



# SUNN 300T

p/n 021-3302-000 (120V)

## SERVICE MANUAL

**SUNN 300T**  
(This is the model name for warranty claims)

JULY 1998

### IMPORTANT NOTICE:

The information contained herein is CONFIDENTIAL and PROPRIETARY to Fender Musical Instruments Co. 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

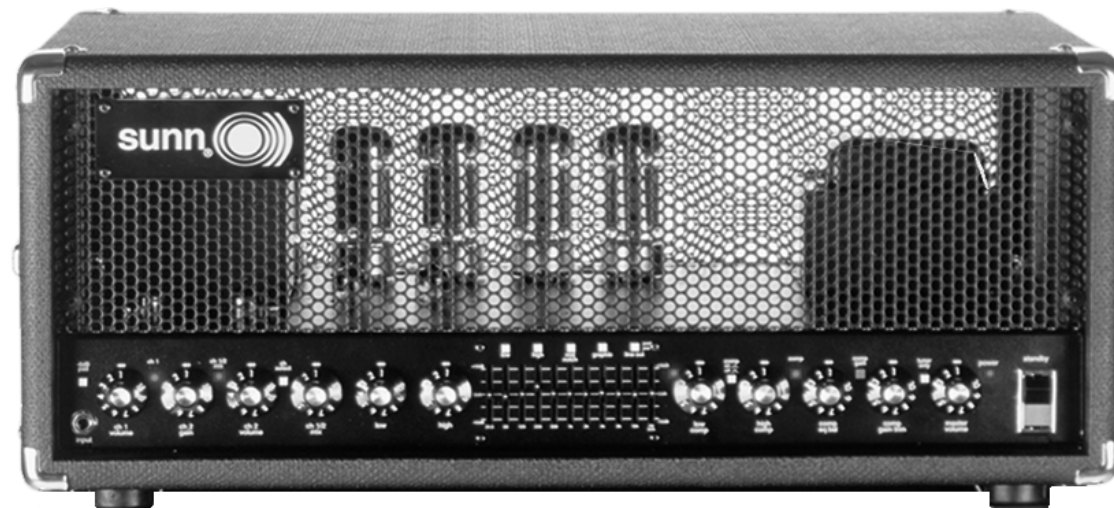
|         |   |                          |
|---------|---|--------------------------|
| CAP AE  | = | Aluminum Electrolytic    |
| CAP CA  | = | Ceramic Axial            |
| CAP CD  | = | Ceramic Disk             |
| CAP MPF | = | Metalized Polyester Film |
| CAP MY  | = | Mylar                    |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

#### 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            |

#### RESISTOR CODES

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



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# SPECIFICATIONS

|   |  |
|---|--|
| <b>Product Release No.:</b>                       | PR 347 <i>(This is not a model number)</i>   |
| <b>Part Number:</b>                               | 120V Version : 21-3302<br>240V Aust : 21-3332<br>230V UK : 21-3342<br>230V : 21-3362<br>100V : 21-3372 |
| <b>Power Requirements:</b>                        | All Versions : 900W  |
| <b>Preamp Section</b>                             |  |
| <b>Input impedance:</b>                           | 470 k $\Omega$   |
| <b>Full power sensitivity:</b>                    | 12 mV  |
| <b>Tone controls:</b>                             | Treble: +/- 15 dB @ 6kHz<br>Bass: +/- 15 dB @ 40Hz   |
| <b>Graphic equalizer:</b>                         | +/- 12 dB @ 31.5Hz, 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz                           |
| <b>Mid notch:</b>                                 | -20 dB @ 700Hz   |
| <b>Low boost:</b>                                 | +10 dB @ 40Hz  |
| <b>High boost:</b>                                | +10 dB @ 6kHz  |
| <b>Compressor</b>                                 |  |
| <b>Crossover:</b>                                 | 400Hz  |
| <b>Ratio:</b>                                     | 1:1 min to 4:1 max   |
| <b>Line out level:<br/>(Transformer balanced)</b> | +6 dB referenced to input (pre), 0 dBV (post)  |
| <b>Power amplifier section</b>                    |  |
| <b>Input impedance:</b>                           | 20 k $\Omega$  |
| <b>Power output:</b>                              | 300 Watts RMS into 2, 4, 0r 8 $\Omega$ @ <3% THD   |
| <b>Sensitivity:</b>                               | 1V RMS (0dBV)  |
| <b>Speaker Complement:</b>                        | Designed for use with the Sunn 410H or Sunn 215 Bass Loudspeaker Enclosures                            |
| <b>Dimensions:</b>                                | Height: 10.1" (25.7 cm)<br>Width: 25.5" (64.8 cm)<br>Depth: 15.6" (40 cm)                              |
| <b>Weight:</b>                                    | 75 lbs. (34 kg)  |

*Product specifications are subject to change without notice*

# CIRCUIT DESCRIPTION

## Preamp

The preamp section employs two 12AX7 tubes. Channel one (V1) is fairly conventional, while channel two (V2) uses a second tube with additional op-amp gain (U2B) to provide a 60's style overdrive sound. The op-amp is used as straight gain and is never allowed to become non-linear.

In typical operation, the drive channel and the clean channel are presented to the channel 1/2 mix control (R17) so that a "blend" can be established. The channel select button (S9) on the front panel (or it's foot switch counterpart) selects between this channel mix or channel one only. This selection employs JFETS Q1-Q4.

Signals are then presented to a second - order Sallen and Key filter set to  $F_0$  of 36.6 Hz and a Q of 2.1. This filter provides about 6.5dB of boost at 41 Hz.

The signal path is routed to U17B where low-boost (S3), mid-notch (S2), and high-boost (S4) equalization switches can be used. These circuits are followed by conventional Baxendall low (R58) and high (R62) equalization. The Baxendall circuit output is then sent to a graphic equalizer which can be selected by the footswitch or graphic EQ button (S7) on the front panel. The far-right graphic EQ slider (R71) is a +/- 10dB trim for graphic EQ gain compensation.

Next, the signal is presented to a second-order state-variable filter before being presented to the compressor circuit. Said filter is set to 420 Hz. At the compressor, low-frequency compression ratio (R100) and high-frequency compression ratio (R119) are adjustable to suit the user. Audio is presented to the "compressor EQ balance" (R102). The compressor EQ balance controls the mix ratios of the compressor outputs. A compressor gain trim (R80) is provided to compensate for the amount of amplification lost due to using the compressor. The compressor-gain trim control is able to compensate for a compressed signal of up to 10dB.

The FETs Q5 and Q6 select between pre- and post-compressor via the front panel switch (S8) or footswitch. After passing through op-amp U9B and master-gain control R107, the signal is sent to output jack J2, effects-loop send. The signal input at J3, effects-loop return, goes to differential receiver U11A.

Heater voltage (24VDC for 2 series-connected 12AX7s in the preamp) is derived from the 32VDC supply (+/- 16VDC).. Excess voltage is dropped across across paralleled ballast resistors, R354-R356, on the preamp PCB.

# CIRCUIT DESCRIPTION (CONT)

## Output section

On the top side of the chassis, at the rear of each pair (total = 3) of output tubes, is an LED and a fuse. The LED glows green when the associated pair of tubes is operating properly, and glows red if a tube failure has caused the related fuse to blow. If a fuse blows, replace it only with one of the same type and rating. **NEVER use a fuse with a higher current rating, as this could damage the equipment and present a serious safety hazard.** Next, replace the tubes in their respective locations, check and adjust the bias and balance.

**NOTE: it is normal for the LEDs to glow red when the amp is in standby mode.**

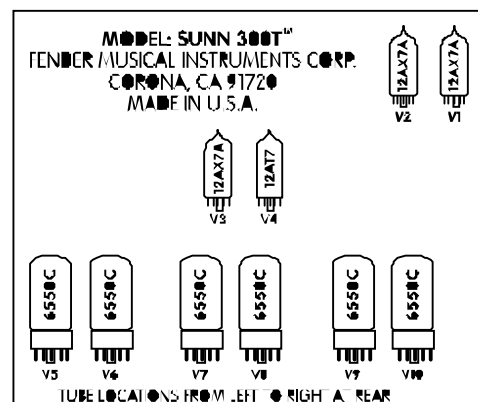
### Output tube bias adjustment instructions

1. Turn on the 300T and let it warm up for at least two minutes with the STANDBY switch in the ON position. Make sure the amplifier is connected to a speaker or equivalent load.
2. Remove the bias controls cover box.
3. With a DVM set to it's most sensitive DC voltage scale, measure the voltage between the **BIAS 100mV** test points, and adjust the **BIAS** control for a reading of .1 VDC (100mVDC)..
4. Next, connect the DVM to the **BALANCE 0V** test points, and adjust the **BALANCE** control for a reading of 0 VDC.
5. Replace the bias controls cover box.

