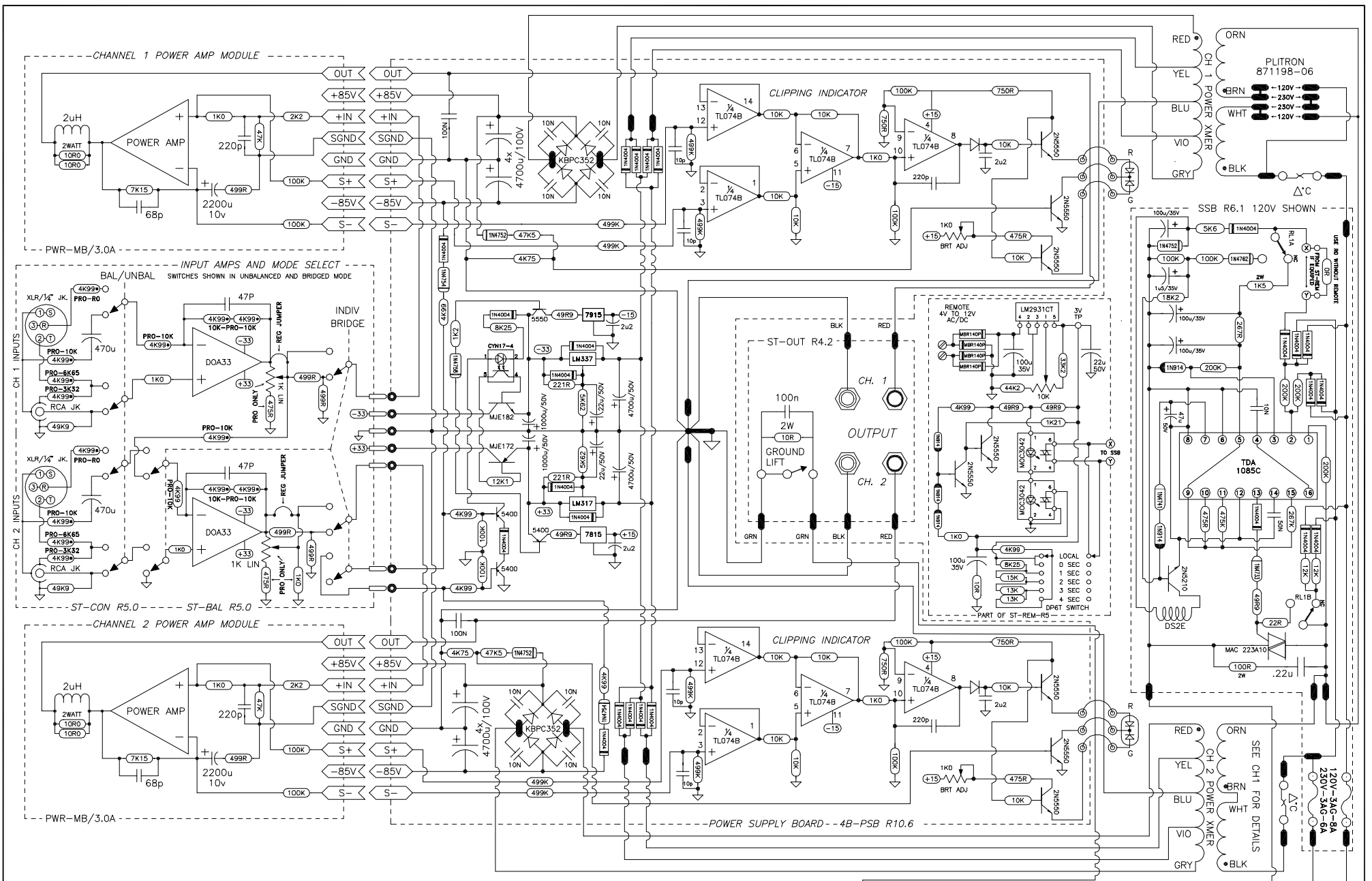
ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.
 [Symbol] SYMBOL SHOWS CONNECTIONS TO OUTRIGGER PC BOARDS

REV 9.1 JUNE 1992
 DC O/S adjust circuitry added; 2x 470pf chg'd to 100pf styrene



3B/4B POWER AMPLIFIER MAIN BOARD (7B-MB/2) SCHEMATIC
 REV 9.1 JUNE 1992 FILE: 4B-MB-S

Pg. 12



CONNECTORS

- EDGE CONNECTOR
- BOARD EDGE FINGER
- QUICK DISCONNECT TABS/SOCKETS
- SOLDER PAD FOR FLATWIRE INTERCONNECT
- HEADER INTERCONNECT

NOTES:

4BST = LEXICON 225 AMPLIFIER

ST-REM (REMOTE POWER ON/OFF) USED IN "THX" MODELS ONLY

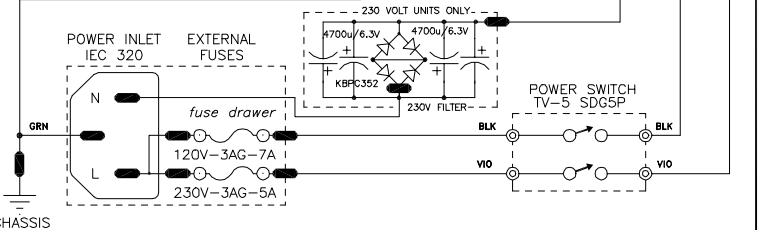
*"R" RESISTORS 0.1% SELECTED IN INPUT AMPS

