

# HOT ROD DEVILLE

410 COMBO  
212 COMBO

# SERVICE MANUAL



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# HOT ROD DEVILLE

(This is the model name for warranty claims)

## SERVICE MANUAL

SEPTEMBER 1996

### IMPORTANT NOTICE:

The information contained herein is CONFIDENTIAL and PROPRIETARY to Fender Musical Instruments Corp. It is disclosed solely for use by qualified technicians for purposes of equipment maintenance and service. It is not to be disclosed to others without the expressed permission of Fender Musical Instruments Co. All specifications subject to change without notice.

For warranty repair service, only Fender specified part numbers are to be used. It is recommended they also be used for post-warranty maintenance and repair.

Parts marked with an asterisk (\*) indicate the required use of that specific part. This is necessary for RELIABILITY and SAFETY requirements. **DO NOT USE A SUBSTITUTE!**

A coded naming convention is used in the description of certain parts. The codes and what they mean are as follows:

#### CAPACITOR CODES

CAP AE = Aluminum Electrolytic  
CAP CA = Ceramic Axial  
CAP CD = Ceramic Disk  
CAP MPF = Metalized Polyester Film  
CAP MY = Mylar  
CAP PFF = Polyester Film/Foil

#### RESISTOR CODES

RES CC = Carbon Comp  
RES CF = Carbon Film  
RES FP = Flame Proof  
RES MF = Metal Film  
RES WW = Wire Wound

#### HARDWARE CODES

BLX = Black Oxide  
CR = Chrome Plated  
HWH = Hex Washer Head  
M = Machine Screw  
NI = Nickel Plated  
OHP = Oval Head Phillips  
PB = Particle Board  
PHP = Pan Head Phillips  
PHPS = Pan Head Phillips Sems  
SMA = Sheet Metal "A" Point  
SMB = Sheet Metal "B" Point  
SS = Stainless Steel  
TF = Thread Forming  
ZI = Zinc Plated

# HOT ROD DEVILLE

## SPECIFICATIONS

|                                          |                                                                              |           |                                                                        |           |
|------------------------------------------|------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------|-----------|
| <b>Product Release No.:</b>              | PR 247 <i>(This is not a model number)</i>                                   |           |                                                                        |           |
|                                          | <b>Hot Rod Deville</b>                                                       |           | <b>Hot Rod Deville 212</b>                                             |           |
| <b>Input Impedance:</b>                  | Input 1: 1M ohm<br>Input 2: 136k $\Omega$                                    |           | Input 1: 1M ohm<br>Input 2: 136k $\Omega$                              |           |
| <b>Power output:</b>                     | 60 Watts RMS into<br>8 or 4 $\Omega$ @ 5% THD                                |           | 60 Watts RMS into<br>4 or 2 $\Omega$ @ 5% THD                          |           |
| <b>Preamp Out<br/>Output Impedance:</b>  | 1.5k $\Omega$ max                                                            |           | 1.5k $\Omega$ max                                                      |           |
| <b>Power Amp In<br/>Sensitivity:</b>     | 230mV for clipping                                                           |           | 230mV for clipping                                                     |           |
| <b>Power Amp in<br/>Input Impedance:</b> | 54k $\Omega$                                                                 |           | 54k $\Omega$                                                           |           |
| <b>Speaker Complement:</b>               | Four 8 ohm Fender Model<br>V1030 Special Design 10"<br>Speakers (P/N 048832) |           | Two 8 ohm Fender Re-issue<br>"Gold Label" 12" speakers<br>(P/N 037617) |           |
| <b>Dimensions:</b>                       |                                                                              |           |                                                                        |           |
| <b>Height:</b>                           | 23.5"                                                                        | (59.7 cm) | 21"                                                                    | (53.3 cm) |
| <b>Width:</b>                            | 23.5"                                                                        | (59.7 cm) | 24.25"                                                                 | (61.6 cm) |
| <b>Depth:</b>                            | 10.75"                                                                       | (27.3 cm) | 10.75"                                                                 | (27.3 cm) |
| <b>Weight:</b>                           | 50 lbs.                                                                      | (22.7 kg) | 53.5 lbs.                                                              | (24.2kg)  |

*Product specifications are subject to change without notice*

## PARTS LIST

### PRINTED CIRCUIT BOARD ASSEMBLY

| <b>QTY</b> | <b>PART #</b> | <b>DESCRIPTION</b>          | <b>REFERENCE DESIGNATION</b> |
|------------|---------------|-----------------------------|------------------------------|
| 1          | 050388003     | PCB ASSY H/R DEVILLE 212    | STUFFED                      |
| 3          | 028104        | BUTTON PUSH SWITCH BLACK    | @S1,2,3                      |
| 1          | 050688        | CABLE JMPR 2 CKT .156 ROUND |                              |
| 3          | 050687        | CABLE JMPR 6 CKT .156 ROUND |                              |
| 1          | 041311        | CABLE REVERB                | @U2                          |
| 4          | 038689001     | CAP AE AX .47uF 100V        | C12,16,19,20                 |
| 1          | 038690001     | CAP AE AX 1.0uF 100V        | C8                           |
| 5          | 009512        | CAP AE AX 22uF 25V 20%      | C9,14,21,49,50               |
| 2          | 036954        | CAP AE RDL 22uF 63V 20%     | C38,45                       |
| 2          | 024819        | CAP AE AX 22uF 500V         | C35,36                       |
| 1          | 038693001     | CAP AE AX 47uF 16V          | C1                           |
| 2          | 024820        | CAP AE AX 47uF 350V         | C33,34                       |
| 4          | 031040        | CAP AE RDL 100uF 100V 20%   | C37,39,42,43                 |
| 2          | 028953        | CAP AE AX 100uF 350V 20%    | C31,32                       |

# HOT ROD DEVILLE

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART #    | DESCRIPTION                    | REFERENCE DESIGNATION                |
|-----|-----------|--------------------------------|--------------------------------------|
| 2   | 028494    | CAP AE RDL 1000uF 35V 20%      | C400,41                              |
| 1   | 038698001 | CAP CA 47PF 100V               | C15                                  |
| 2   | 020909    | CAP CD 47PF 1000V 10%          | C28,30                               |
| 2   | 020917    | CAP CD 250PF 1000V 10%         | C3,7                                 |
| 1   | 025986    | CAP CD 390PF 1000V 10%         | C11                                  |
| 1   | 038701001 | CAP CA 470PF 50V               | C13                                  |
| 1   | 025995    | CAP CD 8200PF 1KV 20%          | C53                                  |
| 2   | 038703001 | CAP CA .1uF 50V                | C54,55                               |
| 1   | 027255    | CAP MPF .001uF 100V            | C22                                  |
| 1   | 027262    | CAP MPF .0068uF 100V           | C52                                  |
| 3   | 024833    | CAP MPF RDL .022uF 400V 10%    | C6,18,24                             |
| 2   | 024845    | CAP MPF RDL .047uF 400V 10%    | C2,10                                |
| 2   | 027275    | CAP MPF .068uF 100V            | C4,44                                |
| 1   | 027278    | CAP MPF .1uF 50V               | C29                                  |
| 1   | 024853    | CAP MPF RDL .1uF 250V 10%      | C25                                  |
| 1   | 024854    | CAP MPF RDL .1uF 400V 10%      | C5                                   |
| 2   | 024855    | CAP MPF RDL .1uF 630V 10%      | C26,27                               |
| 2   | 027281    | CAP MPF .22uF 63V              | C46,47                               |
| 3   | 027286    | CAP MPF .47uF 63V              | C17,48,51                            |
| 1   | 047065    | CAP PFF .0015uF 400V 10%       | C23                                  |
| 1   | 047031    | CONTROL SNAPIN 25K 30C         | R67 <b>PRESENCE</b>                  |
| 1   | 027873    | CONTROL PCB MT LIN 30% 25K     | R82 <b>BIAS ADJUST</b>               |
| 2   | 041510    | CONTROL SNAPIN 25K B           | R15,39 <b>MIDDLE, REVERB</b>         |
| 1   | 037600    | CONTROL SNAPIN 100K B          | R26 <b>MASTER</b>                    |
| 3   | 047540    | CONTROL SNAPIN 250K 15A        | R6,7,14 <b>VOLUME, DRIVE, BASS</b>   |
| 1   | 037597    | CONTROL SNAPIN 250K 30A        | R13 <b>TREBLE</b>                    |
| 9   | 026730001 | DIODE 1N4006 800V              | CR3,6-12,15                          |
| 8   | 006260    | DIODE 1N4448 SIGNAL            | CR16,18,20,21,23-25,27               |
| 2   | 029690001 | DIODE HV 3KV 200mA             | CR4,5                                |
| 1   | 027329001 | DIODE ZEN 1N5228B 3.9V 5%      | CR19                                 |
| 2   | 031729001 | DIODE ZEN 1N5231B .5W 15V 5%   | CR17,22                              |
| 2   | 031635001 | DIODE ZEN 1N5240B 10V 5%       | CR26,28                              |
| 2   | 031019001 | DIODE ZEN 1N5245B .5W 15V 5%   | CR1,2                                |
| 2   | 028119    | DIODE ZEN 1N5353V 16V 5W 5%    | CR13,14                              |
| 18  | 025802    | FSTN TAB MALE .250X.032 PCB MT | CP1-16,18-20                         |
| 2   | 016795    | IC DUAL OP AMP TLO72           | U1,2                                 |
| 1   | 031611    | IC DUAL OP AMP PC4560          | U3                                   |
| 1   | 031570    | JACK PHONE PCB STEREO PREMIUM  | J4 <b>POWER AMP IN</b>               |
| 4   | 037036    | JACK PHONE PCB MONO CA PREMIUM | J1,2,3,5 <b>INPUTS, PREOUT, FTSW</b> |
| 60  | 020888    | JUMPER WIRE 22GA               |                                      |
| 1   | 033177    | LED RED/GREEN 5X5mm BI-COLOR   | LD1                                  |
| 2   | 031901    | PIN MALE PCB .093 DIA          | SP1,2                                |
| 2   | 036613    | RELAY DPDT DIP 24 VOLT 8.3mA   | K1,2                                 |
| 1   | 024937001 | RES CF 1/4 W 5% 10 OHM         | R63                                  |
| 3   | 024947001 | RES CF 1/4 W 5% 47OHM          | R34,99,100                           |
| 1   | 028015001 | RES CF 1/4 W 5% 130 OHM        | R84                                  |
| 2   | 024957001 | RES CF 1/4 W 5% 270 OHM        | R85,104                              |
| 1   | 024961001 | RES CF 1/4 W 5% 470 OHM        | R55                                  |
| 8   | 024969001 | RES CF 1/4 W 5% 1.5K           | R5,10,17,21,31,64,65,103             |
| 1   | 024970001 | RES CF 1/4 W 5% 1.8K           | R88                                  |
| 4   | 024972001 | RES CF 1/4 W 5% 2.7K           | R29,37,49,50                         |
| 2   | 024977001 | RES CF 1/4 W 5% 4.7K           | R33,68                               |
| 7   | 024981001 | RES CF 1/4 W 5% 10K            | R41,46,76,90,91,93,94                |
| 3   | 024988001 | RES CF 1/4 W 5% 27K            | R86,98,101,                          |
| 4   | 024993001 | RES CF 1/4 W 5% 47K            | R28,45,51,69                         |
| 3   | 028990001 | RES CF 1/4 W 5% 51K            | R47,48,83                            |
| 2   | 024995001 | RES CF 1/4 W 5% 68K            | R1,2                                 |
| 10  | 024997001 | RES CF 1/4 W 5% 100K           | R8,20,23,24,25,30,35,43,77,87        |
| 2   | 028955001 | RES CF 1/4W 5% 130K            | R12,18                               |
| 2   | 025058001 | RES CF 1/4W 5% 180K            | R44,52                               |
| 7   | 025059001 | RES CF 1/4W 5% 220K            | R9,19,36,40,59,60,105                |
| 3   | 025065001 | RES CF 1/4W 5% 470K            | R38,95,96                            |
| 9   | 025069001 | RES CF 1/4W 5% 1M              | R3,27,32,42,53,54,89,92,102          |