### NOTES:

1. For optimum sonic performance, set bias to 100 mVDC first, then set balance.
2. If the output tubes cannot be biased to at least 80 mVDC, replace the 6550C output tubes.
3. If the output tubes cannot be balanced, check the bias setting and/or replace the 6550C output tubes.
4. If the power tube trouble LEDs are glowing green, it does not indicate that the tubes are not worn or weak.

### Tube layout:



# PARTS LIST

**NOTE: SHADED ITEMS ARE FOR REFERENCE ONLY**

## PRINTED CIRCUIT BOARD ASSEMBLY

| QTY | PART # | DESCRIPTION                    | REFERENCE DESIGNATION   |
|-----|--------|--------------------------------|---|
| 4   | 054360 | CAP AE AX 22uF 450V 20% 105C   | C162 C166 C170 C176   |
| 2   | 054361 | CAP AE AX 47uF 450V 20% 105C   | C156 C159   |
| 4   | 033606 | CAP AE RDL .47uF 50V 20%       | C102 C126 C127 C130   |
| 2   | 054355 | CAP AE RDL 1000uF 50V 20% 105C | C174-175  |
| 8   | 028463 | CAP AE RDL 10uF 50V 20%        | C41 C78 C81 C85 C88 C113 C178-179   |
| 1   | 028458 | CAP AE RDL 1uF 50V 20%         | C82   |
| 4   | 028459 | CAP AE RDL 2.2uF 50V 20%       | C27 C109 C112 C120  |
| 36  | 028467 | CAP AE RDL 22uF 50V 20%        | C16 C19-20 C31 C33-34 C36 C38-39<br>C45<br>C48 C51 C54 C57 C61 C64 C67 C70<br>C73-74 C80 C84 C86 C103 C107-108<br>C111 C115 C117 C124 C128 C144<br>C145 C147 C149-150 |
| 3   | 054356 | CAP AE RDL 330uF 450V 20% 105C | C171-173  |
| 4   | 028460 | CAP AE RDL 4.7uF 50V 20%       | C2 C11 C12 C26  |
| 1   | 038699 | CAP CA 100pF 100V 5%           | C37   |
| 2   | 039265 | CAP CA 2200pF 100V 5%          | C79 C110  |
| 7   | 039259 | CAP CA 220pF 100V 5%           | C8 C40 C104-106 C114 C116   |
| 5   | 038873 | CAP CA 22pF 100V 5%            | C6 C15 C42 C59 C83  |
| 1   | 039261 | CAP CA 330pF 100V 5%           | C142  |
| 2   | 038701 | CAP CA 470pF 50V 5%            | C77 C163  |
| 2   | 039256 | CAP CA 68pF 100V 5%            | C118 C119   |
| 25  | 034788 | CAP CD .1uF 50V 20% .15" cut   | C4-5 C89-100 C121 C140-141 C146<br>C148<br>C151-155 C169<br>C167-168 C177   |
| 3   | 025995 | CAP CD 8200pF 1000V 20% LL     | C30   |
| 1   | 027256 | CAP MPF .0015uF 100V 10%       | C123 C125 C129  |
| 3   | 027260 | CAP MPF .0039uF 100V 10%       | C32 C35   |
| 2   | 027264 | CAP MPF .01uF 100V 10%         | C18   |
| 1   | 024823 | CAP MPF .01uF 400V 10%         | C23-25 C55-56 C58 C60 C62-63 C75-76   |
| 11  | 027267 | CAP MPF .022uF 100V 10%        | C160-161  |
| 2   | 024835 | CAP MPF .022uF 630V 10%        | C9-10 C87 C131-133 C138-139 C143  |
| 9   | 027272 | CAP MPF .047uF 63V 10%         | C22   |
| 1   | 027275 | CAP MPF .068uF 100V 10%        | C14   |
| 1   | 027277 | CAP MPF .082uF 100V 10%        | C28-29 C46-47 C49-50 C52-53   |
| 8   | 027280 | CAP MPF .15uF 63V 10%          | C157-158  |
| 2   | 024853 | CAP MPF .1uF 250V 10%          | C3 C7 C13 C17   |
| 4   | 024854 | CAP MPF .1uF 400V 10%          | C1 C21 C101 C122 C134-135   |
| 6   | 027278 | CAP MPF .1uF 63V 10%           | C137  |
| 1   | 027281 | CAP MPF .22uF 63V 10%          |   |

# PARTS LIST

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART # | DESCRIPTION                    | REFERENCE DESIGNATION                            |
|-----|--------|--------------------------------|--|
| 2   | 027283 | CAP MPF .33uF 63V 10%          | C43-44   |
| 1   | 027286 | CAP MPF .47uF 63V 10%          | C136   |
| 6   | 030937 | CAP PFF RDL .0027uF 50V 5%     | C65-66 C68-69 C71-72                             |
| 2   | 054357 | CAP PPF .001uF 2kV 10%         | C164-165   |
| 1   | 051679 | CONTROL 10K5A 10K5C DET        | R102   |
| 11  | 050514 | CONTROL SLIDER 30MM 50KW       | R71 R127-136                                     |
| 3   | 037600 | CONTROL SNAPIN 100K B          | R80 R100 R119                                    |
| 1   | 047540 | CONTROL SNAPIN 250K 15A        | R12  |
| 2   | 037597 | CONTROL SNAPIN 250K 30A        | R31 R42  |
| 1   | 041510 | CONTROL SNAPIN 25K B           | R107   |
| 2   | 051681 | CONTROL SNAPIN 25K DET 2B      | R58 R62  |
| 1   | 051677 | CONTROL SNAPIN RND 10KB 250KB  | R17  |
| 2   | 026133 | CONTROL TRIM 25K LIN           | R335 R361  |
| 14  | 064089 | DIODE 1N4003 LL                | CR75-78 CR80-87 CR101-102                        |
| 17  | 026730 | DIODE 1N4006 800V 1A           | CR62-64 CR72 CR88-95 CR97-100<br>CR103           |
| 53  | 006260 | DIODE 1N4448 SIGNAL LL         | CR1-25 CR27 CR29-39 CR44-50 CR52<br>CR54-60 CR96 |
| 8   | 048361 | DIODE 1N5407 800V 3A           | CR65-71 CR74                                     |
| 2   | 029690 | DIODE HV 3KV 200mA             | CR73 CR79  |
| 32  | 025802 | FSTN TAB MALE .250x.032 PCB MT | CP1-12 CP14-15 CP17-28 CP32-34<br>CP36-38        |
| 2   | 026000 | FSTN TAB MALE PCB MT .187X.032 | CP13 CP16  |
| 4   | 031041 | FSTN TAB ML RTANG PCB .25x.032 | CP29-31 CP35                                     |
| 6   | 051094 | FUSE CLIP PCB 5MM (EXPT)       | XF1 XF2 XF3                                      |
| 2   | 013112 | FUSE TD 20mmx5mm 250v 1A       | F1-2   |
| 1   | 013109 | FUSE TD 20mmx5mm 250v 250mA    | F3   |
| 3   | 033379 | CABLE RIBBON 3 CKT 10"         | P9A P11A P12A                                    |
| 3   | 049334 | CABLE RIBBON 3 CKT 20"         | P6A P7A P10A                                     |
| 6   | 027410 | HDR .1 CTR 3 CKT SQ PIN        | P6B P7B P9B P10B P11B P12B                       |
| 1   | 051655 | CABLE 6 CKT 14"                | P5A  |
| 2   | 053856 | CABLE RIBBON 6 CKT 8"          | P3A P8A  |
| 3   | 027413 | HDR .1 CTR 6 CKT SQ PIN        | P3B P5B P8B                                      |
| 1   | 048914 | CABLE RIBBON 8 CKT 7"          | P4A  |
| 1   | 027416 | HDR .1 CTR 8 CKT SQ PIN        | P4B  |