ST-PRO BAL INPUTS HAVE GAIN OF 2
ST-REG BAL INPUTS HAVE UNITY GAIN
UNBAL INPUTS ALWAYS HAVE GAIN OF 2

BRVSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

**4BST AMPLIFIER
OVERALL SCHEMATIC**

Rev 10.6 SEPT 96 **ST SERIES** FILE:4BSCH106



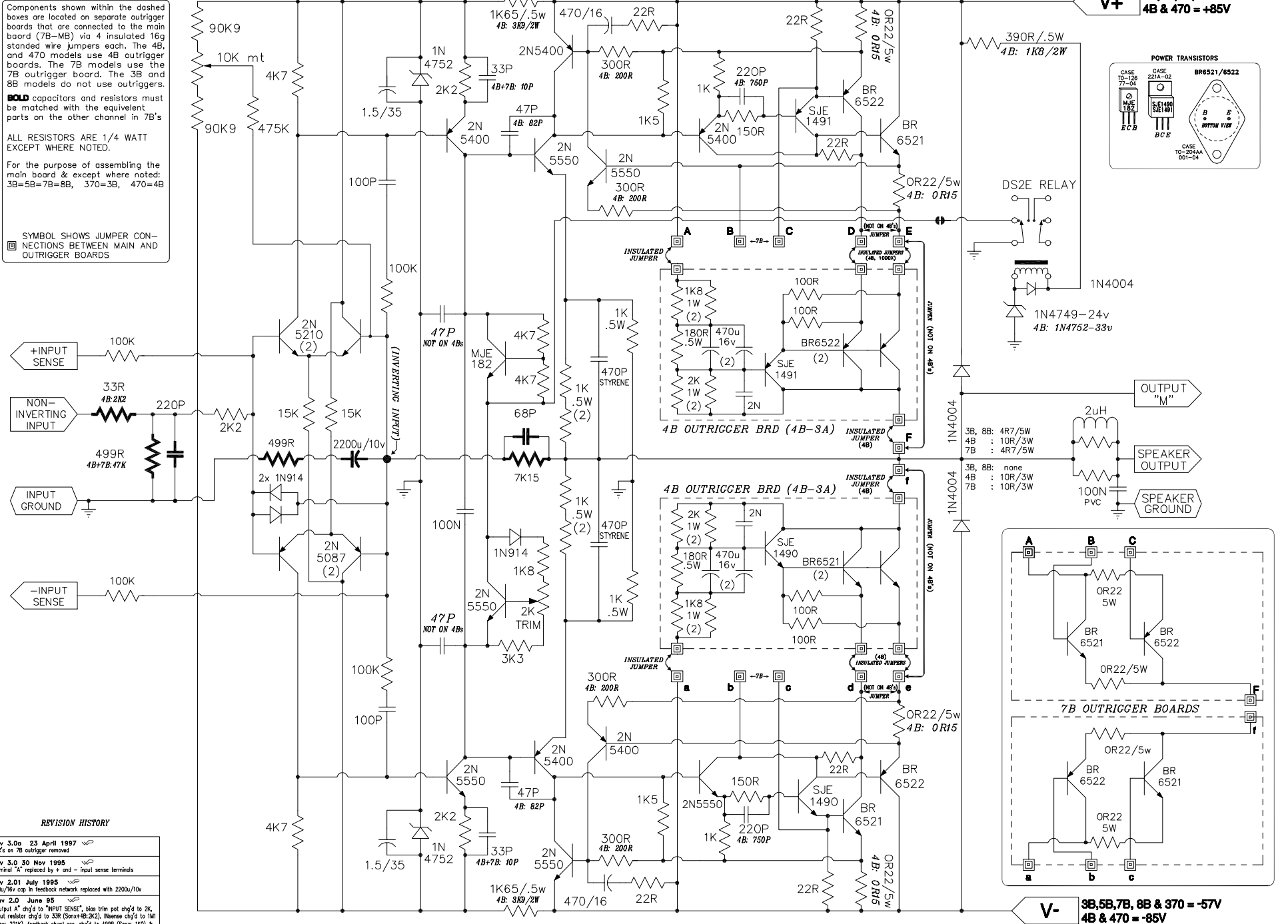
Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (7B-MB) via 4 insulated 16g stranded wire jumpers each. The 4B and 470 models use 4B outrigger boards. The 7B models use the 7B outrigger board. The 3B and 8B models do not use outriggers.

BOLD capacitors and resistors must be matched with the equivalent parts on the other channel in 7B's

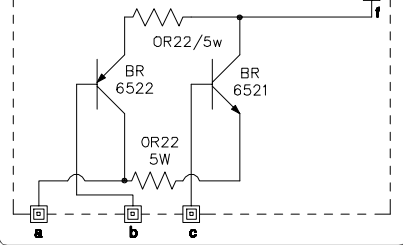
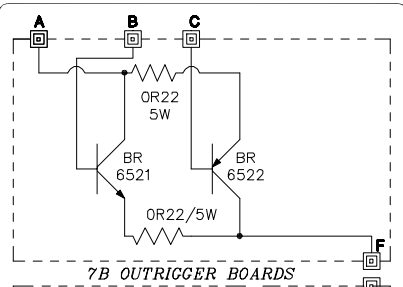
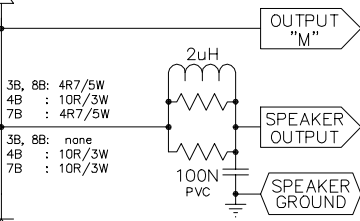
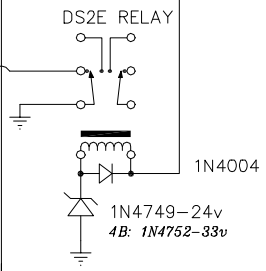
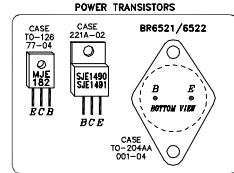
ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

For the purpose of assembling the main board & except where noted: 3B=5B=7B=8B, 370=3B, 470=4B

SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS



V+ 3B,5B,7B, 8B & 370 = +57V
4B & 470 = +85V



V- 3B,5B,7B, 8B & 370 = -57V
4B & 470 = -85V

| REVISION HISTORY | |
|------------------|--|
| Rev 3.0a | 23 April 1997 22R's on 7B outrigger removed |
| Rev 3.0 | 30 Nov 1995 Terminal 'A' replaced by + and - input sense terminals |
| Rev 2.01 | July 1995 470u/16v cap in feedback network replaced with 2200u/10v |
| Rev 2.0 | June 95 "Output A" chg'd to "INPUT SENSE", bias trim pot chg'd to 2K, input resistor chg'd to 33R (Sens+4B:2K2), in sense chg'd to 1M1 (Sens: 221K), feedback short res. chg'd to 499R (Sens: 110) & shunt cap chg'd to 100u; emitter res's chg'd to 3022/5w for 4B; feedback cap chg'd to 68p(Sens: 22p) & res chg'd to 7K15 (Sens: 33K2), DC OS limit resistors chg'd from 100K to 90K9 and from 1M to 475K & DC OS injection chg'd from non-inv to inverting input, low voltage limit chg'd to 1K65/.5w (4B: 3K9/2w) |
| Rev 2.0 | June 95 200K (2) in DC-O/S chg'd to 100K; 2N5210 in bias chg'd to 2N5550; output res chg'd to 6W; output "A" added |

BRYSTON Ltd.
P.O. Box 2170, Peterborough, Ont., Canada K9J-7Y4 (705)742-5325

File: PWR-MESS
Part No: PWR-MB-S/3.0a
Date: 23 APRIL 97
Revision: 3.0a
By: [Signature]

POWER AMPLIFIER MAIN BOARD SCHEMATIC for PWR-MB/3.0a
used in Bryston 3B, 4B, 5B, 7B, 8B, 370 & 470 amplifiers
and in Lexicon 212, 225, 312, 412, & 501 amplifiers

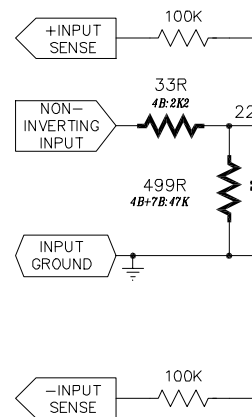
Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (7B-MB) via 4 insulated 16g stranded wire jumpers each. The 4B, and 470 models use 4B outrigger boards. The 7B models use the 7B outrigger board. The 3B and 8B models do not use outriggers.