# HOT ROD DEVILLE

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART #    | DESCRIPTION                    | REFERENCE DESIGNATION |
|-----|-----------|--------------------------------|-----------------------|
| 2   | 026368001 | RES CF 1/2W 5% 100OHM          | R80,81                |
| 1   | 025115001 | RES CF 1/2W 5% 82K             | R57                   |
| 5   | 025116001 | RES CF 1/2W 5% 100K            | R4,11,16,22,58        |
| 4   | 025117001 | RES CF 1/2W 5% 220K            | R70,71,72,73          |
| 1   | 033095001 | RES MOX FP 1W 5% 1 OHM         | R66                   |
| 2   | 036468001 | RES MOX FP 1W 470OHM           | R62,62                |
| 1   | 036469001 | RES MOX FP 1W 5% 4.7K          | R74                   |
| 1   | 036621001 | RES CF 1W 5% 6.8K              | R56                   |
| 1   | 036470001 | RES MOX FP 1W 5% 10K           | R75                   |
| 1   | 041277    | RES CF 2W 5% 820 OHM           | R97                   |
| 2   | 028037    | RES WW BT 5W 10% 330 OHM       | R78,79                |
| 4   | 014999    | SCRW M 6-32X1/4 PHP ZI         | @XV4,5                |
| 13  | 039367    | SCRW M 6-32X3/8 PHPS SS ITLW   | PCB MOUNT             |
| 1   | 036178    | SPACER LED .5X.1 BRN           | @LD1                  |
| 13  | 016440    | STNDOFF RND AL 6-32X1X1/4      | PCB MOUNT             |
| 3   | 028091    | SWITCH PUSH SLFLK SHORT STROKE | S1.2.3                |
| 1   | 028503    | THERMISTOR 10 OHM 5A C60-11    | TH1                   |
| 3   | 029167    | TUBE SOCKET 9 PIN PCB MOUNT    | XV1.2.3               |
| 2   | 029343    | TUBE SOCKET 8 PIN PCB MOUNT    | XV4,5                 |
| 2   | 014689    | XSTR N-CH JFET J111 TO-92      | Q4                    |
| 1   | 016739    | XSTR NPN 2N4401 TO-92          | Q4                    |
| 1   | 016742    | XSTR PNP 2N4403 TO-92          | Q3                    |

### CHASSIS ASSEMBLY

| QTY | PART #     | DESCRIPTION                      | REFERENCE DESIGNATION            |
|-----|------------|----------------------------------|----------------------------------|
| 1   | 026038     | BUSHING SR .625X.062X37/64 BLK   | @ PWR CABLE 100V,120V, AUSTRALIA |
| 1   | 010401     | BUSHING SR .625X.125X37/64 WHT   | @PWR CABLE 230V, UNITED KINGDOM  |
| 1   | 026116     | BUSHING SR .500X.063X7/16 BLK    |                                  |
| 1   | 026541     | CABLE ASSY PWR W/.250 TAB 120V   |                                  |
| 1   | 048463     | CABLE ASSY PWR .250 TAB 100V     | (POWER CABLE 100V ONLY)          |
| 1   | 033331     | CABLE ASSY PWR 220/240V          | (POWER CABLE 230V ONLY)          |
| 1   | 038602     | CABLE ASSY PWR AUST. .250 TAB    | (PWR CABLE AUSTRALIA 240V)       |
| 1   | 040993     | CABLE ASSY PWR 5A U.K. .250 TAB  | (P CABLE UNTIED KINGDOM 240V)    |
| 1   | 022707     | CHOKE FILTER                     | L1                               |
| 1   | 032219     | COLLAR-PILOT LIGHT               |                                  |
| 1   | 077982     | FUSE QA 1-1/4X1/4 250V 3A        | F1 100V/120V ONLY                |
| 1   | 020793     | FUSE QA 20mmX5mm 250V 1.6A       | F1 220V/230V/240V ONLY           |
| 1   | 036702     | FUSE HOLDER 3AG FINGER GRIP      | 100/120V ONLY                    |
| 1   | 036703     | FUSE HOLDER 5MM FINGER GRIP      | 230V, AUSTRALIA, UK              |
| 1   | 021741     | HOLDER DIAL LITE ASSEMBLY PILOT  |                                  |
| 1   | 021550     | JACK PHONE TIP SHUNT 12A         | J7 SPEAKER OUT JACK              |
| 1   | 041701     | JACK PHONE TRANSFER 13A          | J6 EXT. SPEAKER JACK             |
| 1   | 025718     | JEWEL PILOT LITE RED #20         |                                  |
| 8   | 036620     | KNOB "CHICKEN HEAD               |                                  |
| 1   | 031625     | NUT HOLDER PILOT LITE 1/16-27    |                                  |
| 8   | 022004     | NUT KEPS #8-32 ZINC              |                                  |
| 2   | 016352     | NUT HEX 3/8-32X3/32 TK NI        |                                  |
| 1   | 050403     | PANEL TOP CHR M H/R DVL/DLX      |                                  |
| 1   | 021842     | PILOT LIGHT #T47                 | BULB                             |
| 21  | 031184     | SCRW M 8-32X1/2 PHP ZI           |                                  |
| 4   | 038900     | SCRW TF 6-32X1/4 PHP ZI          |                                  |
| 4   | 016473     | SCRW M 8-32X1/2 PHP ZI           |                                  |
| 6   | 016440     | STNDOFF RND AL 6-32X1X1/4        |                                  |
| 1   | 036570     | SWITCH TOGGLE DPST W/NUTS        | S4 POWER SWITCH                  |
| 1   | 037039     | SWITCH TOGGLE SPST W/NUTS        | S5 STANDBY SWITCH                |
| 3   | 013341     | TUBE 7025/12AX7WAWA RUSSIAN MADE | V1,2,3                           |
| 2   | 039214     | TUBE 5881/6L6WGC                 | V4,5                             |
| 2   | 020424     | TUBE RING UNIVERSAL (277H-2)     | @V4,5                            |
| 7   | 9904300920 | WASHER FLAT .482X.709 NI         |                                  |
| 2   | 9904300100 | WASHER LCK INTL 3/8X.709 NI      |                                  |
| 1   | 041752     | XFMR PWR CNCRT/SUPR/HR/DVL 120   | T2 120V ONLY                     |
| 1   | 041753     | XFMR PWR '93 CONCERT/SUPER EXP   | T2 100V/115V/230V                |
| 1   | 041754     | XFMR OUTPUT '93 CONCERT/SUPR     | T1                               |

## HOT ROD DEVILLE CABINET ASSEMBLY

| <b>QTY</b> | <b>PART #</b> | <b>DESCRIPTION</b>             | <b>REFERENCE DESIGNATION</b> |
|------------|---------------|--------------------------------|------------------------------|
| 1          | 050678        | CAB ASSY HR DVL 140 BLK/SLVR   |                              |
| 1          | 050676        | CAB ASSY HR DVL 212 BLK/SLVR   |                              |
| 1          | 038566        | CABLE ASSY SPKR RT ANG 13-1/2" | SPEAKER CABLE                |
| 1          | 012582        | CLAMP CABLE NYL SCRW MNT 1/4   |                              |
| .38        | 037788        | CLOTH GRILLE BLACK/SILVER      |                              |
| 4          | 024653        | GLIDE CABINET NICKEL PLATED    |                              |
| 1          | 049094        | HANDLE MOLDED BLACK            |                              |
| 4          | 022483        | INSERT GLIDE CUSHION 1.02 DIA. |                              |
| 6          | 069393        | NUT 6-32 HEX EXT LOCK          | GRILLE/BAFFLE MOUNT          |
| 4          | 064162        | NUT 8-32X1/2 STR 3 PRNG BLX    | HANDLE MOUNT                 |
| 4          | 021972        | NUT T 10-32X3/4 STR 3 PRNG BLX | SPEAKER MOUNT                |
| 4          | 036650        | PIN ESCUTCHEON # 18X3/8 MO     | LOGO MOUNT                   |
| 1          | 031849        | REVERB BAG                     | BAG ONLY                     |
| 1          | 050394        | REVERB UNIT 4 SPRING 4EB3C1B   | PAN                          |
| 5          | 050858        | SCRW M 6-32X1-3/4 THP ITFW NI  |                              |
| 4          | 037247        | SCRW M 8-32X1 OHP NI           |                              |
| 4          | 026625        | SCRW WOOD 8X1 FH               | GLIDE MOUNT                  |
| 4          | 047821        | SCRW M 10-32X3/4 THP STL BLX   | SPEAKER MOUNT                |
| 6          | 015990        | SCRW M 10-32X3/4 THP NI        | BACK BOARD MOUNT             |
| 6          | 036619        | SCREW M 10-32X1-1/2 THP NI     | CHASSIS MOUNT                |
| 4          | 048832        | SPEAKER 10" 8 OHM CERAMIC      | DEVILLE 410 ONLY             |
| 2          | 037617        | SPEAKER 12" 8 OHM 50 WATTS     | DEVILLE 212 ONLY             |
| 6          | 022327        | WSHR FLAT 8X7/16 NI            |                              |