# PARTS LIST

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART #    | DESCRIPTION                     | REFERENCE DESIGNATION   |
|-----|-----------|---------------------------------|---|
| 2   | 041808    | HEADER 8 CKTx.1" LO             | P1B P2B   |
| 2   | 041825    | HEADER 8 PIN VERT.              | P1A P2A   |
| 1   | 051680    | IC AUDIO PROCESSOR SSM2120      | U18   |
| 18  | 051198    | IC DUAL OP AMP BA4560N SIP      | U1 U5-8 U11-16 U19-23 U26-27                                      |
| 6   | 016795    | IC DUAL OP AMP TL072            | U2-4 U9-10 U17  |
| 1   | 051856    | IC QUAD 2-IN NAND GATE 4011     | U25   |
| 1   | 013562    | IC REGULATOR +15V MC7815CT      | U28   |
| 1   | 013564    | IC REGULATOR -15V MC7915CT      | U29   |
| 1   | 041261    | IC VOLT REF LM4040DIZ-10.0      | U24   |
| 2   | 051006    | JACK 1/4 PCB DUAL TIP MONO      | J1 J5   |
| 1   | 051007    | JACK 1/4 PCB STEREO W/ SWITCH   | J7  |
| 1   | 051658    | JACK MONO R/A                   | J8  |
| 3   | 053450    | JACK STEREO R/A                 | J2-4  |
| 3   | 026481    | JACK TIP                        | J9-11   |
| 1   | 049892    | JACK XLR MALE                   | J6  |
| 3   | 031871    | LED BI-COLOR 5mmx5mm            | LD6-8   |
| 5   | 028039    | LED RED 5x5mm SLB-55VR3         | LD2-5 LD9   |
| 1   | 033177    | LED RED/GREEN 5x5mm BI-COLOR    | LD1   |
| 1   | 051411    | SPACER LED .4x.1 TURQUOISE      | AT LD1  |
| 5   | 990470144 | SPACER LED .7x.125 BLUE A6192-3 | AT LD2-5 LD9  |
| 3   | 041527    | SPACER RND NYL .680x.250x.147   | AT LD6-8  |
| 4   | 025116    | RES CF 1/2W 100K 5% LL          | R10 R16 R27 R39   |
| 5   | 026368    | RES CF 1/2W 100ohm 5% LL        | R317-318 R354-356   |
| 1   | 048903    | RES CF 1/2W 18k 5% LL           | R331  |
| 4   | 026493    | RES CF 1/2W 2.7K 5% LL          | R234 R237 R241 R287   |
| 1   | 047436    | RES CF 1/2W 270ohm 5% LL        | R357  |
| 1   | 027869    | RES CF 1/2W 470ohm 5% LL        | R221  |
| 4   | 025941    | RES CF 1/2W 560ohm 5% LL        | R258 R337 R342 R347   |
| 4   | 024967    | RES CF 1/4W 5% 1.2k LL          | R6 R14 R79 R150   |
| 2   | 024969    | RES CF 1/4W 5% 1.5k LL          | R38 R50   |
| 2   | 025073    | RES CF 1/4W 5% 1.5M LL          | R124 R189   |
| 15  | 024997    | RES CF 1/4W 5% 100k LL          | R4 R29 R46 R75 R113 R181 R204 R226<br>R271 R273-275 R289-290 R307 |

# PARTS LIST

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART # | DESCRIPTION              | REFERENCE DESIGNATION   |
|-----|--------|--------------------------|---|
| 68  | 024981 | RES CF 1/4W 5% 10k LL    | R1 R5 R8 R15 R18 R20-21 R25 R28<br>R33 R36 R43-44 R48 R51 R56 R61<br>R63-64<br>R66-69 R76 R81-83 R87 R97 R99 R106<br>R108-109 R112 R114-116 R121 R125<br>R177 R184 R190 R193 R197 R200-201<br>R208-209 R212 R217 R228 R231-232<br>R243-245 R248 R253-254 R261 R266<br>R276<br>R285 R291 R298 R305 R308 R351<br>R178-180 R203 R296 |
| 5   | 024937 | RES CF 1/4W 5% 10ohm LL  | R13   |
| 1   | 024998 | RES CF 1/4W 5% 120k LL   | R53-54  |
| 2   | 029539 | RES CF 1/4W 5% 13k LL    | R35 R91 R292 R319-320   |
| 5   | 024999 | RES CF 1/4W 5% 150k LL   | R157 R163 R169 R175   |
| 4   | 024985 | RES CF 1/4W 5% 15k LL    | R84 R86 R145 R151   |
| 4   | 024986 | RES CF 1/4W 5% 18k LL    | R90 R94 R162 R174 R294-295 R297<br>R332   |
| 8   | 024965 | RES CF 1/4W 5% 1k LL     | R2 R19 R26 R32 R37 R45 R49 R92-93<br>R110 R210 R215 R219 R224 R236<br>R246-247 R251-252 R264 R279 R282<br>R286  |
| 23  | 025069 | RES CF 1/4W 5% 1M LL     | R170 R218<br>R225 R267<br>R98 R120 R146<br>R11 R207 R293<br>R95-96 R122 R182-183 R195 R205<br>R23 R40 R72-73 R78 R103 R214 R222<br>R229 R233 R238 R240 R242 R249<br>R259<br>R265 R268-269 R277 R284<br>R239 R255-256 R304   |
| 2   | 024971 | RES CF 1/4W 5% 2.2k LL   | R158  |
| 2   | 025075 | RES CF 1/4W 5% 2.2M LL   | R34 R140 R144 R152 R160 R164 R172<br>R57 R59<br>R138 R154<br>R153 R159 R165 R171 R270<br>R24 R230   |
| 3   | 029455 | RES CF 1/4W 5% 2.4k LL   | R60 R117 R137 R141 R147 R185 R191-<br>192 R198-199 R211 R227 R250 R278<br>R283  |
| 3   | 025059 | RES CF 1/4W 5% 220k LL   | R333 R353   |
| 7   | 024956 | RES CF 1/4W 5% 220ohm LL | R88 R118 R186 R188<br>R148 R156 R168 R176<br>R166   |
| 20  | 024987 | RES CF 1/4W 5% 22k LL    | R47 R52 R142 R216 R235 R339 R344<br>R349<br>R213<br>R223  |
| 4   | 024988 | RES CF 1/4W 5% 27k LL    |   |
| 1   | 029005 | RES CF 1/4W 5% 2k LL     |   |
| 7   | 024973 | RES CF 1/4W 5% 3.3k LL   |   |
| 2   | 026504 | RES CF 1/4W 5% 3.6k LL   |   |
| 2   | 024975 | RES CF 1/4W 5% 3.9k LL   |   |
| 5   | 028865 | RES CF 1/4W 5% 30k LL    |   |
| 2   | 025061 | RES CF 1/4W 5% 330k LL   |   |
| 15  | 024989 | RES CF 1/4W 5% 33k LL    |   |
| 2   | 025063 | RES CF 1/4W 5% 390k LL   |   |
| 4   | 024991 | RES CF 1/4W 5% 39k LL    |   |
| 4   | 029610 | RES CF 1/4W 5% 3k LL     |   |
| 1   | 029472 | RES CF 1/4W 5% 4.3k LL   |   |
| 8   | 024977 | RES CF 1/4W 5% 4.7k LL   |   |
| 1   | 025828 | RES CF 1/4W 5% 430k LL   |   |
| 1   | 028956 | RES CF 1/4W 5% 43k LL    |   |