BOLD capacitors and resistors must be matched with the equivalent parts on the other channel in 7B's

ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

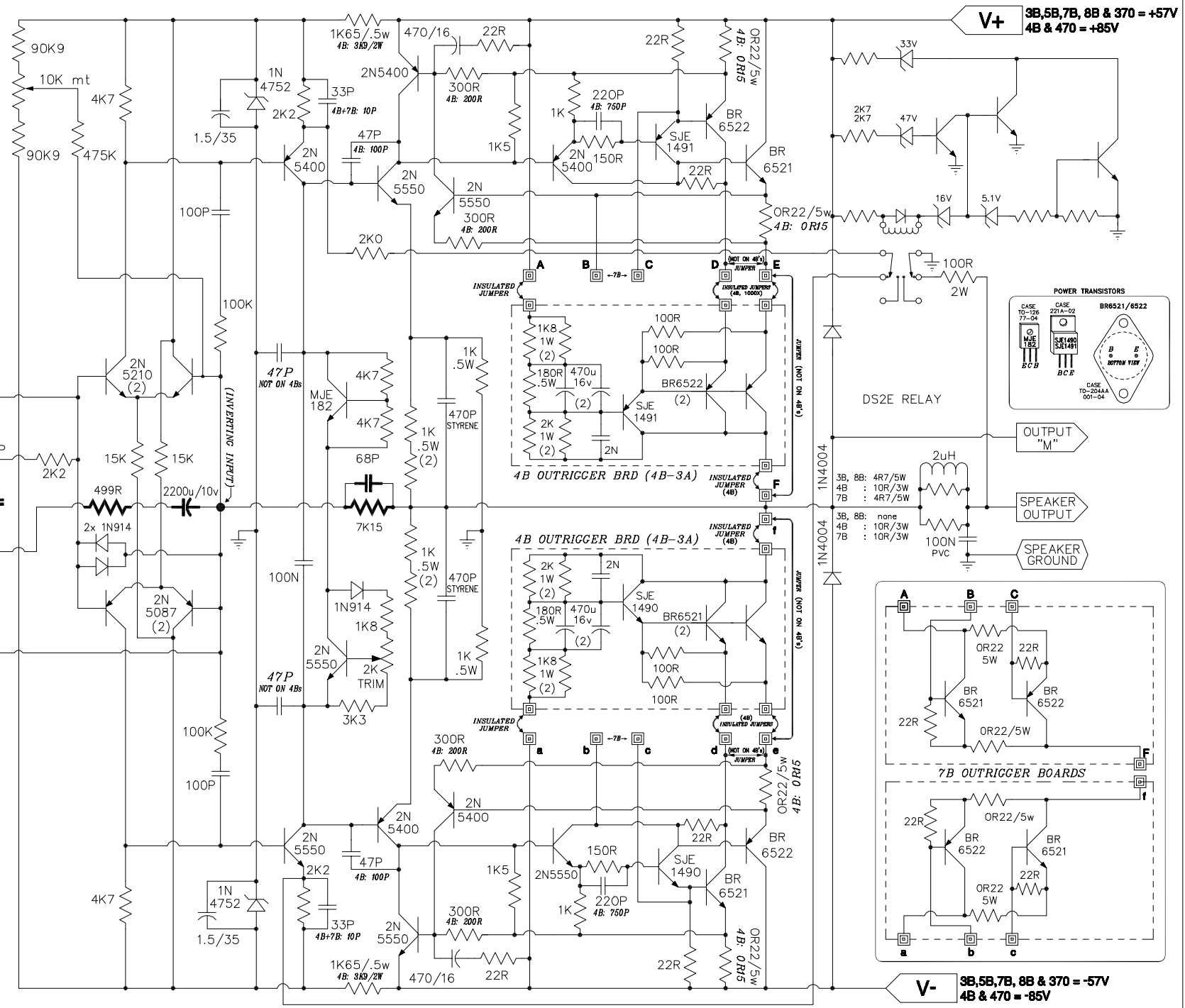
For the purpose of assembling the main board & except where noted: 3B=5B=7B=8B, 370=3B, 470=4B

SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS

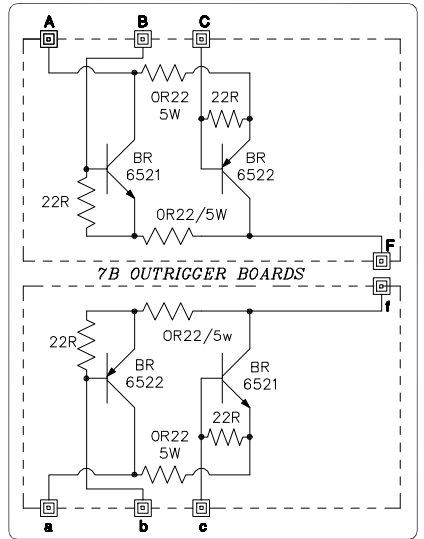
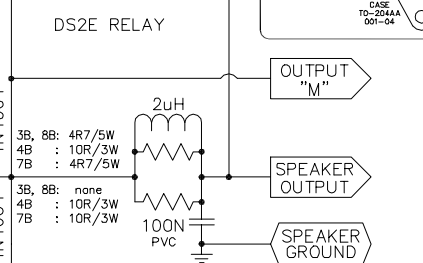
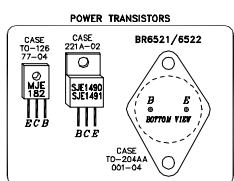


PRELIMINARY

| REVISION HISTORY | |
|------------------|--|
| Rev. 3.1 | 27 Nov 1996 SFT New mute relay function |
| Rev. 3.0 | 30 Nov 1995 Terminal "A" replaced by + and - input sense terminals |
| Rev. 2.01 | July 1995 470u/16v cap in feedback network replaced with 2200u/10v |
| Rev. 2.0 | June 95 "Output A" chgd to "INPUT SENSE", bias trim pot chgd to 2K, input resistor chgd to 33R (Sovix+4B:2K2), inphase chgd to 1M1 (Sovix: 221K), feedback short res. chgd to 499R (Sovix: 110) & short cap chgd to 100u, emitter res. chgd to 3922/5w for 4B, feedback cap chgd to 68p (Sovix: 22p) & res chgd to 7K15 (Sovix: 33K2), DC OS limit resistors chgd from 100K to 90K9 and from 1M to 475K & DC OS injection chgd from non-inv to inverting input, low voltage limit chgd to 16S/5w (4B: 3K9/2w) |
| Rev. 2.0 | June 95 200K (2) in DC-0/S chgd to 100K; 2N5210 in bias chgd to 2N5550; output res chgd to 6W; output "A" added |