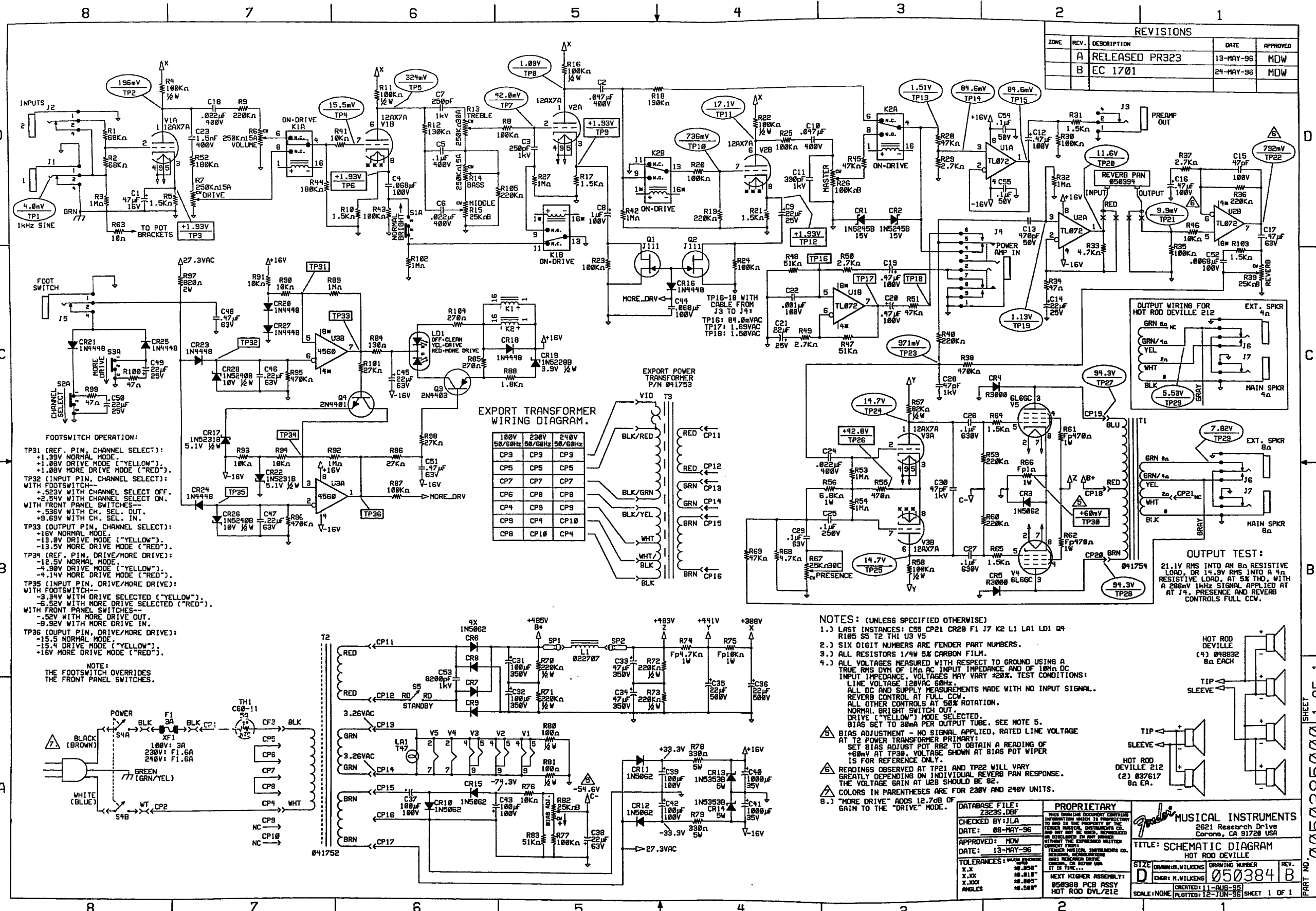
## FOOTSWITCH ASSEMBLY

| <b>QTY</b> | <b>PART #</b> | <b>DESCRIPTION</b>             | <b>REFERENCE DESIGNATION</b> |
|------------|---------------|--------------------------------|------------------------------|
| 1          | 050419        | FOOTSWITCH 2 BTN CH/DRV/MDRV   | COMPLETE FOOTSWITCH          |
| 4          | 006260        | DIODE 1N4448/1N914B SIGNAL     | CR1,2,4,5                    |
| 1          | 027329        | DIODE ZEN 1N5228B 3.9V .5W 5%  | CR3                          |
| 1          | 031871        | LED BI-COLOR 5X5mm             | LD2                          |
| 1          | 028039        | LED RED 5X5mm SLB-55VR3        | LD1                          |
| 1          | 037036        | JACK PHONE PCB MONO CA PREMIUM | J1                           |
| 1          | 029687        | RES CF 14W 5% 75 OHM           | R1                           |
| 2          | 028714        | SWITCH PUSH SPDT               | S1,2                         |

## MISCELLANEOUS

| <b>QTY</b> | <b>PART #</b> | <b>DESCRIPTION</b>             | <b>REFERENCE DESIGNATION</b> |
|------------|---------------|--------------------------------|------------------------------|
| 1          | 050697        | COVER HOT ROD DEVILLE BLK      |                              |
| 1          | 050698        | COVER HOT ROD DEVILLE 212 BLK  |                              |
|            | 050393        | MANUAL OWNERS H/R DEVILLE      |                              |
|            | 050385        | SCHEMATIC REDUCED W/SD H/R DVL |                              |

| REVISIONS |      |                |           |          |
|-----------|------|----------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION    | DATE      | APPROVED |
|           | A    | RELEASED PR323 | 13-MAY-96 | MDW      |
|           | B    | EC 1701        | 24-MAY-96 | MDW      |



**FOOTSWITCH OPERATION:**

TP31 (REF. PIN, CHANNEL SELECT):  
 +1.35V NORMAL MODE.  
 +1.08V DRIVE MODE ("YELLOW").  
 +1.08V MORE DRIVE MODE ("RED").

TP32 (INPUT PIN, CHANNEL SELECT):  
 WITH FOOTSWITCH--  
 +.925V WITH CHANNEL SELECT OFF.  
 +2.54V WITH CHANNEL SELECT ON.  
 WITH FRONT PANEL SWITCHES--  
 +.536V WITH CH. SEL. OUT.  
 +.639V WITH CH. SEL. IN.

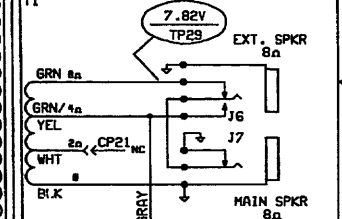
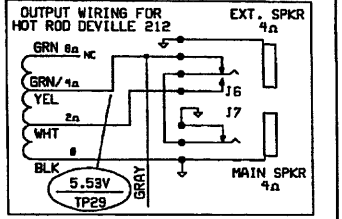
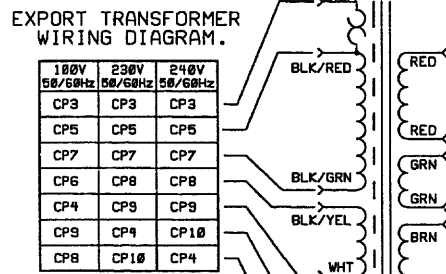
TP33 (OUTPUT PIN, CHANNEL SELECT):  
 +16V NORMAL MODE.  
 -13.8V DRIVE MODE ("YELLOW").  
 -13.5V MORE DRIVE MODE ("RED").

TP34 (REF. PIN, DRIVE/MORE DRIVE):  
 -12.5V NORMAL MODE.  
 -4.90V DRIVE MODE ("YELLOW").  
 -4.14V MORE DRIVE MODE ("RED").

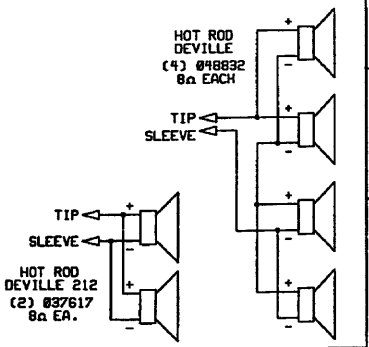
TP35 (INPUT PIN, DRIVE/MORE DRIVE):  
 WITH FOOTSWITCH--  
 -3.34V WITH DRIVE SELECTED ("YELLOW").  
 -6.52V WITH MORE DRIVE SELECTED ("RED").  
 WITH FRONT PANEL SWITCHES--  
 -.62V WITH MORE DRIVE OUT.  
 -.92V WITH MORE DRIVE IN.

TP36 (OUTPUT PIN, DRIVE/MORE DRIVE):  
 -15.5 NORMAL MODE.  
 -15.4 DRIVE MODE ("YELLOW").  
 +16V MORE DRIVE MODE ("RED").