# PARTS LIST

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART # | DESCRIPTION                    | REFERENCE DESIGNATION                                    |
|-----|--------|--------------------------------|--|
| 4   | 025065 | RES CF 1/4W 5% 470k LL         | R41 R77 R206 R358  |
| 7   | 024961 | RES CF 1/4W 5% 470ohm LL       | R260 R272 R280-281 R338 R343 R348                        |
| 9   | 024993 | RES CF 1/4W 5% 47k LL          | R104-105 R202 R373-378                                   |
| 10  | 024947 | RES CF 1/4W 5% 47ohm LL        | R7 R9 R65 R89 R126 R187 R257 R262-<br>263<br>R306        |
| 5   | 024978 | RES CF 1/4W 5% 5.6k LL         | R3 R30 R70 R74 R85                                       |
| 2   | 024994 | RES CF 1/4W 5% 56k LL          | R155 R167  |
| 1   | 028948 | RES CF 1/4W 5% 6.2k LL         | R55  |
| 2   | 024979 | RES CF 1/4W 5% 6.8k LL         | R194 R196  |
| 7   | 024995 | RES CF 1/4W 5% 68k LL          | R101 R111 R123 R139 R143 R334<br>R369                    |
| 2   | 025942 | RES CF 1/4W 5% 7.5k LL         | R161 R173  |
| 1   | 024980 | RES CF 1/4W 5% 8.2k LL         | R149   |
| 8   | 025068 | RES CF 1/4W 5% 820k LL         | R288 R299-303 R321-322                                   |
| 2   | 027353 | RES FILM 1W 100K LL 5% LL      | R326-327   |
| 1   | 027349 | RES FILM 1W 10K 5% LL          | R359   |
| 2   | 041706 | RES FILM 1W 470k 5% LL         | R313-314   |
| 6   | 027354 | RES FILM 1W 5% 220k LL         | R336 R340-341 R345-346 R350                              |
| 3   | 036470 | RES MOX FP 1W 5% 10k LL        | R328 R379-380  |
| 2   | 054213 | RES MOX 2W 100k 5% LL          | R311-312   |
| 1   | 053945 | RES MOX 2W 150k 5% LL          | R329   |
| 2   | 031629 | RES MOX 2W 1ohm 5% LL          | R365 R368  |
| 1   | 028021 | RES MOX 2W 470ohm 5% LL        | R220   |
| 12  | 027628 | RES MOX 2W 47ohm 5% LL         | R309-310 R324-325 R362-364 R366-<br>367<br>R371-372 R381 |
| 2   | 053947 | RES MOX BT 18Kohm 5W 5%        | R316 R323  |
| 1   | 053948 | RES MOX BT 39Kohms 5W 5%       | R360   |
| 2   | 031703 | RES WW BT 10W 10% .22 ohm      | R330 R352  |
| 1   | 026483 | RES WW BT 10W 10% 2.7k         | R370   |
| 1   | 053950 | RES WW BT 18k 10W 10%          | R315   |
| 5   | 050817 | SWITCH PB PC VERT MNT DPDT     | S2-4 S6 S9   |
| 1   | 049557 | SWITCH PC MNT 2P3T             | S10  |
| 4   | 028091 | SWITCH PUSH SLFLK SHORT STROKE | S1 S5 S7-8   |
| 9   | 048451 | BUTTON PUSH OFF WHITE          | AT S1-9  |
| 1   | 026411 | THERMISTOR 2.5 OHM 8A C30-19   | TH1  |
| 6   | 029343 | TUBE SOCKET 8 PIN PCB MOUNT    | XV5-10   |

# PARTS LIST

## PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

| QTY | PART # | DESCRIPTION                     | REFERENCE DESIGNATION          |
|-----|--------|---------------------------------|--------------------------------|
| 4   | 051442 | SOCKET TUBE 9 PIN PCB MOUNT     | XV1-4                          |
| 1   | 027325 | XFMR LINE OUTPUT                | T1                             |
| 10  | 041465 | XSTR N-CH JFET J113 TO-92       | Q1-9 Q15                       |
| 5   | 016739 | XSTR NPN 2N4401 TO-92           | Q11-12 Q19-21                  |
| 6   | 016742 | XSTR PNP 2N4403 TO-92           | Q10 Q13-14 Q16-18              |
| 3   | 031729 | DIODE ZEN 1N5231B.5W 5.1V 5%    | CR42 CR51 CR53                 |
| 1   | 029898 | DIODE ZEN 1N5236B 7.5V 5% LL    | CR43                           |
| 3   | 031635 | DIODE ZEN 1N5240B 10V 5%        | CR40-41 CR61                   |
| 2   | 031019 | DIODE ZEN 1N5245B.5W 15V 5% LL  | CR26 CR28                      |
| 1   | 054385 | WIRE SET PCB SUNN 300T          |                                |
| 2   | 025796 | HEATSINK TO-220                 | AT U28-29                      |
| 2   | 017746 | WSHR SHLDR NYL 1/8x1/4          | AT U28-29                      |
| 2   | 017974 | INSULATOR MICA TO-220           | AT U28-29                      |
| 2   | 027638 | SCRW TF 4-40x3/8 HWHS ZI .1" HD | AT U28-29                      |
| 12  | 014171 | SCRW M 4-40x3/8 PHP BLX         | AT XV5-10 TOP                  |
| 16  | 039420 | SCRW M 4-40x3/8 PHP SS SEMS     | AT XV5-10 BOTTOM, GEQ REAR PCB |
| 12  | 040533 | STANDOFF 4-40x.937              | AT XV5-10                      |
| 4   | 016747 | STNDOFF RND AL 4-40x3/4x1/4     | AT GEQ REAR PCB                |

# PARTS LIST

## CHASSIS ASSEMBLY

| QTY | PART #    | DESCRIPTION                    | REFERENCE DESIGNATION            |
|-----|-----------|--------------------------------|----------------------------------|
| 1   | 053941    | CHASSIS SUNN 300T              |                                  |
| 1   | 053639    | PCB ASSY SUNN 300T             |                                  |
| 1   | 050853    | XFMR PWR 300W 120V             | DOMESTIC UNITS                   |
| 1   | 053942    | XFMR PWR 300W 100/230/240V     | EXPORT UNITS                     |
| 1   | 050854    | TRANSFORMER, OUTPUT            |                                  |
| 1   | 047213    | CONNECTOR AC LINE MALE IEC     |                                  |
| 3   | 036703    | FUSE HOLDER 5MM FINGER GRIP    | TUBES, EXPT. PWR (4 IN 230/240V) |
| 1   | 036702    | FUSE HOLDER 3AG FINGER GRIP    | 100,120V POWER                   |
| 4   | 053893    | TUBE SHIELD SUNN MODEL T       | @ PRE TUBES                      |
| 3   | 013004    | FUSE TD 20mmx5mm 250V 100mA    | SCREENS                          |
| 1   | 028330    | FUSE QA 1-1/4x1/4 250v 10A     | DOMESTIC POWER                   |
| 1   | 020798    | FUSE QA 20mmx5mm 250v 5A       | EXPORT POWER                     |
| 8   | 025819    | NUT KEPS 10-32 ZINC            | 4/XFMR                           |
| 4   | 053479    | NUT HEX 7/16 20X1/8 NI         | @ REAN JACKS                     |
| 5   | 016352    | NUT HEX 3/8-32x3/32 TK NI      | 1/4" JACKS                       |
| 12  | 039370    | RETAINER ANCHOR TUBE SPRING    | 6550's                           |
| 12  | 053956    | SPRING, EXTENSION 2.49x.15"    | 6550's                           |
| 6   | 039364    | WASHER EPDM TUBE CLAMP DAMPNER | 6550's                           |
| 6   | 039369    | RETAINER TOP TUBE SPRING       | 6550's                           |
| 1   | 053892    | COVER BOX BIAS CONTROLS        | MODEL T RELEASE                  |
| 11  | 024604    | KNOB BLACK W/WHITE STAMP 1-10  | @ CONTROLS                       |
| 2   | 051155    | SCRW SMB #4x3/8 PHP BLX        | AT NEUTRIK XLR                   |
| 2   | 021568    | SCRW M 6-32x3/16 PHP NI        | AT IMP SEL                       |
| 23  | 031184    | SCRW M6-32x1/4 PHPS BLX ITLW   | PCA/CHASSIS                      |
| 4   | 014171    | SCRW M 4-40x3/8 PHP BLX        | EQ PCB TO CHASSIS                |
| 1   | 038900    | SCRW TF 6-32X1/4 PHP ZI        | AC GND                           |
| 4   | 032806    | SCRW TF 6-32x1/4 PHP BLX       | AT IEC, BIAS COVER               |
| 4   | 016747    | STANDOFF 4-40X3/4" RND AL      | EQ PCB                           |
| 4   | 054386    | STANDOFF M/F 4-40x9/16 HEX AL  | EQ PCB                           |
| 1   | 036570    | SWITCH TOGGLE DPST W/NUTS      | POWER                            |
| 1   | 051855    | SWITCH ROCKER DPST W/ BEZEL    | STANDBY                          |
| 1   | 022293    | WSHR FLAT .473x.750 NI         | @ PWR SW                         |
| 4   | 053480    | WASHER FLAT .442 X.692 NI      | @ REAN JACKS                     |
| 3   | 990430010 | WASHER LCK INTL 3/8x.681x.032  | IN & SPKR JACKS                  |