V+ 3B,5B,7B, 8B & 370 = +57V
4B & 470 = +85V

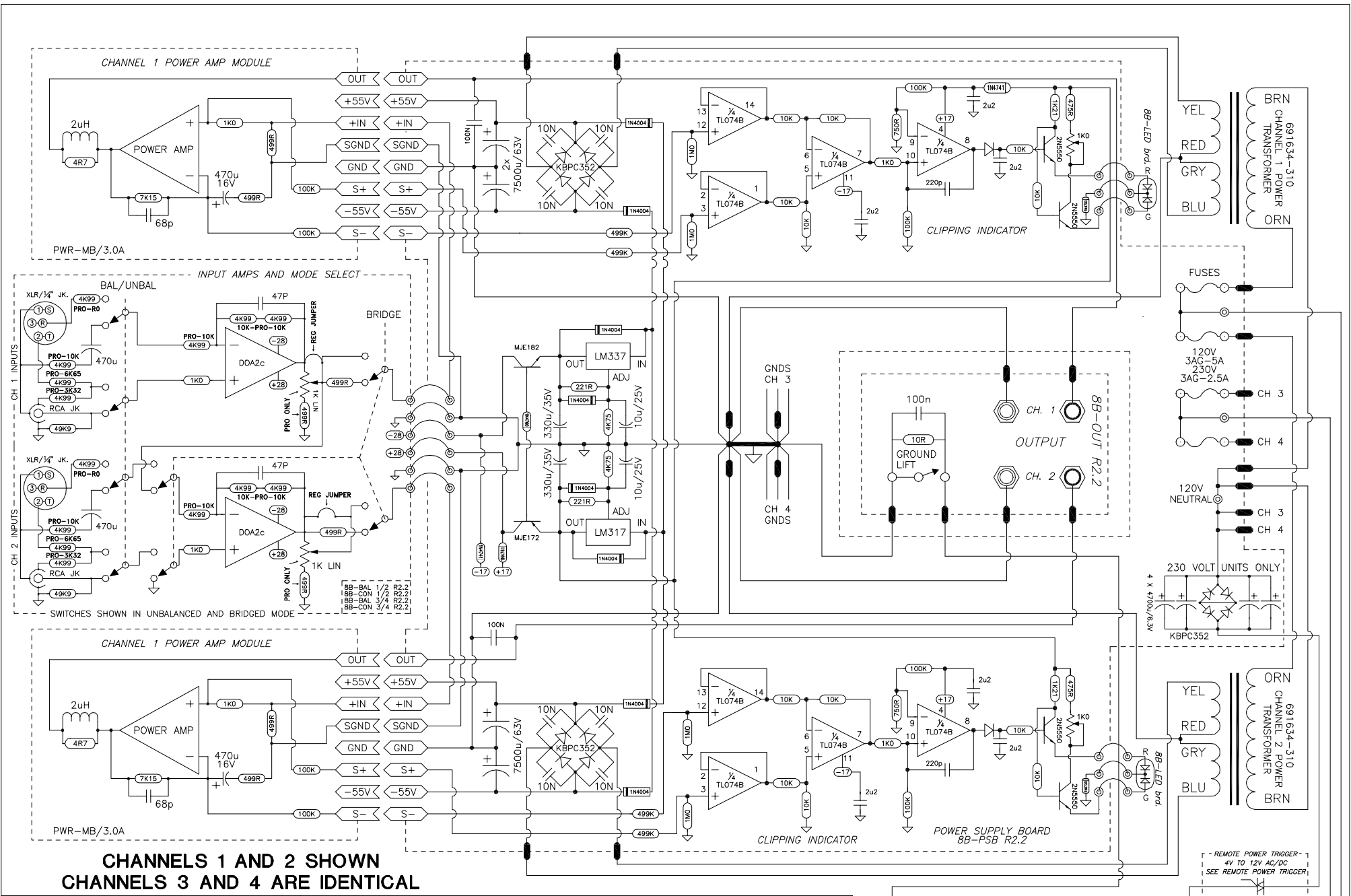


V- 3B,5B,7B, 8B & 370 = -57V
4B & 470 = -85V

BRUYSTON Ltd.
P.O. Box 2170, Peterborough, Ont., Canada K9J-7Y4 (705)742-5325

File: **PWR-MB-S**
Part No: **PWR-MB-S/3.1**
Date: **27 NOV 1996**
Revision: **3.1**
By:

POWER AMPLIFIER MAIN BOARD SCHEMATIC
for the PWR-MB/3.0a PCB
used in 3B, 4B, 5B, 7B, 8B, 370 & 470 amplifiers



CHANNELS 1 AND 2 SHOWN
CHANNELS 3 AND 4 ARE IDENTICAL

CONNECTORS

- EDGE CONNECTOR
- BOARD EDGE FINGER
- QUICK DISCONNECT TABS/SOCKETS
- SOLDER PAD FOR FLATWIRE INTERCONNECT

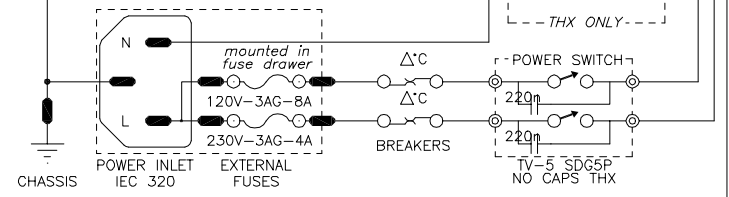
NOTES:
 8BST=LEXICON 412 AMPLIFIER
 5BST=LEXICON 312 AMPLIFIER
 5B AMPLIFIER DOES NOT POPULATE CH 3 ON THE PSB, AND CH 3 ON THE INPUT BOARDS. CH 4 SILKSCREEN IS RELABELED AS CH 3 HOWEVER.