**NOTE:**  
 THE FOOTSWITCH OVERRIDES THE FRONT PANEL SWITCHES.



- NOTES: (UNLESS SPECIFIED OTHERWISE)**
- 1.) LAST INSTANCES: C55 CP21 CR28 F1 J7 K2 L1 LA1 LD1 Q4 R105 S5 T2 TH1 U3 V5
  - 2.) SIX DIGIT NUMBERS ARE FENDER PART NUMBERS.
  - 3.) ALL RESISTORS 1/4W 5% CARBON FILM.
  - 4.) ALL VOLTAGES MEASURED WITH RESPECT TO GROUND USING A TRUE RMS DVM OF 1MΩ AC INPUT IMPEDANCE AND OF 10MΩ DC INPUT IMPEDANCE. VOLTAGES MAY VARY ±20%. TEST CONDITIONS: LINE VOLTAGE 120VAC 60Hz. ALL DC AND SUPPLY MEASUREMENTS MADE WITH NO INPUT SIGNAL. REVERB CONTROL AT FULL CCW. ALL OTHER CONTROLS AT 50% ROTATION. NORMAL BRIGHTNESS SWITCH DRIVE ("YELLOW") MODE SELECTED. BIAS SET TO 28mA PER OUTPUT TUBE. SEE NOTE 5.
- ⚠️ BIAS ADJUSTMENT - NO SIGNAL APPLIED, RATED LINE VOLTAGE AT T2 POWER TRANSFORMER PRIMARY! SET BIAS ADJUST POT R82 TO OBTAIN A READING OF +68mV AT TP30. VOLTAGE SHOWN AT BIAS POT WIPER IS FOR REFERENCE ONLY.
- ⚠️ READINGS OBSERVED AT TP21 AND TP22 WILL VARY GREATLY DEPENDING ON INDIVIDUAL REVERB PAN RESPONSE. THE VOLTAGE GAIN AT U2B SHOULD BE 82.
- ⚠️ COLORS IN PARENTHESES ARE FOR 230V AND 240V UNITS.
- ⚠️ "MORE DRIVE" ADDS 12.7dB OF GAIN TO THE "DRIVE" MODE.



**DATABASE FILE:** 73235.DBF

**CHECKED BY:** JLA

**DATE:** 08-MAY-96

**APPROVED:** MDW

**DATE:** 13-MAY-96

**TOLERANCES:** UNLESS OTHERWISE SPECIFIED:  
 X.X .10%  
 X.XX .01%  
 X.XXX .005%  
 ANGLES .500"

**PROPRIETARY**  
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 2621 Research Drive  
 Corona, CA 91728 USA

**TITLE:** SCHEMATIC DIAGRAM  
 HOT ROD DEVILLE

**SIZE:** DRAWING: WILKENS  
 DRAWING NUMBER: 050384 B

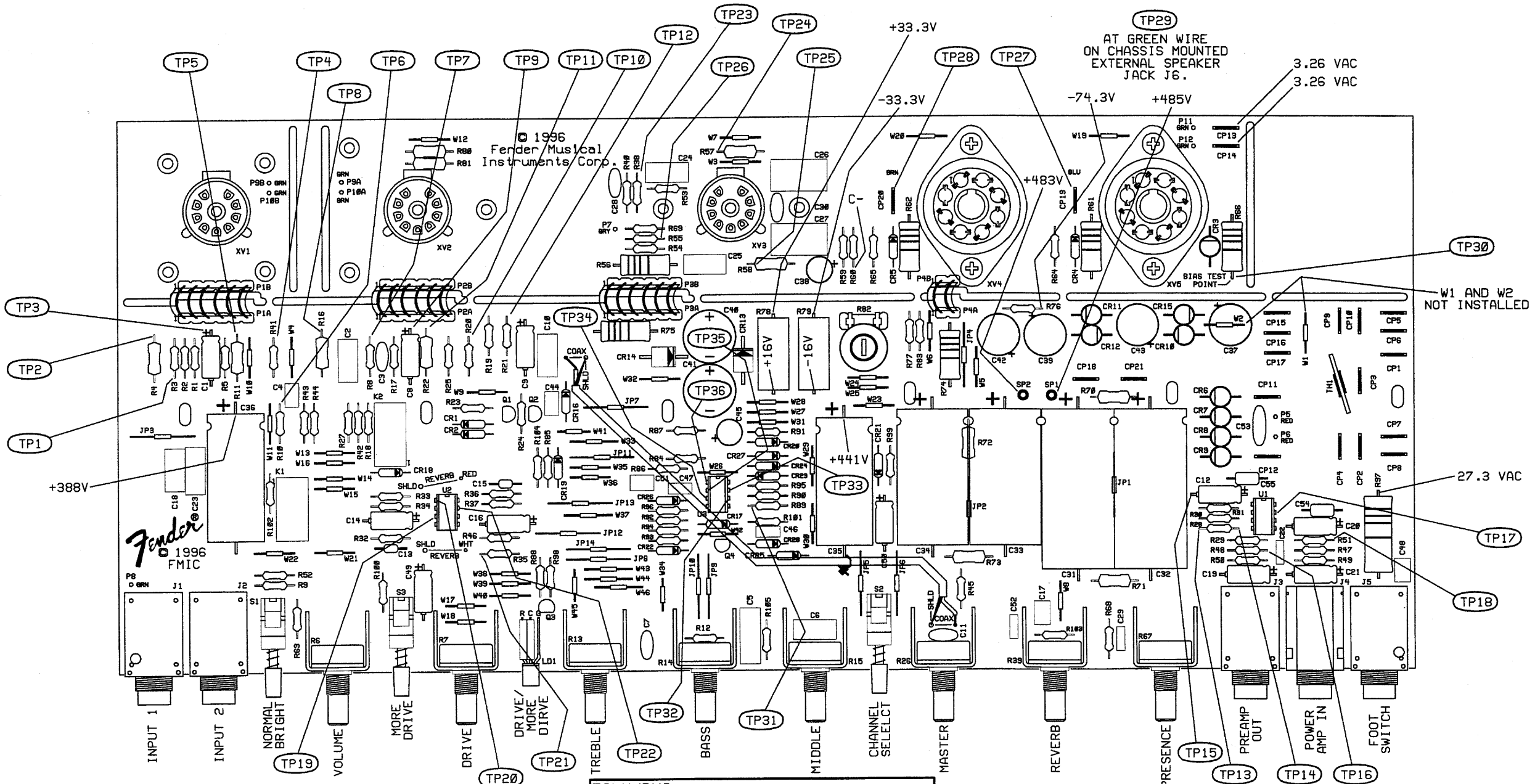
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 PLOTTED: 12-JUN-96

**REV.:** 1 OF 1

SHEET 1 OF 1

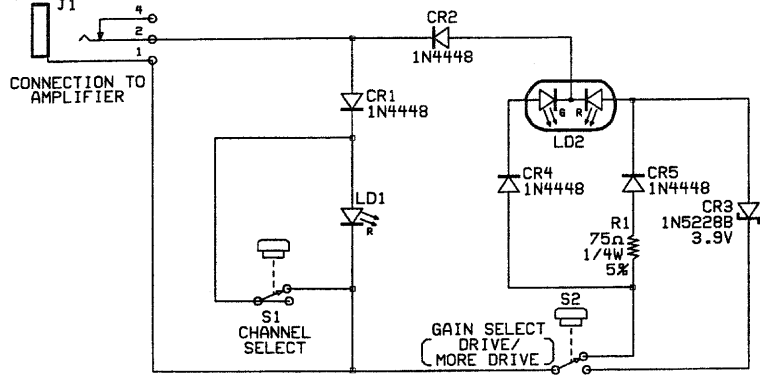
| REVISIONS |      |                |           |          |
|-----------|------|----------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION    | DATE      | APPROVED |
|           | A    | RELEASED PR323 | 13-MAY-96 | MDW      |

NOTES:  
1.) WIRES NOT SHOWN FOR CLARITY.



FILM/DWG: SERVICE DIAGRAM  
 DATABASE: Z323P.DBF DATE: 28-APR-96  
 LAYERS PLOTTED: 1 2 3 4 10 18

SCHEMATIC FOR FOOTSWITCH ASSEMBLY 050419.



DATABASE FILE: Z323P.DBF  
 CHECKED BY: JLA  
 DATE: 08-MAY-96  
 APPROVED: MDW  
 DATE: 13-MAY-96  
 TOLERANCES: UNLESS OTHERWISE NOTED  
 X.X ±0.050"  
 X.XX ±0.010"  
 X.XXX ±0.005"  
 ANGLES ±0.500°

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 FENDER MUSICAL INSTRUMENTS CO.  
 REGIONAL HEADQUARTERS  
 2621 RESEARCH DRIVE  
 CORONA, CA 91726 USA  
 IT IS TIME...  
 NEXT HIGHER ASSEMBLY:

**Fender MUSICAL INSTRUMENTS**  
 2621 Research Drive  
 Corona, CA 91720 USA

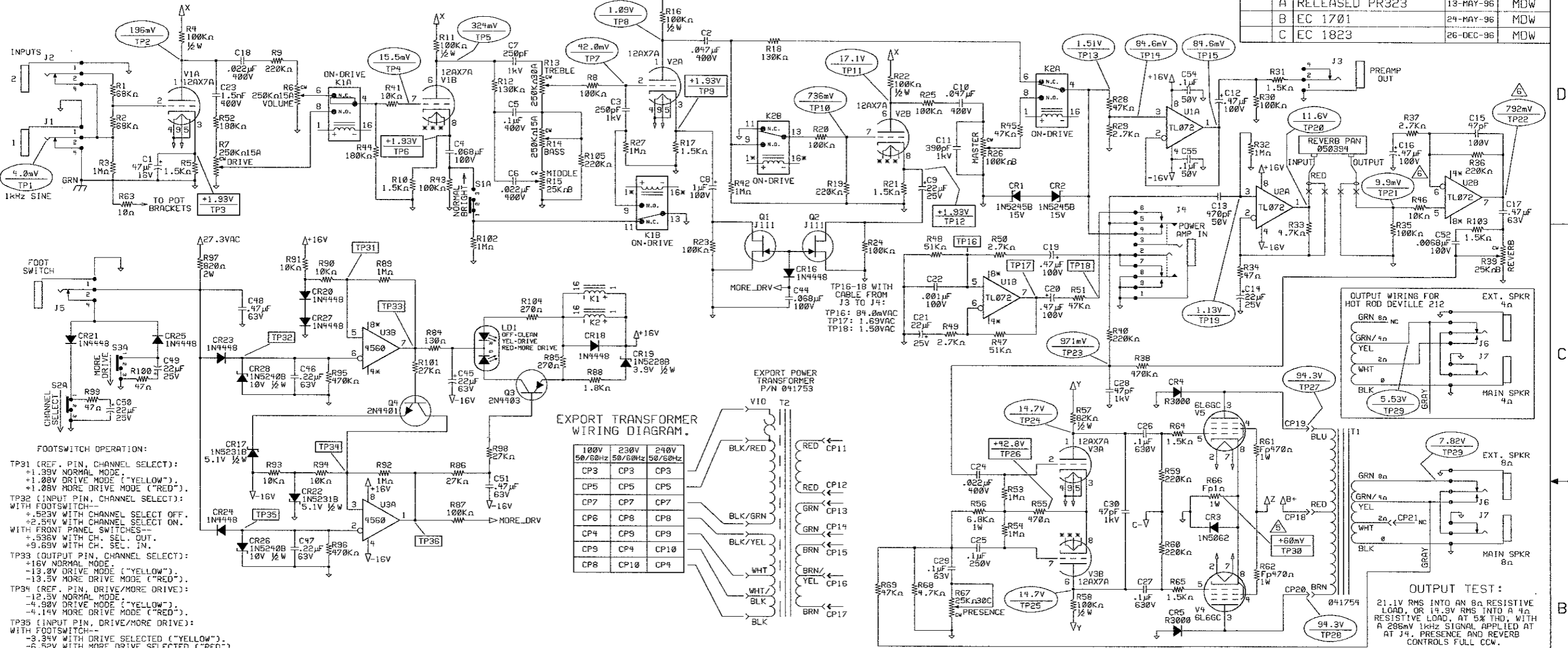
TITLE: SERVICE DIAGRAM  
 H/R DEVILLE, H/R DEVILLE 212.

|      |                  |                |      |
|------|------------------|----------------|------|
| SIZE | DRAWN: M.WILKENS | DRAWING NUMBER | REV. |
| C    | ENGR: M.WILKENS  | 050386         | A    |

SCALE: NONE  
 CREATED: 07-MAY-96  
 PLOTTED: 28-APR-96  
 SHEET 1 OF 1



| REVISIONS |      |                |           |          |
|-----------|------|----------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION    | DATE      | APPROVED |
|           | A    | RELEASED PR323 | 13-MAY-96 | MDW      |
|           | B    | EC 1701        | 24-MAY-96 | MDW      |
|           | C    | EC 1823        | 26-DEC-96 | MDW      |



**FOOTSWITCH OPERATION:**

TP31 (REF. PIN, CHANNEL SELECT):  
 +1.39V NORMAL MODE.  
 +1.08V DRIVE MODE ("YELLOW").  
 +1.08V MORE DRIVE MODE ("RED").

TP32 (INPUT PIN, CHANNEL SELECT):  
 WITH FOOTSWITCH--  
 +5.23V WITH CHANNEL SELECT OFF.  
 +2.54V WITH CHANNEL SELECT ON.  
 WITH FRONT PANEL SWITCHES--  
 +5.33V WITH CH. SEL. OUT.  
 +9.69V WITH CH. SEL. IN.

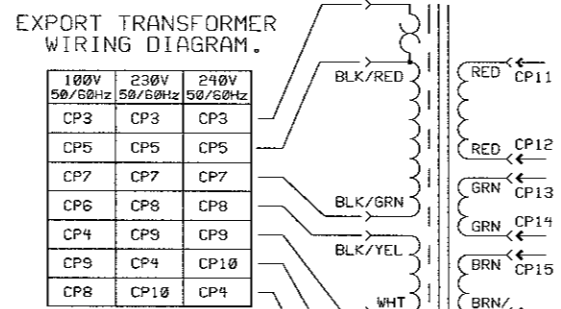
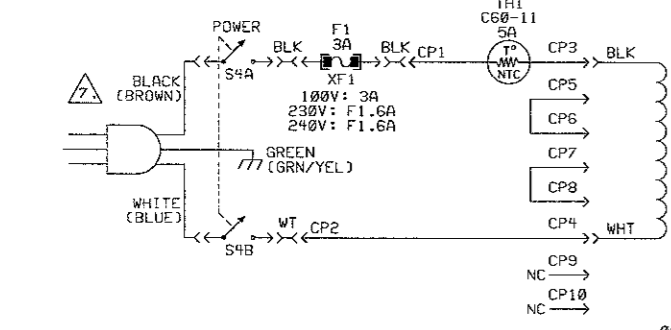
TP33 (OUTPUT PIN, CHANNEL SELECT):  
 +16V NORMAL MODE.  
 -13.0V DRIVE MODE ("YELLOW").  
 -13.5V MORE DRIVE MODE ("RED").

TP34 (REF. PIN, DRIVE/MORE DRIVE):  
 -12.5V NORMAL MODE.  
 -4.90V DRIVE MODE ("YELLOW").  
 -4.14V MORE DRIVE MODE ("RED").

TP35 (INPUT PIN, DRIVE/MORE DRIVE):  
 WITH FOOTSWITCH--  
 -3.34V WITH DRIVE SELECTED ("YELLOW").  
 -6.52V WITH MORE DRIVE SELECTED ("RED").  
 WITH FRONT PANEL SWITCHES--  
 -5.2V WITH MORE DRIVE OUT.  
 -9.92V WITH MORE DRIVE IN.

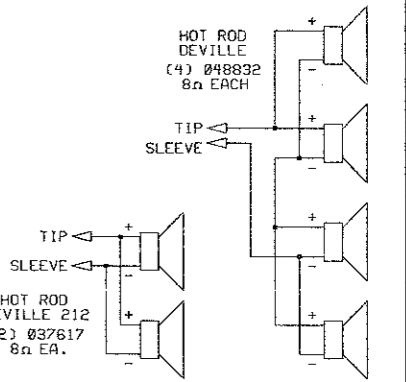
TP36 (OUTPUT PIN, DRIVE/MORE DRIVE):  
 -15.5 NORMAL MODE.  
 -15.4 DRIVE MODE ("YELLOW").  
 +16V MORE DRIVE MODE ("RED").

NOTE:  
 THE FOOTSWITCH OVERRIDES  
 THE FRONT PANEL SWITCHES.