# PARTS LIST

## CHASSIS ASSEMBLY (CONT)

| QTY | PART # | DESCRIPTION                    | REFERENCE DESIGNATION |
|-----|--------|--------------------------------|-----------------------|
| 5   | 031153 | WSHR FLAT 3/8x.614 NI          | 1/4" JACKS            |
| 6   | 048489 | TUBE 6550WA OUTPUT             |                       |
| 3   | 013341 | TUBE 7025/12AX7WA RUSSIAN MADE |                       |
| 1   | 023531 | TUBE 12AT7 CHINESE             |                       |

## CAB ASSEMBLY

| QTY  | PART #     | DESCRIPTION                | REFERENCE DESIGNATION |
|------|------------|----------------------------|-----------------------|
| 8    | 0029071000 | CORNER NOTCHED NICKLE (FD) |                       |
| 4    | 0051049000 | FOOT RUBBER 1.5 DIA        |                       |
| 2    | 0032524000 | INSERT HANDLE              |                       |
| 4    | 0019279000 | HANDLE CAP 2 HOLE NICKEL   |                       |
| 2    | 0027846000 | HANDLE 9.25" NO LOGO       |                       |
| 16   | 0026571000 | SCRW SMAB 8X5/8 THP NI     | @ CORNERS             |
| 4    | 0026625000 | SCRW WOOD 8x1 FH           |                       |
| 8    | 0031344000 | SCREW SMA 10x3/4 OHP IN    |                       |
| 0.03 | 0027648000 | TAPE ALUM 6"x60YDS         |                       |
| 8    |            |                            |                       |
| 1.56 | 0051343000 | VINYL TOLEX 4227A          |                       |

## END ITEM

| QTY | PART #     | DESCRIPTION                      | REFERENCE DESIGNATION           |
|-----|------------|----------------------------------|---------------------------------|
| 1   | 0053932000 | CHASSIS ASSY SUNN 300T 120V      |                                 |
| 1   | 0053933000 | CHASSIS ASSY SUNN 300T 240V AUST |                                 |
| 1   | 0053934000 | CHASSIS ASSY SUNN 300T 230V UK   |                                 |
| 1   | 0053935000 | CHASSIS ASSY SUNN 300T 230V      |                                 |
| 1   | 0053936000 | CHASSIS ASSY SUNN 300T 100V      |                                 |
| 1   | 0051392000 | CAB ASSY SUNN 300T               |                                 |
| 1   | 0047248000 | CORD PWR W/IEC CONN DOM          | DOMESTIC - 120V                 |
| 1   | 0047250000 | CORD PWR W/IEC CONN 240V AUST    | 240V AUST                       |
| 1   | 0047249000 | CORD PWR W/IEC CONN 230V UK      | 230V UK                         |
| 1   | 0047251000 | CORD PWR W/IEC CONN 230V         | 230V                            |
| 1   | 0053997000 | CORD PWR W/IEC CONN 100V         | 100V                            |
| 1   | 0053895000 | FOOTSWITCH 3 BUTTON SUNN BASS    | 1200S RELEASE                   |
| 2   | 0051204000 | FOAM TAPE 1/4" 1/16 3M4516       | @ TOP OF FRONT GRILLE (PER FT.) |

# PARTS LIST

## END ITEM (CONT)

| QTY | PART #     | DESCRIPTION                    | REFERENCE DESIGNATION |
|-----|------------|--------------------------------|-----------------------|
| 1   | 0053564000 | GRILLE FRONT SUNN 300T         |                       |
| 1   | 0053598000 | GRILLE REAR SUNN 300T          |                       |
| 8   | 0069393000 | NUT 6-32 HEX EXT LOCK          | @ NAMEPLATES          |
| 8   | 0036112000 | SCRW SMAB 6x1-1/4 OHP BLX w/WS | GRILLE MOUNTING       |
| 8   | 0036199000 | SCRW M 8-32x1-3/16 OHP BLX CP  | CAB/CHASSIS           |
| 8   | 0017433000 | SCRW M 6-32x3/8 PHP BLX        | @ NAMEPLATES          |
| 8   | 0029527000 | WSHR FNSH 8-5/8 FLNGD BLX WX   | @ CAB/CHASSIS SCREWS  |
| 1   | 0051380000 | PLATE SUNN LOGO                |                       |
| 1   | 0054382000 | PLATE SUNN 300T                |                       |