PART #
 8B-PSB R2.2
 8B-OUT R2.2
 8B-BAL 1/2 R2.2
 8B-CON 1/2 R2.2
 8B-BAL 3/4 R2.2
 8B-CON 3/4 R2.2
 8B-LED R2.2

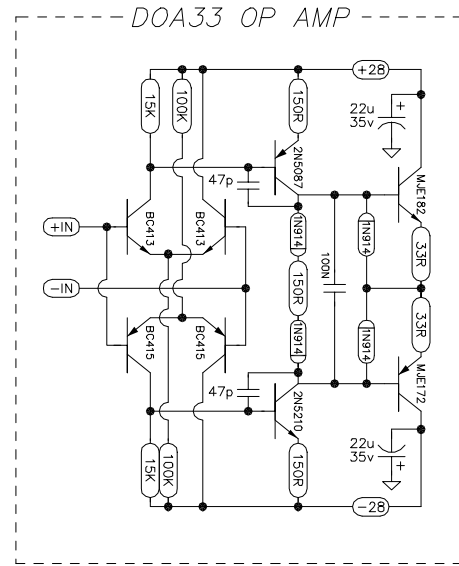
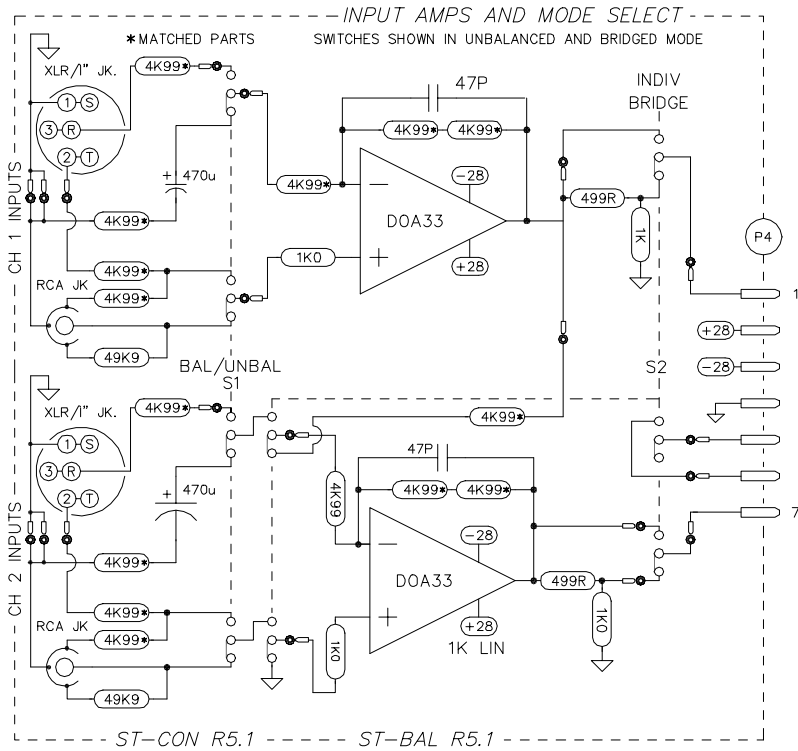
BRYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

8B + 5B AMPLIFIER
 AMPLIFIER SCHEMATIC

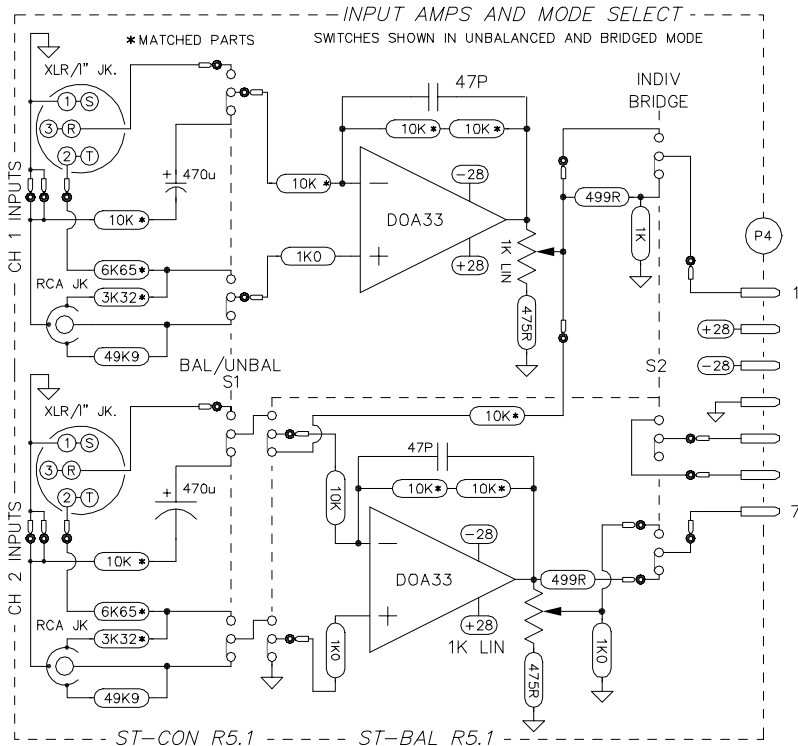
FILE: 8BSCH24 PART No: 8BPSB
 DATE: DEC 96 DWG BY: ST REV: 2.4



4BST REG INPUT CONFIGURATION



4BST PRO INPUT CONFIGURATION



— = HEADER INTERCONNECT
 ● = BOARD TO BOARD INTERCONNECT
 S1 & S2 = 6PDT SLIDE SWITCH



BRYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

4BST INPUT SCHEMATIC

SCHEMATIC OF ST-BAL & ST-CON BOARDS

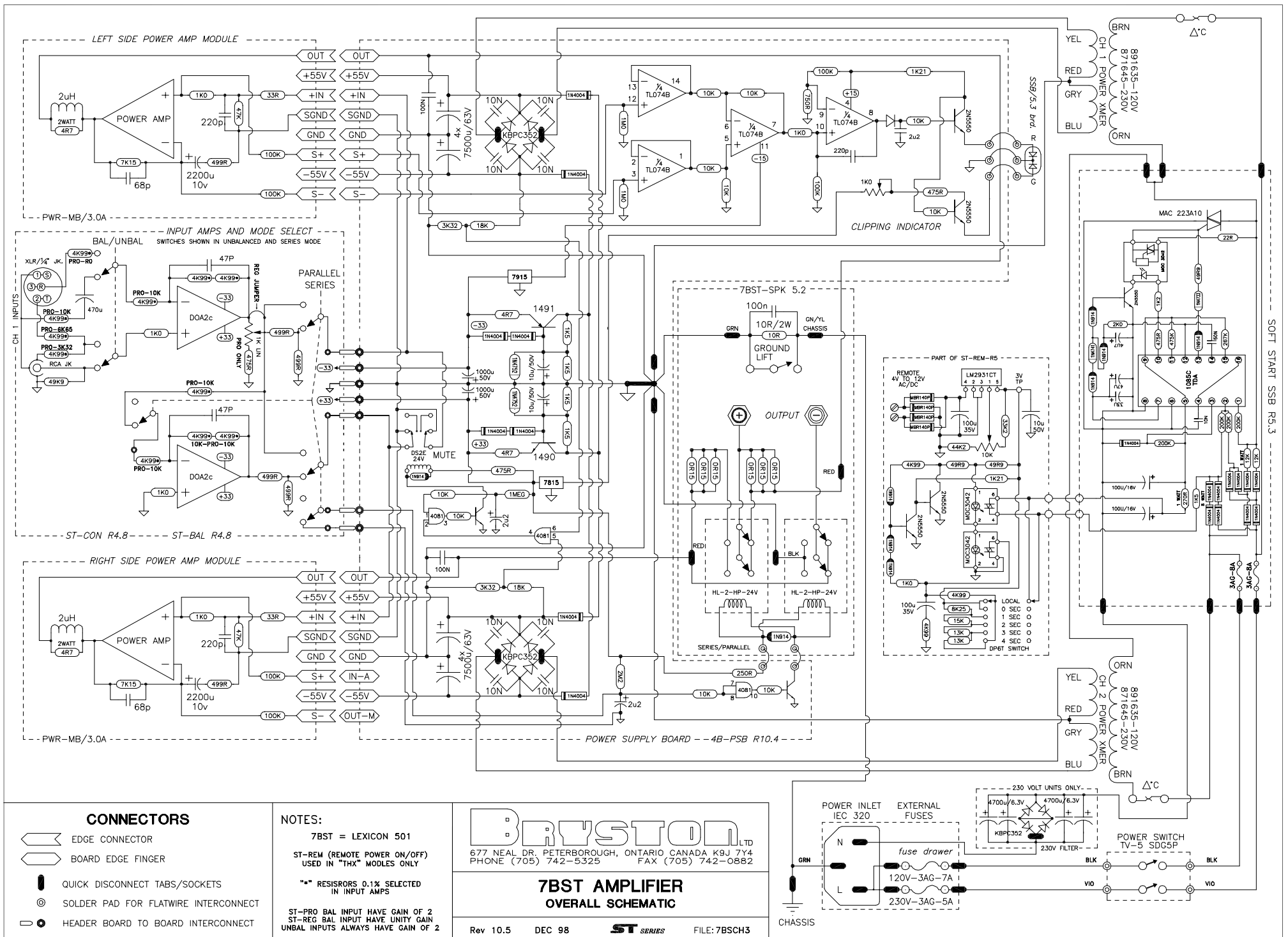
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PART No: ST BAL R 5.1