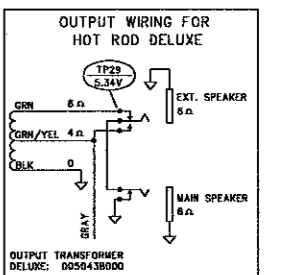
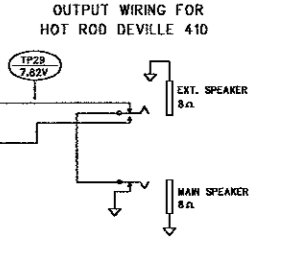
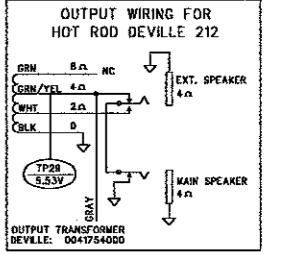
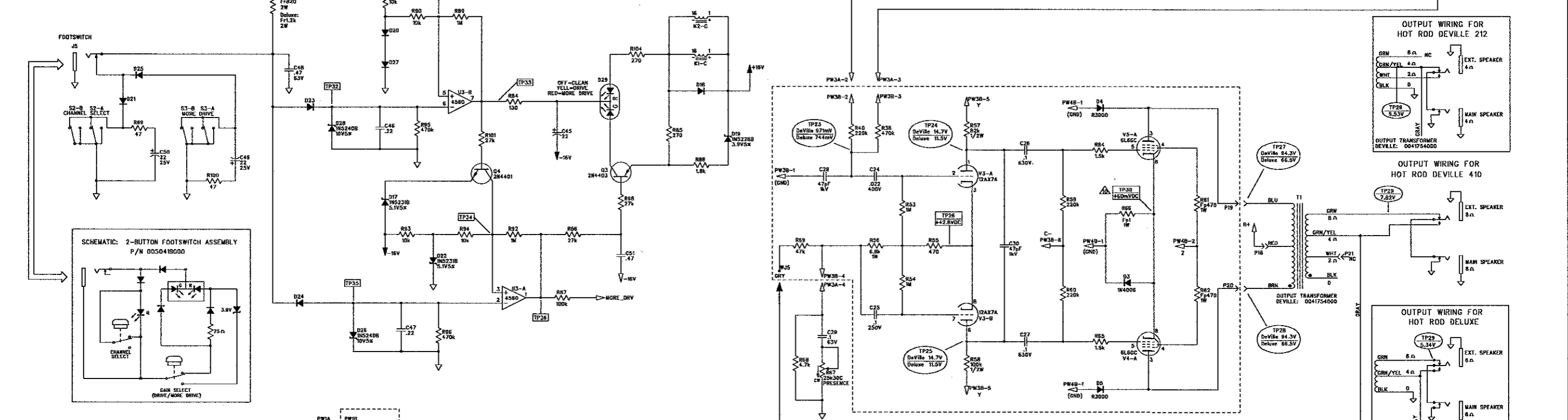
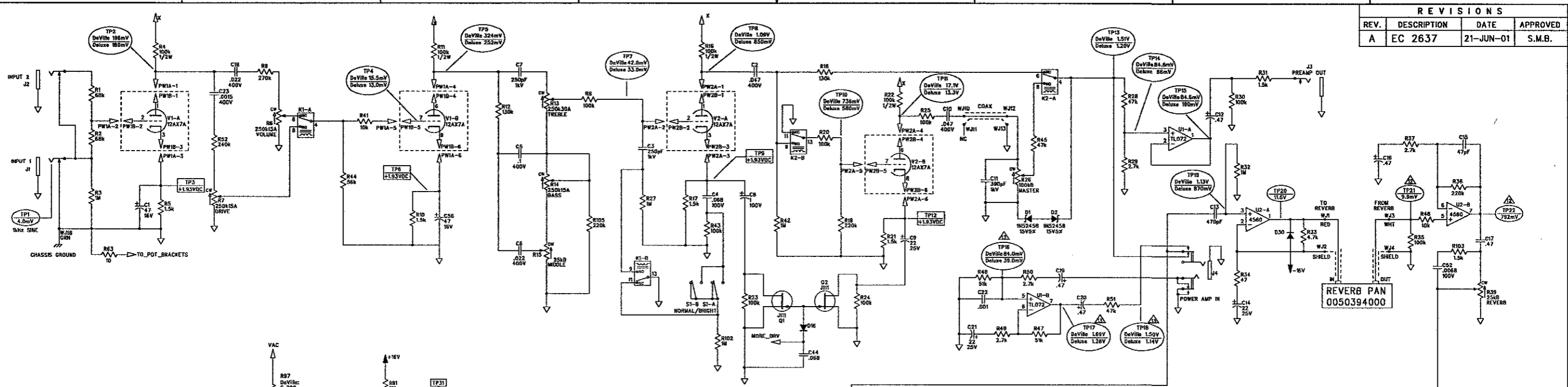
- NOTES: (UNLESS SPECIFIED OTHERWISE)**
- 1.) LAST INSTANCES: C55 CP21 CR28 F1 J7 K2 L1 LA1 LD1 Q4 R105 S5 T2 TH1 U3 V5
  - 2.) SIX DIGIT NUMBERS ARE FENDER PART NUMBERS.
  - 3.) ALL RESISTORS 1/4W 5% CARBON FILM.
  - 4.) ALL VOLTAGES MEASURED WITH RESPECT TO GROUND USING A TRUE RMS DVM OF 1MΩ AC INPUT IMPEDANCE AND OF 10MΩ DC INPUT IMPEDANCE. VOLTAGES MAY VARY ±20%. TEST CONDITIONS:  
 LINE VOLTAGE 120VAC 60Hz.  
 ALL DC AND SUPPLY MEASUREMENTS MADE WITH NO INPUT SIGNAL.  
 REVERB CONTROL AT FULL CCW.  
 ALL OTHER CONTROLS AT 50% ROTATION.  
 NORMAL BRIGHT SWITCH OUT.  
 DRIVE ("YELLOW") MODE SELECTED.  
 BIAS SET TO 30mA PER OUTPUT TUBE. SEE NOTE 5.
- ⚠ BIAS ADJUSTMENT - NO SIGNAL APPLIED, RATED LINE VOLTAGE AT T2 POWER TRANSFORMER PRIMARY:  
 SET BIAS ADJUST POT R82 TO OBTAIN A READING OF +60mV AT TP30. VOLTAGE SHOWN AT BIAS POT WIPER IS FOR REFERENCE ONLY.
- ⚠ READINGS OBSERVED AT TP21 AND TP22 WILL VARY GREATLY DEPENDING ON INDIVIDUAL REVERB PAN RESPONSE. THE VOLTAGE GAIN AT U2B SHOULD BE 82.
- ⚠ COLORS IN PARENTHESES ARE FOR 230V AND 240V UNITS.
- 8.) "MORE DRIVE" ADDS 12.7dB OF GAIN TO THE "DRIVE" MODE.

**OUTPUT TEST:**  
 21.1V RMS INTO AN 8Ω RESISTIVE LOAD, OR 14.3V RMS INTO A 4Ω RESISTIVE LOAD, AT 5% THD, WITH A 286mV 1kHz SIGNAL APPLIED AT J4. PRESENCE AND REVERB CONTROLS FULL CCW.



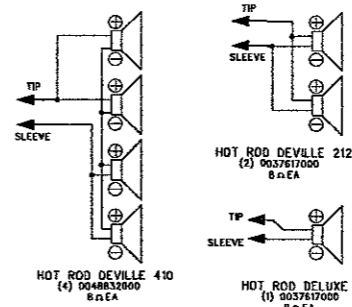
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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DATABASE FILE:<br>73235.DBF<br>CHECKED BY: JLA<br>DATE: 08-MAY-96<br>APPROVED: MDW<br>DATE: 13-MAY-96<br>TOLERANCES: UNLESS OTHERWISE NOTED<br>X.X .050"<br>X.XX .010"<br>X.XXX .005"<br>ANGLES .0500" | <b>PROPRIETARY</b><br>THIS DRAWING DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO AND IS THE PROPERTY OF THE FENDER MUSICAL INSTRUMENTS CO. AND MAY NOT BE USED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN CONSENT FROM FENDER MUSICAL INSTRUMENTS CO.<br>REGIONAL HEADQUARTERS<br>2621 RESEARCH DRIVE<br>CORONA, CA 91720 USA<br>IT IS THE PROPERTY OF FENDER MUSICAL INSTRUMENTS CO. | <b>Fender</b> MUSICAL INSTRUMENTS<br>2621 Research Drive<br>Corona, CA 91720 USA<br><b>TITLE: SCHEMATIC DIAGRAM</b><br><b>HOT ROD DEVIILE</b><br>SIZE: DRAWN: M. WILKENS DRAWING NUMBER: 050384 C REV. D ENGR: M. WILKENS<br>NEXT HIGHER ASSEMBLY: 050388 PCB ASSY HOT ROD DVL/212<br>SCALE: NONE<br>CREATED: 11-AUG-95<br>PLOTTED: 26-DEC-96 SHEET 1 OF 1 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| REVISIONS |             |           |          |
|-----------|-------------|-----------|----------|
| REV.      | DESCRIPTION | DATE      | APPROVED |
| A         | EC 2637     | 21-JUN-01 | S.M.B.   |



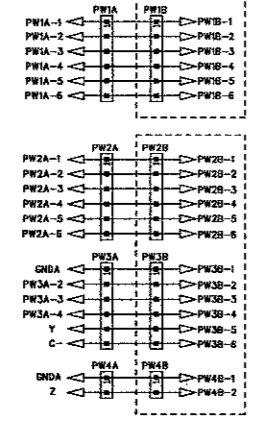
**OUTPUT TEST:**  
 21.1V RMS INTO AN 8 Ω RESISTIVE LOAD, OR 14.9V RMS INTO A 4 Ω RESISTIVE LOAD, AT 5K THD, WITH A 286mV 1kHz SIGNAL APPLIED AT J4. PRESENCE AND REVERB CONTROLS FULL CCW.

**SPEAKER WIRING**



**FOOTSWITCH OPERATION:**

- TP31 (REF. P.M. CHANNEL SELECT):  
 +1.50V NORMAL MODE  
 +1.00V DRIVE MODE ("YELLOW")  
 +1.00V MORE DRIVE MODE ("RED")
- TP32 (INPUT P.M. CHANNEL SELECT):  
 WITH FOOTSWITCH:  
 +5.25V WITH CHANNEL SELECT OFF.  
 +2.54V WITH CHANNEL SELECT ON.  
 WITH FRONT PANEL SWITCHES:  
 +5.36V WITH CHANNEL SELECT OFF.  
 +9.85V WITH CHANNEL SELECT ON.
- TP33 (OUTPUT P.M. CHANNEL SELECT):  
 +10.0V NORMAL MODE  
 -13.0V DRIVE MODE ("YELLOW")  
 -13.5V MORE DRIVE MODE ("RED")
- TP34 (REF. P.M. DRIVE/MORE DRIVE):  
 -12.5V NORMAL MODE  
 -4.90V DRIVE MODE ("YELLOW")  
 -2.14V MORE DRIVE MODE ("RED")
- TP35 (INPUT P.M. DRIVE/MORE DRIVE):  
 WITH FOOTSWITCH:  
 -3.34V WITH DRIVE SELECTED ("YELLOW")  
 -6.50V WITH MORE DRIVE SELECTED ("RED")  
 WITH FRONT PANEL SWITCHES:  
 -3.2V WITH MORE DRIVE OFF.  
 -6.92V WITH MORE DRIVE ON.
- TP36 (OUTPUT P.M. DRIVE/MORE DRIVE):  
 -15.5V NORMAL MODE  
 -15.5V DRIVE MODE ("YELLOW")  
 +16.0V MORE DRIVE MODE ("RED")