# PARTS LIST

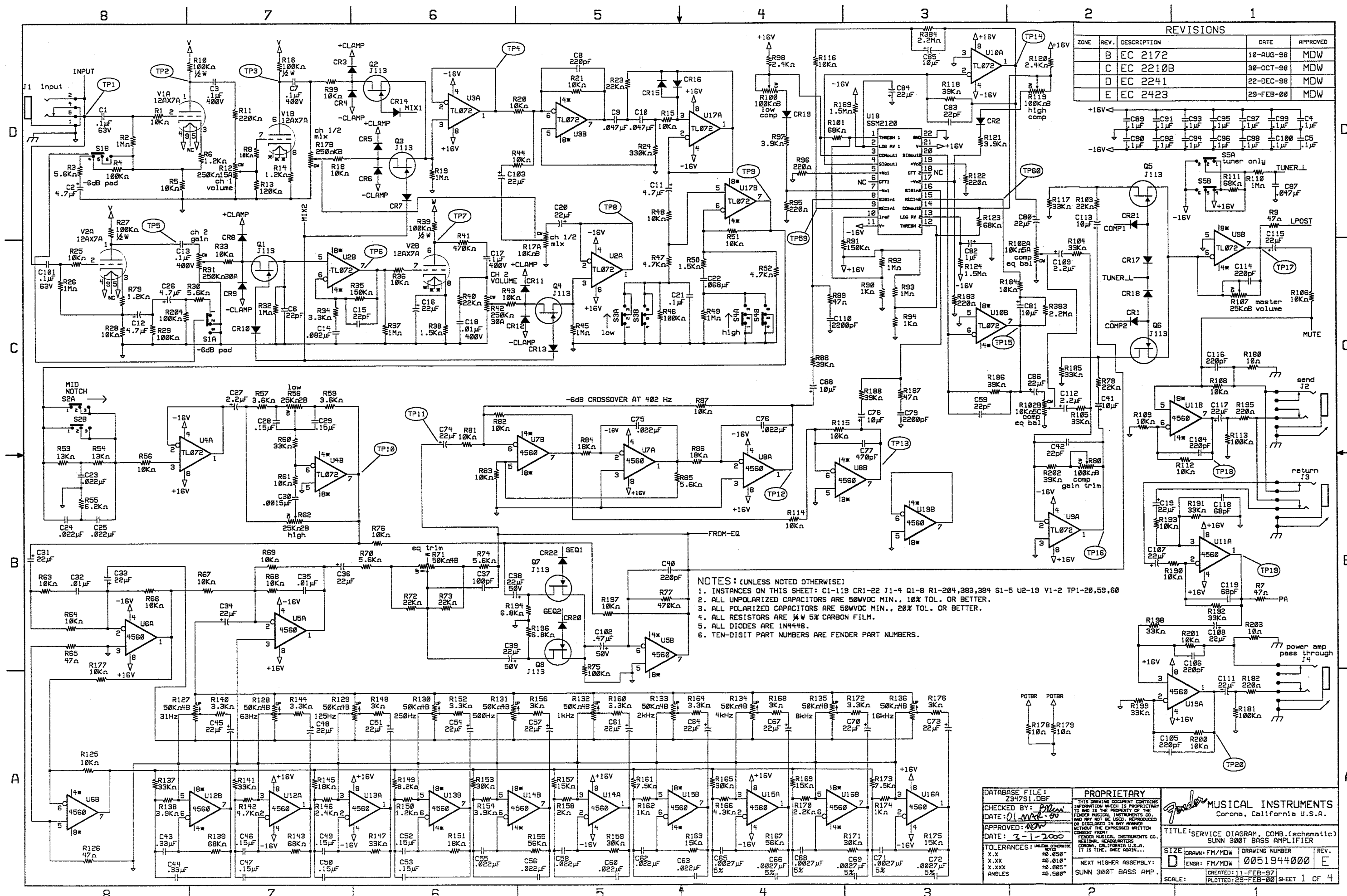
## FOOTSWITCH END ITEM

| QTY | PART # | DESCRIPTION                   | REFERENCE DESIGNATION |
|-----|--------|-------------------------------|-----------------------|
| 1   | 053897 | PCB ASSY FTSW 3 BTN SUNN BASS |                       |
| 1   | 053896 | PLATE FTSW 3 BTN SUNN BASS    |                       |
| 1   | 028895 | CABLE ASSY FTSW RT ANG 12'    |                       |
| 1   | 028109 | HSG END CUP LEFT FTSW         |                       |
| 1   | 028143 | HSG END CUP RIGHT FTSW        |                       |
| 1   | 028141 | HSG FTSW 3 BUTTON             |                       |
| 1   | 031647 | NUT HEX 12mmx1mm NI           |                       |
| 8   | 028684 | SCRW SMB 6x3/8 PH PHS BLX     |                       |
| 3   | 031899 | WSHR NYL .485x.775x.150 TK    |                       |

## FOOTSWITCH PCB ASSEMBLY

| QTY | PART # | DESCRIPTION                    | REFERENCE DESIGNATION |
|-----|--------|--------------------------------|-----------------------|
| 1   | 053898 | PCB FAB FTSW 3 BTN SUNN BASS   |                       |
| 2   | 000626 | DIODE 1N4448 SIGNAL LL         |                       |
| 1   | 031017 | DIODE ZEN 1N5223B 2.7V 5%      |                       |
| 2   | 027327 | DIODE ZEN 1N5234B 6.2V         |                       |
| 3   | 028039 | LED RED 5x5MM SLB-55VR3        |                       |
| 1   | 037036 | JACK PHONE PCB MONO CA PREMIUM |                       |
| 3   | 041527 | SPACER RND NYL .680x.250x.147  |                       |
| 3   | 028714 | SWITCH PUSH SPDT               |                       |



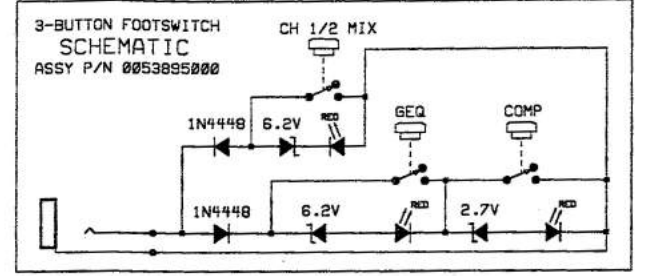
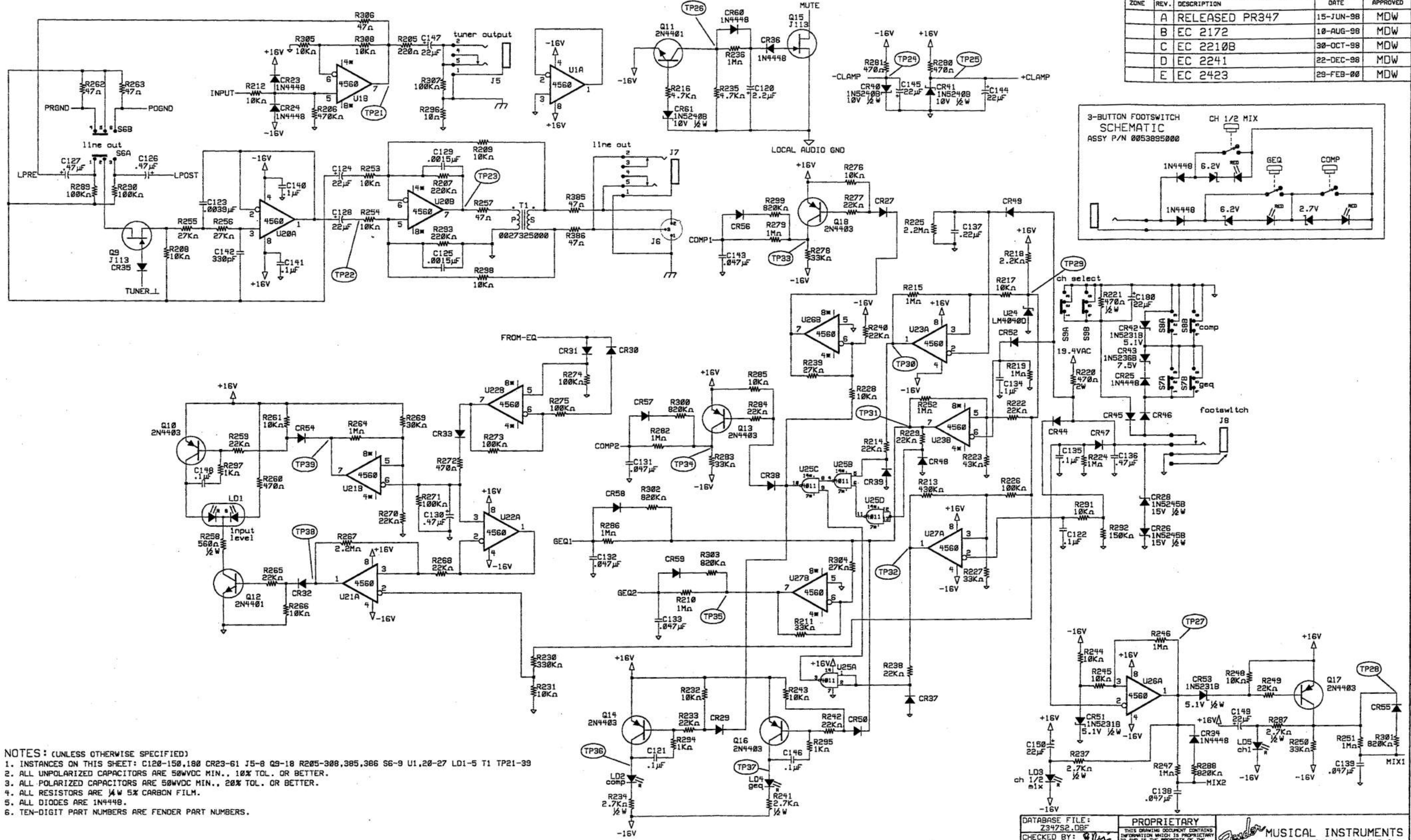


| REVISIONS |      |             |           |          |
|-----------|------|-------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION | DATE      | APPROVED |
|           | B    | EC 2172     | 10-AUG-98 | MDW      |
|           | C    | EC 2210B    | 30-OCT-98 | MDW      |
|           | D    | EC 2241     | 22-DEC-98 | MDW      |
|           | E    | EC 2423     | 29-FEB-00 | MDW      |

- NOTES: (UNLESS NOTED OTHERWISE)
1. INSTANCES ON THIS SHEET: C1-119 CR1-22 J1-4 Q1-8 R1-204,303,384 S1-5 U2-19 V1-2 TP1-20,59,60
  2. ALL UNPOLARIZED CAPACITORS ARE 50WVDC MIN., 10% TOL. OR BETTER.
  3. ALL POLARIZED CAPACITORS ARE 50WVDC MIN., 20% TOL. OR BETTER.
  4. ALL RESISTORS ARE 1/4W 5% CARBON FILM.
  5. ALL DIODES ARE 1N4448.
  6. TEN-DIGIT PART NUMBERS ARE FENDER PART NUMBERS.