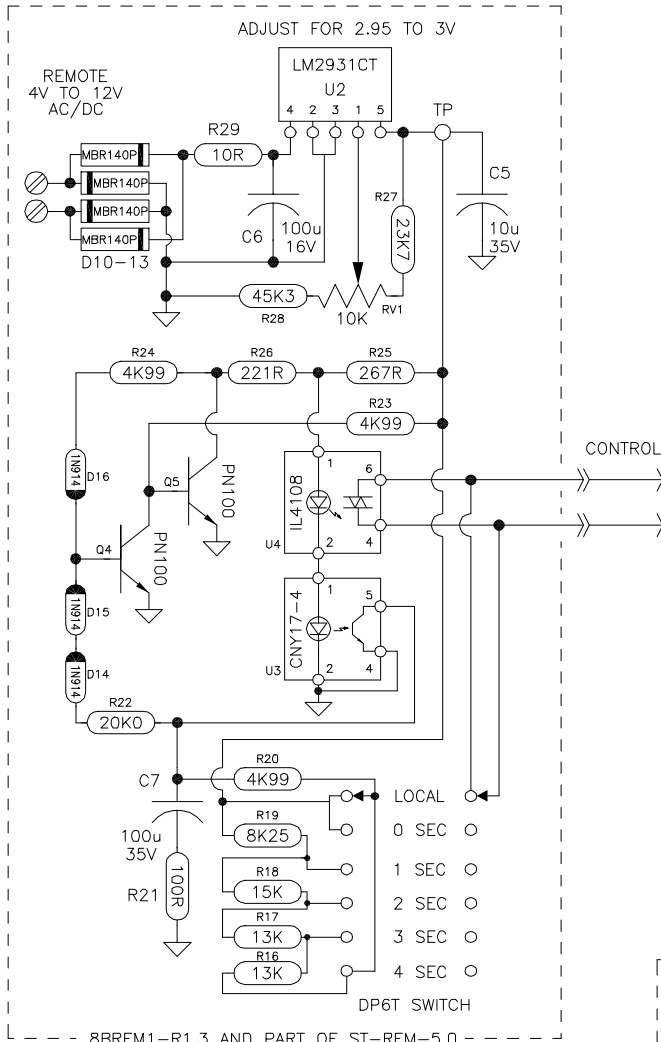
DATE: MAY 97

DWG BY:

REV: 5.1

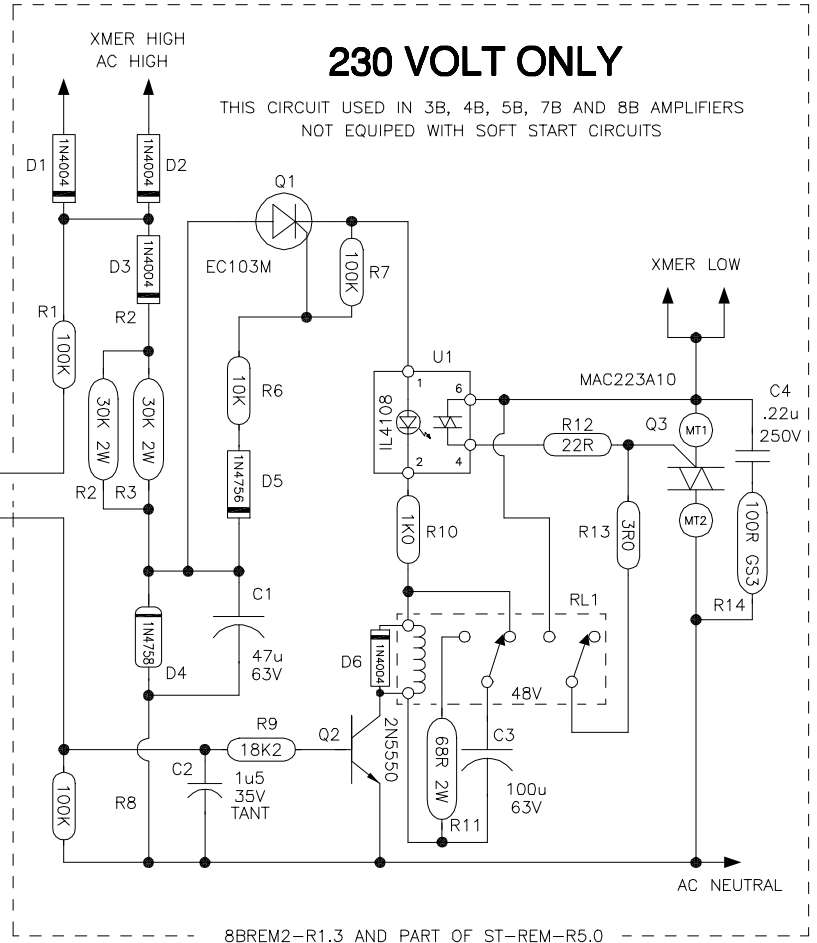
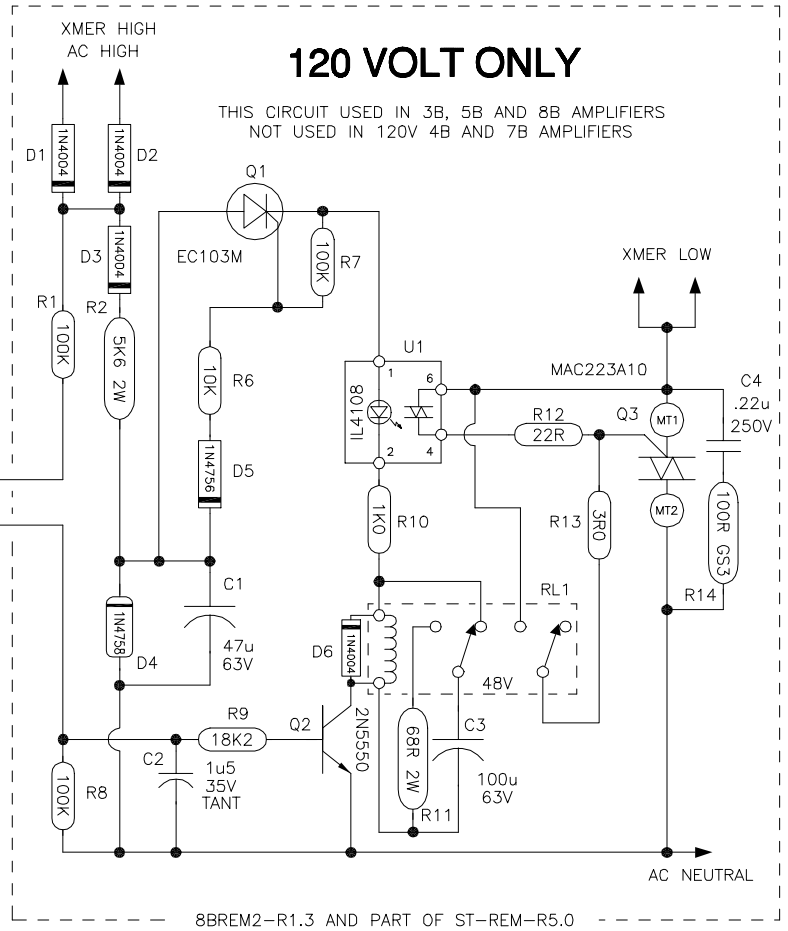