- 1. ALL RESISTORS IN OHMS, 5K, 1/4W.
- 2. ALL POLARIZED CAPACITORS IN μF, 20K; 50V MINIMUM.
- 3. ALL UNPOLARIZED CAPACITORS IN μF, 10K OR BETTER; 50V MINIMUM.
- 4. ALL DIODES ARE 1N4148.
- 5. THIS SCHEMATIC IS FOR PCB FABRICATION 0057226000
- 6. THIS SCHEMATIC IS FOR THE FOLLOWING PCB ASSEMBLIES: 0057248000 PCB ASSY HOT ROD DELUXE; 0057250000 PCB ASSY HOT ROD DEVILLE
- 7. THE FOLLOWING ITEMS ARE NOT STUFFED IN DELUXE PCB ASSY 0057248000: C32, C34, C37, D10, P17, P21, R70, R72, R83, W3, W4
- 8. THE FOLLOWING ITEMS ARE NOT STUFFED IN DEVILLE PCB ASSY 0057250000: W1, W2
- 9. THE FOLLOWING ITEMS DIFFER IN VALUE BETWEEN THE DEVILLE AND DELUXE PCB ASSEMBLIES: C33, R76, R78, R79, R97. ALSO, R71 AND R73 ARE STUFFED WITH WIRE JUMPERS IN THE DELUXE PCB ASSY.
- 10. LAST REFERENCE DESIGNATORS USED: C66, D30, FL 25, K2, P21, PW4, D4, R05, R11, S5, SP2, U3, V5, W4B
- 11. ALL VOLTAGES MEASURED WITH RESPECT TO GROUND USING A TRUE RMS DVM OF 200 AC INPUT IMPEDANCE AND OF 10M Ω AC INPUT IMPEDANCE. VOLTAGES MAY VARY +/-20% TEST CONDITIONS.
- 12. READINGS OBSERVED AT TP31 AND TP32 WILL VARY GREATLY DEPENDING ON NORMAL REVERB PAN RESPONSE. THE VOLTAGE GAIN AT U2B SHOULD BE 02.
- 13. TP 16-18 WITH CABLE FROM J3 TO J4
- 14. "MORE DRIVE" ADDS 12.7dB OF GAIN TO THE "DRIVE" MODE.
- 15. CIRCUITS INSIDE DASHED BOXES ARE ON BREAKAWAYS.
- 16. "POWER DRIVE" ADDS 12.7dB OF GAIN TO THE "DRIVE" MODE.
- 17. TP 16-18 WITH CABLE FROM J3 TO J4
- 18. READINGS OBSERVED AT TP31 AND TP32 WILL VARY GREATLY DEPENDING ON NORMAL REVERB PAN RESPONSE. THE VOLTAGE GAIN AT U2B SHOULD BE 02.
- 19. ALL VOLTAGES MEASURED WITH RESPECT TO GROUND USING A TRUE RMS DVM OF 200 AC INPUT IMPEDANCE AND OF 10M Ω AC INPUT IMPEDANCE. VOLTAGES MAY VARY +/-20% TEST CONDITIONS.
- 20. UNIT OPERATING AT RATED LINE VOLTAGE. ALL DC AND SUPPLY MEASUREMENTS MADE WITH NO INPUT SIGNAL. REVERB CONTROL AT FULL CCW. NORMAL BRIGHT SWITCH OUT. DRIVE ("YELLOW") MODE SELECTED. BIAS SET TO 30mV PER OUTPUT TUBE. SEE NOTE 10.

NOTES: (UNLESS OTHERWISE NOTED)

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**Fender** MUSICAL INSTRUMENTS  
 Corona, CA U.S.A.

CHECKED BY: *B. Vess*  
 DATE: 26-JUN-01

APPROVED BY: *S. Bankhead*  
 DATE: 26-JUN-01

DRAWN: Don Fox ENGR: S. Bankhead  
 DATABASE FILE: 74855.SCH

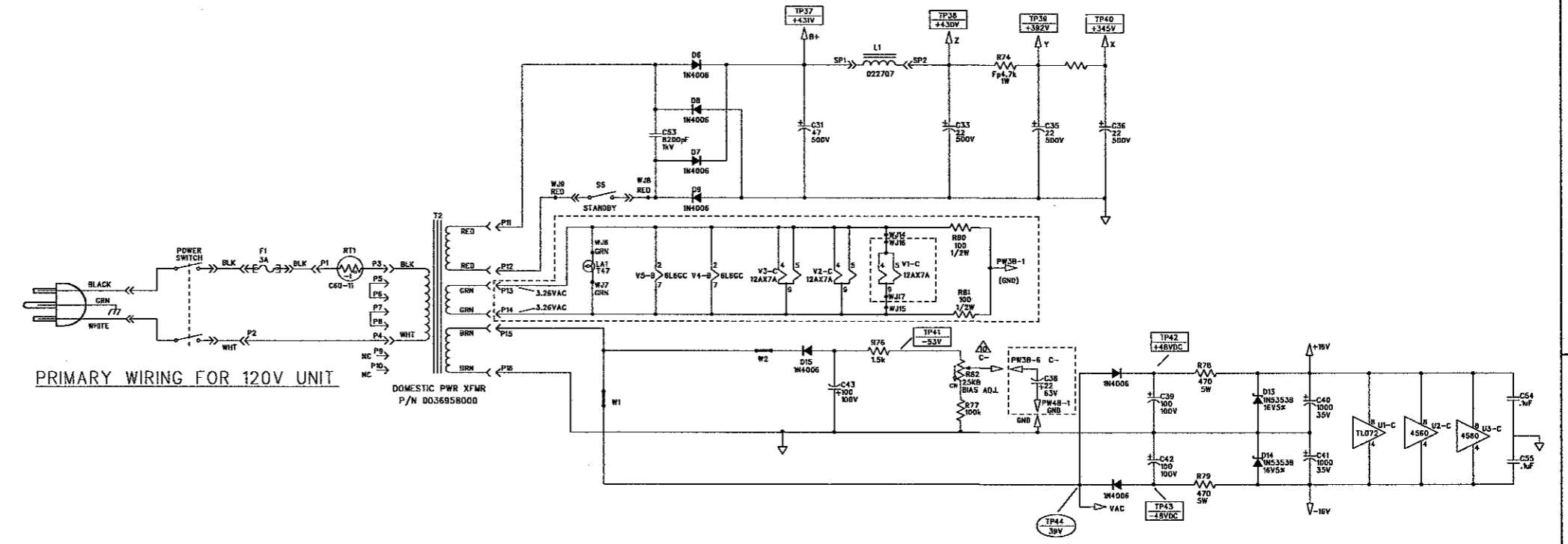
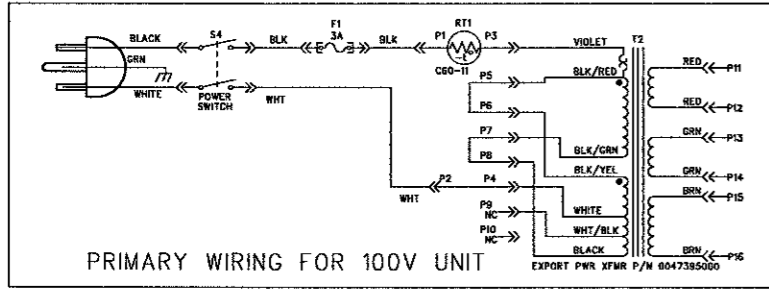
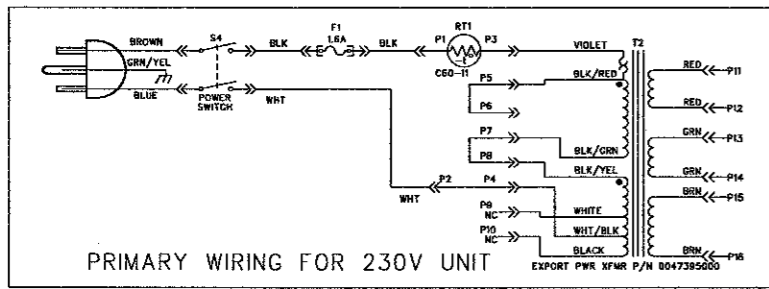
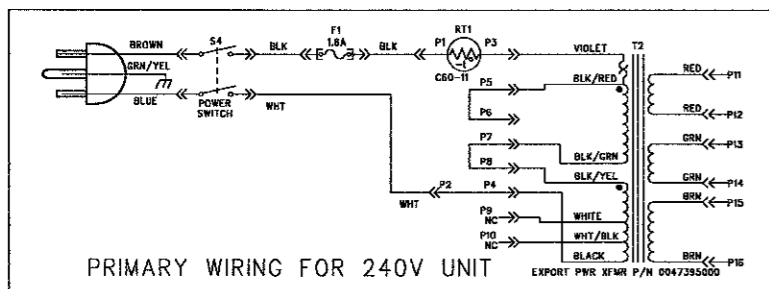
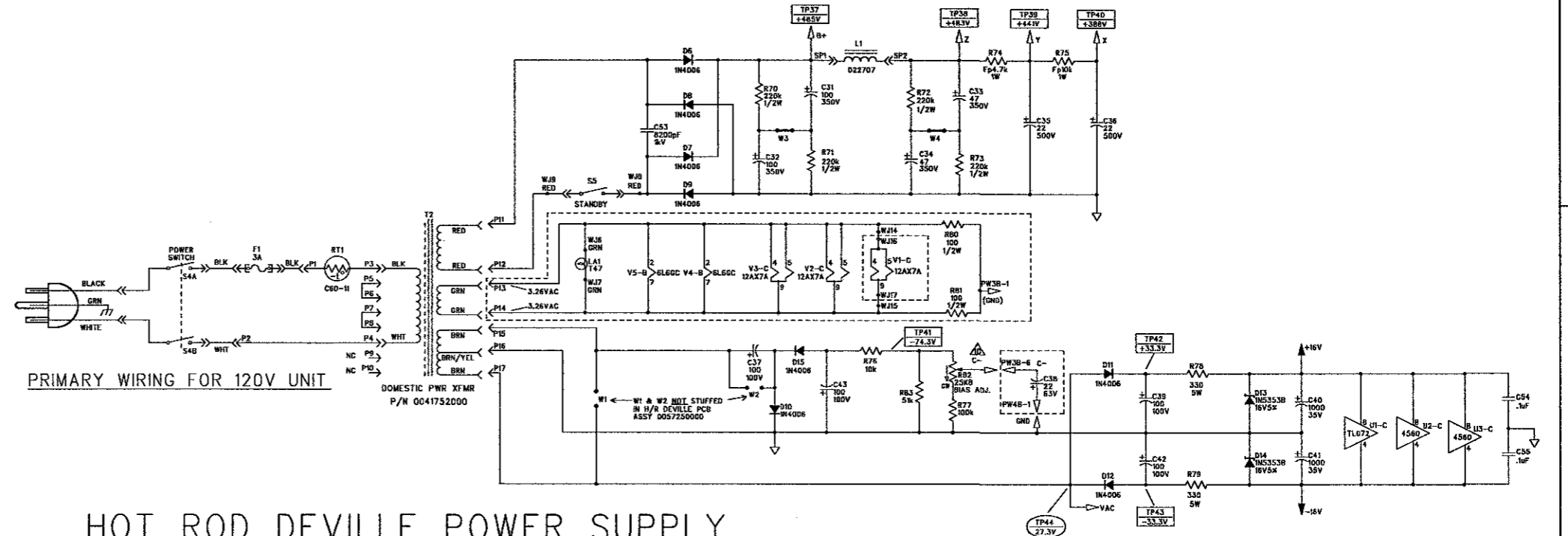
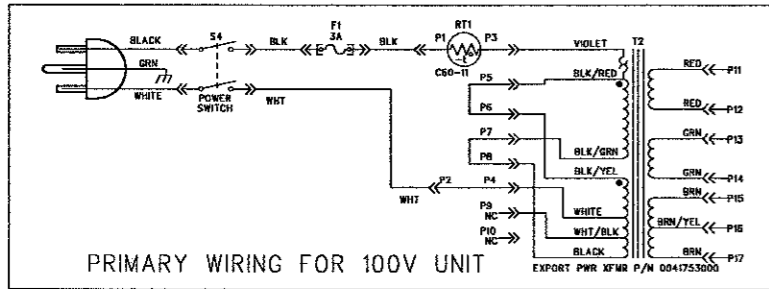
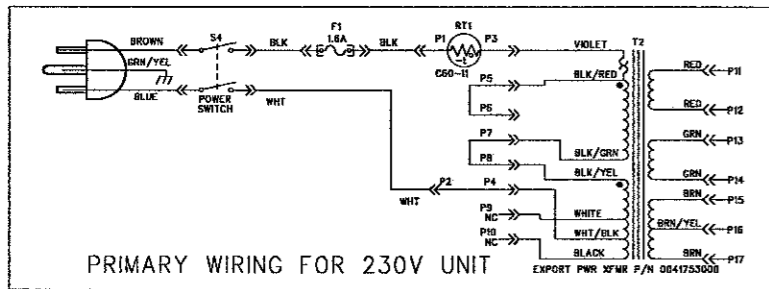
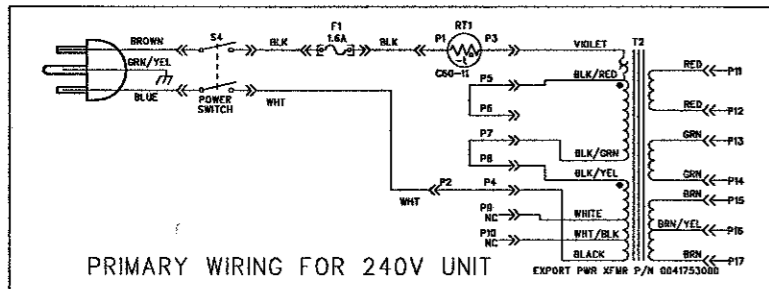
TITLE: SERVICE DIAGRAM, COMBINED (echematic)  
 HOT ROD DELUXE/DEVILLE