|   |  |  |
|---|--|--|
| DATABASE FILE:<br>234751.DBF<br>CHECKED BY: <i>Allen</i><br>DATE: <i>01-MAR-00</i><br>APPROVED: <i>MDW</i><br>DATE: <i>3-1-2000</i> | <b>PROPRIETARY</b><br>THIS DRAWING DOCUMENT CONTAINS<br>INFORMATION WHICH IS PROPRIETARY<br>TO AND IS THE PROPERTY OF THE<br>FENDER MUSICAL INSTRUMENTS CO.<br>AND MAY NOT BE USED, REPRODUCED<br>OR DISCLOSED IN ANY MANNER<br>WITHOUT THE EXPRESSED WRITTEN<br>CONSENT FROM<br>FENDER MUSICAL INSTRUMENTS CO.<br>REGIONAL HEADQUARTERS<br>CORONA, CALIFORNIA U.S.A.<br>IT IS TIME, ONCE AGAIN... | <b>Fender</b> MUSICAL INSTRUMENTS<br>Corona, California U.S.A.<br>TITLE: SERVICE DIAGRAM, COMB.(schematic)<br>SUNN 300T BASS AMPLIFIER<br>SIZE: DRAWN: FM/MDW DRAWING NUMBER: 0051944000<br>ENGR: FM/MDW<br>NEXT HIGHER ASSEMBLY:<br>SUNN 300T BASS AMP.<br>SCALE: |
|---|--|--|

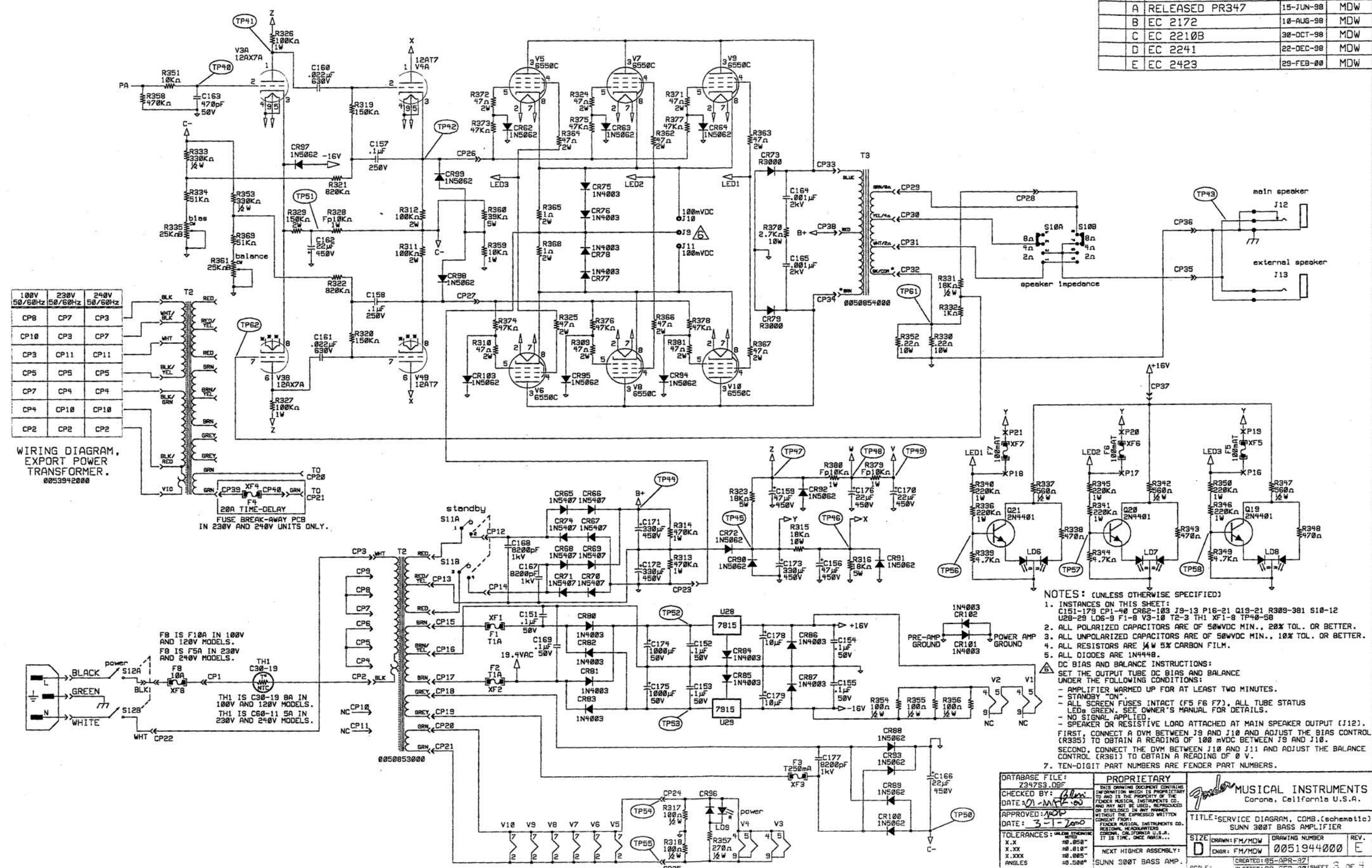
| REVISIONS |      |                |           |          |
|-----------|------|----------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION    | DATE      | APPROVED |
|           | A    | RELEASED PR347 | 15-JUN-98 | MDW      |
|           | B    | EC 2172        | 18-AUG-98 | MDW      |
|           | C    | EC 2210B       | 30-OCT-98 | MDW      |
|           | D    | EC 2241        | 22-DEC-98 | MDW      |
|           | E    | EC 2423        | 29-FEB-00 | MDW      |



- NOTES: (UNLESS OTHERWISE SPECIFIED)
1. INSTANCES ON THIS SHEET: C120-150, 180 CR23-61 J5-8 Q9-18 R205-308, 385, 386 S6-9 U1, 20-27 LD1-5 T1 TP21-39
  2. ALL UNPOLARIZED CAPACITORS ARE 50WVDC MIN., 10% TOL. OR BETTER.
  3. ALL POLARIZED CAPACITORS ARE 50WVDC MIN., 20% TOL. OR BETTER.
  4. ALL RESISTORS ARE 1/4 W 5% CARBON FILM.
  5. ALL DIODES ARE 1N4448.
  6. TEN-DIGIT PART NUMBERS ARE FENDER PART NUMBERS.

|   |   |   |
|---|---|---|
| DATABASE FILE:<br>Z347S2.DBF<br>CHECKED BY: <i>[Signature]</i><br>DATE: 01-MAR-00<br>APPROVED: <i>[Signature]</i><br>DATE: 3-1-2000<br>TOLERANCES: UNLESS OTHERWISE SPECIFIED<br>X.X .050"<br>X.XX .010"<br>X.XXX .005"<br>ANGLES .500" | <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., CORONA, CALIFORNIA U.S.A. IT IS TIME, CHECK AGAIN...<br>NEXT HIGHER ASSEMBLY:<br>SUNN 300T BASS AMP. | <b>Fender</b> MUSICAL INSTRUMENTS<br>Corona, California U.S.A.<br>TITLE: SERVICE DIAGRAM, COMB. (schematic)<br>SUNN 300T BASS AMPLIFIER<br>SIZE: DRAWN: FM/MDW<br>D ENGR: FM/MDW<br>DRAWING NUMBER: 0051944000<br>REV. E<br>CREATED: 05-APR-97<br>PLOTTED: 29-FEB-00 SHEET 2 OF 4 |
|---|---|---|

| REVISIONS |      |                |           |          |
|-----------|------|----------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION    | DATE      | APPROVED |
|           | A    | RELEASED PR347 | 15-JUN-88 | MDW      |
|           | B    | EC 2172        | 18-AUG-88 | MDW      |
|           | C    | EC 2210B       | 30-OCT-88 | MDW      |
|           | D    | EC 2241        | 22-DEC-88 | MDW      |
|           | E    | EC 2423        | 29-FEB-89 | MDW      |



| 100V<br>50/60Hz | 230V<br>50/60Hz | 240V<br>50/60Hz |
|-----------------|-----------------|-----------------|
| CP8             | CP7             | CP3             |
| CP10            | CP3             | CP7             |
| CP3             | CP11            | CP11            |
| CP5             | CP5             | CP5             |
| CP7             | CP4             | CP4             |
| CP4             | CP10            | CP10            |
| CP2             | CP2             | CP2             |

WIRING DIAGRAM,  
EXPORT POWER  
TRANSFORMER.  
0053942000

FUSE BREAK-AWAY PCB  
IN 230V AND 240V UNITS ONLY.