REMOTE INPUT & TIMING CIRCUIT



TIMING CIRCUIT WILL OPERATE SOFT START CIRCUIT ON 4B AND 7B AMPLIFIERS

TRIAC TURN ON CIRCUIT



BRYSTON LTD
677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
PHONE (705) 742-5325 FAX (705) 742-0882

REMOTE POWER TRIGGER

4V TO 12V REMOTE POWER ON/OFF CONTROL

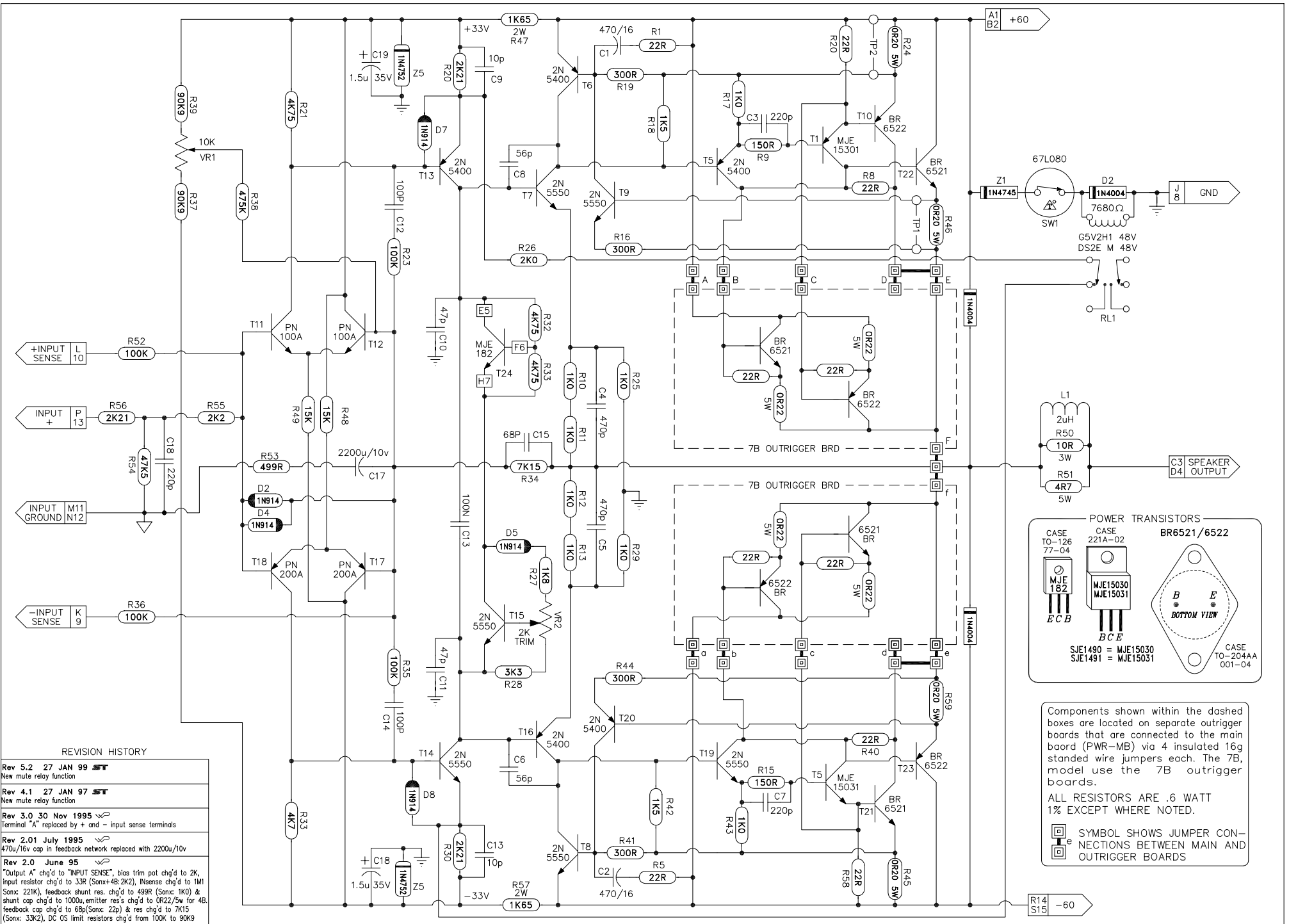
FILE: STREMSCH3A

PART No: ST-REM-3A

DATE: MAR 08 00

DWG BY: E J G **ST**

REV: 3A



REVISION HISTORY

| | | | |
|----------|-------------|----|---|
| Rev 5.2 | 27 JAN 99 | ST | New mute relay function |
| Rev 4.1 | 27 JAN 97 | ST | New mute relay function |
| Rev 3.0 | 30 Nov 1995 | | Terminal "A" replaced by + and - input sense terminals |
| Rev 2.01 | July 1995 | | 470u/16v cap in feedback network replaced with 2200u/10v |
| Rev 2.0 | June 95 | | "Output A" chg'd to "INPUT SENSE", bias trim pot chg'd to 2K, input resistor chg'd to 33R (Sonz+4B:2K2), INsense chg'd to 1M1 (Sonz: 221K), feedback shunt res. chg'd to 499R (Sonz: 1K0) & shunt cap chg'd to 1000u, emitter res's chg'd to OR22/5w for 4B, feedback cap chg'd to 68p(Sonz: 22p) & res chg'd to 7K15 (Sonz: 33K2), DC OS limit resistors chg'd from 100K to 90K9 and from 1M to 475K & DC OS injection chg'd from non-inv to inverting input, low voltage limit chg'd to 1K65/.5w (4B: 3K9/2w) |
| Rev 2.0 | June 95 | | 200K (2) in DC-O/S chg'd to 100K; 2N5210 in bias chg'd to 2N5550; output res chg'd to 6W; output "A" added |

BRISTON Ltd.
P.O. Box 2170, Peterborough, Ont., Canada K9J-7Y4 (705)742-5325

File: **PWRSCH7B**
Part No: **PWR-MB-S17.0**
Revision: **MAY 2000**
By: **ST**

7B CHANNEL ASSEMBLY

for the PWR-MB/7.0 PCB adapted for 7B amplifiers

POWER TRANSISTORS BR6521/6522

CASE TO-126 77-04
MJE 182
E C B

CASE 221A-02
MJE15030
MJE15031
B C E

SJE1490 = MJE15030
SJE1491 = MJE15031

CASE TO-204AA 001-04

Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (PWR-MB) via 4 insulated 16g stranded wire jumpers each. The 7B model use the 7B outrigger boards.

ALL RESISTORS ARE .6 WATT 1% EXCEPT WHERE NOTED.

SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS



Bryston ST Series Specifications

| | 3B ST SPECIFICATIONS | 4B ST SPECIFICATIONS | 7B ST SPECIFICATIONS | 8B ST SPECIFICATIONS |
|---------------------------------|--|--|---|---|
| Watts | 120 watts per channel, 8 ohms | 250 watts per channel, 8 ohms | 500 watts mono, 2 or 8 ohms | Four channels at 120 watts, 8 ohms |
| | 200 watts per channel, 4 ohms | 400 watts per channel, 4 ohms | 800 watts mono, 1 or 4 ohms | Two channels at 400 watts, 8 ohms |
| | 400 watts, bridged, 8 ohms | 800 watts, bridged, 8 ohms | | One channel at 400 watts, 2 channels at 120 watts, 8 ohms |
| Distortion | Less than 0.007% from 20Hz to 20kHz at 120 watts, IM or THD | Less than 0.007% from 20Hz to 20kHz at 250 watts, IM or THD | Less than 0.007% from 20Hz to 20kHz at 500 watts, IM or THD | Less than 0.007% from 20Hz to 20kHz at 120 watts or 400 watts, IM or THD |
| Noise | >106dB below full output | >106dB below full output | >106dB below full output | >106dB below full output |