SIZE: DRAWING NUMBER  
 D 0057251000

REV. A

RELEASE DATE: 21-JUN-01 SHEET: 1 OF 3

| REVISIONS |             |           |          |
|-----------|-------------|-----------|----------|
| REV.      | DESCRIPTION | DATE      | APPROVED |
| A         | EC 2637     | 21-JUN-01 | S.M.B    |



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**Fender** MUSICAL INSTRUMENTS  
Corona, CA U.S.A.

CHECKED BY: *S. Bankhead*  
DATE: 26-JUL-01

APPROVED BY: *S. Bankhead*  
DATE: 26-JUL-01

DRAWN: S.Bankhead  
DATABASE FILE: 24855.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)  
HOT ROD DELUXE/DEVILLE

SIZE: D  
DRAWING NUMBER: 0057251000  
RELEASE DATE: 21-JUN-01

REV. A  
SHEET: 2 OF 3

NOTES: SEE SHEET 1

8

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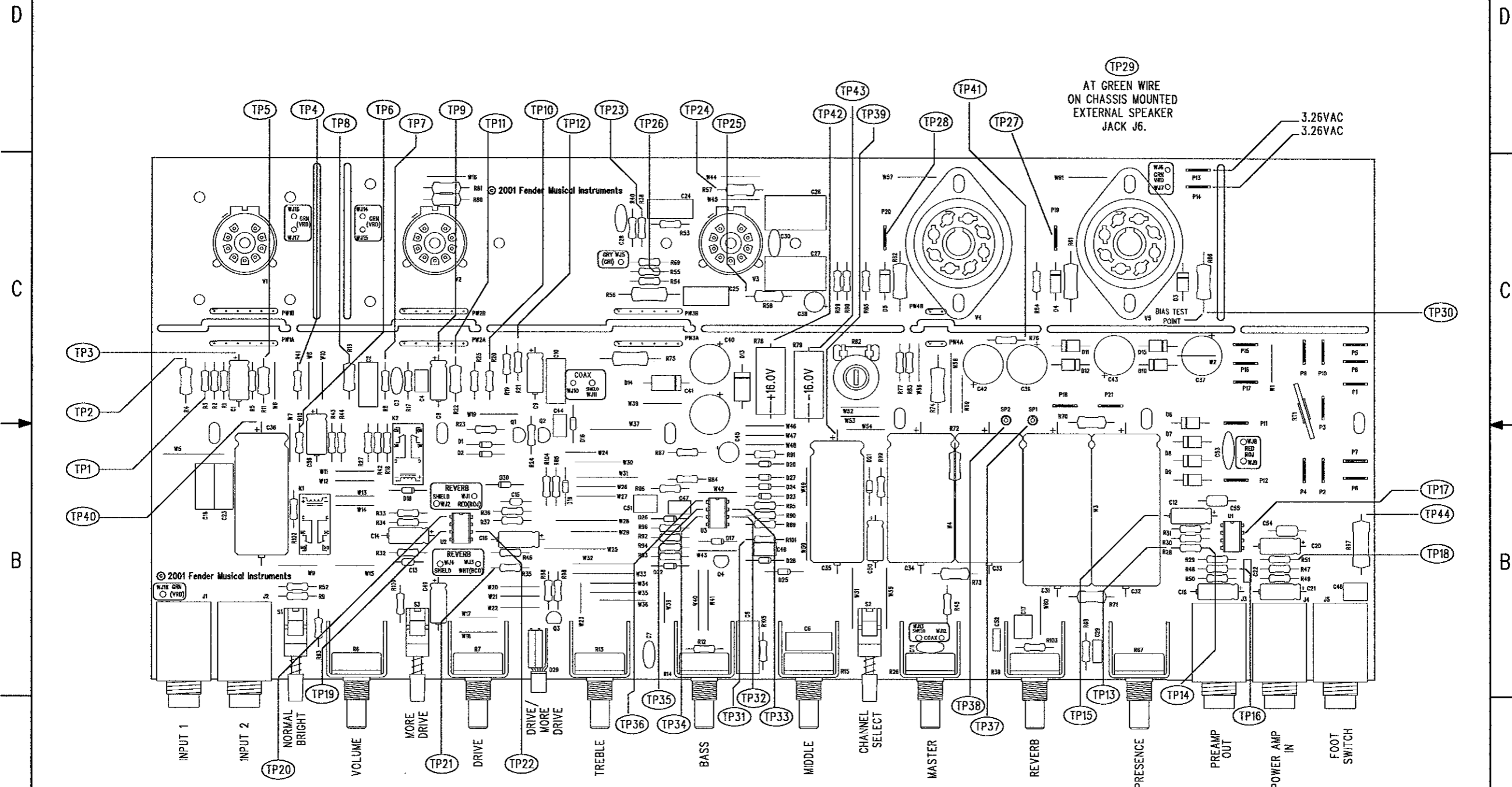
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| REVISIONS |             |           |          |
|-----------|-------------|-----------|----------|
| REV.      | DESCRIPTION | DATE      | APPROVED |
| A         | EC 2637     | 21-JUN-01 | S.M.B.   |



TP29  
AT GREEN WIRE  
ON CHASSIS MOUNTED  
EXTERNAL SPEAKER  
JACK J6.  
3.26VAC  
3.26VAC

FILM/DWG: SERVICE DIAGRAM  
DATABASE: Z485P.PCB DATE: 21-JUN-01

3. SEE PAGE 1 FOR NOTES AND TEST CONDITIONS
  2. WIRES NOT SHOWN FOR CLARITY
  1. PCB SHOWN BEFORE POWER AMP BREAKAWAY IS INSTALLED IN CHASSIS
- NOTES: (UNLESS OTHERWISE NOTED)

|                                                                                                                                                                                                                                                  |                          |                                                                                                                                        |                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p>THIS DOCUMENT CONTAINS INFORMATION OF A PROPRIETARY NATURE TO FENDER MUSICAL INSTRUMENTS AND IS SUBMITTED TO YOU IN CONFIDENCE AND SHALL NOT BE DISCLOSED OR TRANSMITTED TO OTHERS WITHOUT AUTHORIZATION FROM FENDER MUSICAL INSTRUMENTS.</p> |                          |  <p>MUSICAL INSTRUMENTS<br/>Corona, CA U.S.A.</p> |                                   |
| <p>CHECKED BY: <i>B. Resi</i><br/>DATE: <i>26-JUL-01</i></p>                                                                                                                                                                                     |                          | <p>TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)<br/>HOT ROD DELUXE/DEVILLE</p>                                                          |                                   |
| <p>APPROVED BY: <i>S. Bankhead</i><br/>DATE: <i>26-JUL-01</i></p>                                                                                                                                                                                |                          | <p>SIZE: C</p>                                                                                                                         | <p>DRAWING NUMBER: 0057251000</p> |
| <p>DRAWN: Don Fox</p>                                                                                                                                                                                                                            | <p>ENGR: S. Bankhead</p> | <p>RELEASE DATE: 21-JUN-01</p>                                                                                                         | <p>REV. A</p>                     |
| <p>DATABASE FILE: Z485P.PCB</p>                                                                                                                                                                                                                  |                          | <p>SHEET 3 OF 3</p>                                                                                                                    |                                   |

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1