| Slew rate | Greater than 60 volts per microsecond | Greater than 60 volts per microsecond | Greater than 60 volts per microsecond, parallel | Greater than 60 volts per microsecond in 4 channel mode |
| | | Greater than 120 volts per microsecond, bridged | Greater than 120 volts per microsecond, bridged | Greater than 120 volts per microsecond in 2 channel mode |
| Power bandwidth | Less than 1Hz to over 100kHz | Less than 1Hz to over 100kHz | Less than 1Hz to over 100kHz | Less than 1Hz to over 100kHz |
| Damping factor | Over 500 at 20Hz, ref. 8ohms | Over 500 at 20Hz, ref. 8ohms | Over 300 at 20Hz, ref. 8 ohms | Over 500 at 20Hz, ref. 8 ohms |
| Input sensitivity and impedance | 1.0V in for full output, 50k unbalanced 2.0V in for full output, 20k balanced | 1.4V in for full output, 50k unbalanced 2.8V in for full output, 20k balanced | 1.0V in for full output, 50k unbalanced 2.0V in for full output, 20k balanced | 1.0V in for full output, 50k unbalanced 2.0V in for full output, 20k balanced |
| Features | Stereo/mono switch | Stereo/mono switch | Series/parallel switch | Two independent stereo/mono switches |
| | Over 3,200cm ² of heat-sinking; over 5,000 cm ² with chassis | Over 6,400cm ² of heat-sinking; over 9,600 cm ² with chassis | Over 6,400cm ² of heat-sinking; over 9,600cm ² with chassis | Over 6,400 cm ² of heat-sinking; over 9,600 cm ² with chassis |
| | Regulated power supplies to all voltage gain stages | Regulated power supplies to all voltage gain stages | Regulated power supplies to all voltage gain stages | Regulated power supplies to all voltage gain stages |
| | Gold plated input and output connectors | Gold plated input and output connectors | Gold plated input and output connectors | Gold plated input and output connectors |
| | Switchable balanced XLR-1/4 inch and RCA unbalanced inputs | Switchable balanced XLR-1/4 inch and RCA unbalanced inputs | Switchable balanced XLR-1/4 inch and RCA unbalanced inputs | Switchable balanced XLR-1/4 inch and RCA unbalanced inputs |
| | Warranty: 20 years parts, labour, shipping one way | Warranty: 20 years parts, labour, shipping one way | Warranty: 20 years parts, labour, shipping one way | Warranty: 20 years parts and labour, shipping one way |
| Dimensions | 19 x 5.25 x 9 inches, 48.25 x 13.33 x 22.8 cm, wt: 22lbs, 10kg | 19 x 5.25 x 15.5 inches, 48.25 x 13.33 x 39.4 cm, wt: 42 lbs, 18kg | 19 x 5.25 x 15.5 inches, 48.25 x 13.33 x 39.4 cm, wt: 42lbs, 18kg | 19 x 5.25 x 15.5 inches, 48.25 x 13.33 x 39.4 cm, wt: 44lbs, 20kg |

All ST amplifiers are available in 17" versions with or without handles.

All ST amplifiers available in THX versions, include remote power on/off function.

*5B-ST - three (3) channel 120 watt per channel amplifier also available.

Amplifiers

Designed

to

Last

a

Lifetime



Environmental responsibility is a high priority at Bryston. We have taken considerable steps in producing this literature to ensure we meet or exceed recognized environmental standards concerning paper, inks, and printing.

BRYSTON

20 Year Warranty - A Generation of Music

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