FB IS F10A IN 100V  
AND 120V MODELS.  
FB IS F5A IN 230V  
AND 240V MODELS.

TH1 IS C30-19 8A IN  
100V AND 120V MODELS.  
TH1 IS C60-11 5A IN  
230V AND 240V MODELS.

- NOTES: (UNLESS OTHERWISE SPECIFIED)
- INSTANCES ON THIS SHEET:  
C151-179 CP1-40 CR2-103 J9-13 P16-21 Q19-21 R309-381 S10-12  
U20-29 LD6-9 F1-8 V3-10 T2-3 TH1 XF1-8 TP40-58
  - ALL POLARIZED CAPACITORS ARE OF 50WVDC MIN., 20% TOL. OR BETTER.
  - ALL UNPOLARIZED CAPACITORS ARE OF 50WVDC MIN., 10% TOL. OR BETTER.
  - ALL RESISTORS ARE 1/4 W 5% CARBON FILM.
  - ALL DIODES ARE 1N4448.
- DC BIAS AND BALANCE INSTRUCTIONS:  
SET THE OUTPUT TUBE DC BIAS AND BALANCE  
UNDER THE FOLLOWING CONDITIONS:  
- AMPLIFIER WARMED UP FOR AT LEAST TWO MINUTES.  
- STANDBY "ON".  
- ALL SCREEN FUSES INTACT (F5 F6 F7), ALL TUBE STATUS  
LEDs GREEN. SEE OWNER'S MANUAL FOR DETAILS.  
- NO SIGNAL APPLIED.  
- SPEAKER OR RESISTIVE LOAD ATTACHED AT MAIN SPEAKER OUTPUT (J12).  
FIRST, CONNECT A DVM BETWEEN J9 AND J10 AND ADJUST THE BIAS CONTROL  
(R335) TO OBTAIN A READING OF 100 mVDC BETWEEN J9 AND J10.  
SECOND, CONNECT THE DVM BETWEEN J10 AND J11 AND ADJUST THE BALANCE  
CONTROL (R361) TO OBTAIN A READING OF 0 V.
7. TEN-DIGIT PART NUMBERS ARE FENDER PART NUMBERS.

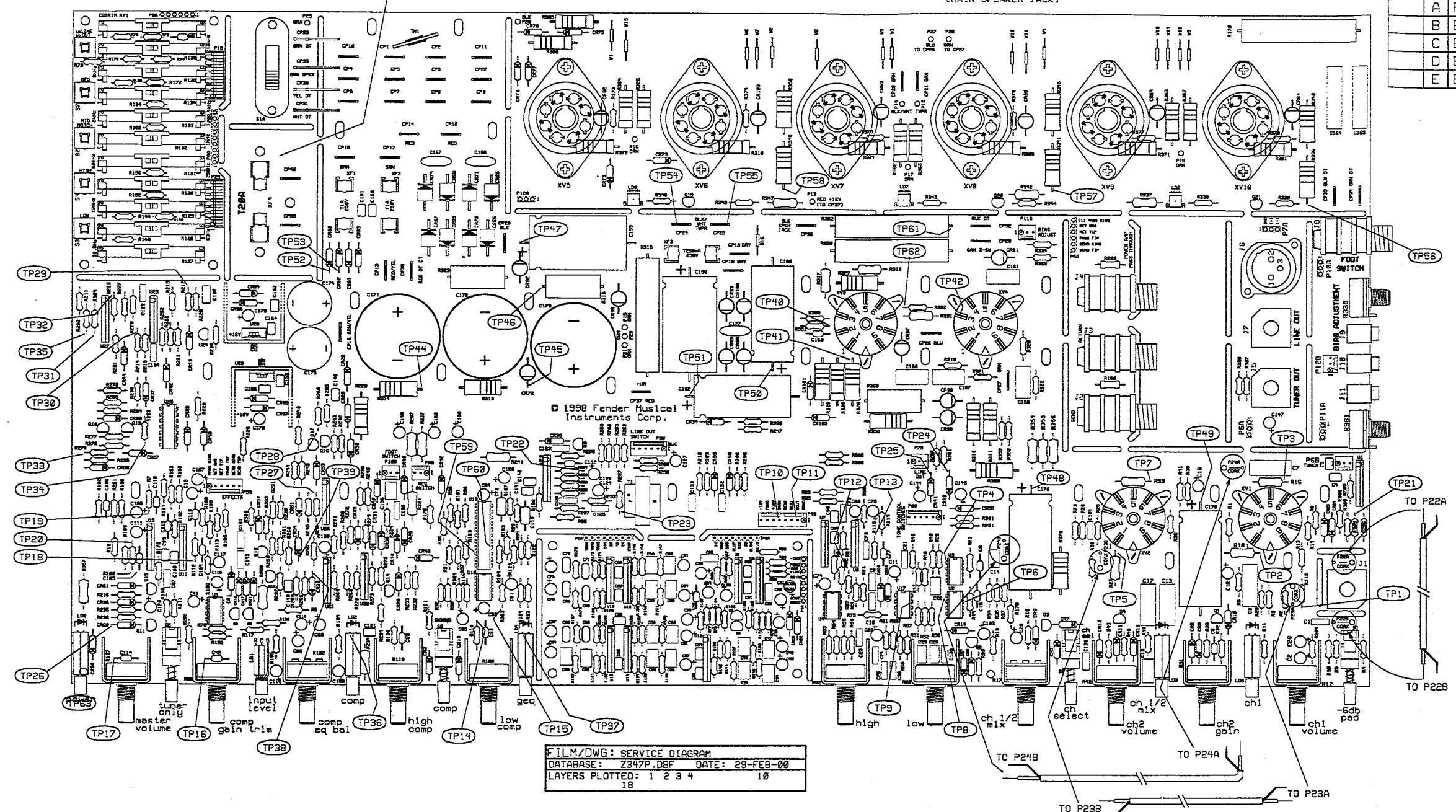
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| DATABASE FILE:<br>Z34783.00F<br>CHECKED BY:<br>DATE: 01-MAR-89<br>APPROVED: [Signature]<br>DATE: 3-1-89<br>TOLERANCES: UNLESS OTHERWISE<br>SPECIFIED:<br>X.X .050"<br>X.XX .010"<br>X.XXX .005"<br>ANGLES .500" | PROPRIETARY<br>THIS DRAWING DOCUMENT CONTAINS<br>INFORMATION WHICH IS PROPRIETARY<br>TO AND IS THE PROPERTY OF THE<br>FENDER MUSICAL INSTRUMENTS CO.<br>AND MAY NOT BE USED, REPRODUCED<br>OR DISCLOSED IN ANY MANNER<br>WITHOUT THE EXPRESSED WRITTEN<br>CONSENT FROM:<br>FENDER MUSICAL INSTRUMENTS CO.<br>REGIONAL HEADQUARTERS<br>CORONA, CALIFORNIA U.S.A.<br>IT IS THE POLICY OF FENDER...<br>NEXT HIGHER ASSEMBLY:<br>SUNN 300T BASS AMP. | <b>Fender</b> MUSICAL INSTRUMENTS<br>Corona, California U.S.A.<br>TITLE: SERVICE DIAGRAM, COMB. (schematic)<br>SUNN 300T BASS AMPLIFIER<br>SIZE: DRAWN: FM/MDW DRAWING NUMBER: 0051944000 REV. E<br>ENGR: FM/MDW<br>CREATED: 05-APR-87<br>PLOTTED: 29-FEB-89 SHEET 3 OF 4 |
|---|--|---|



| REVISIONS |      |                |           |          |
|-----------|------|----------------|-----------|----------|
| ZONE      | REV. | DESCRIPTION    | DATE      | APPROVED |
|           | A    | RELEASED PR347 | 15-JUN-98 | MDW      |
|           | B    | EC 2172        | 10-AUG-98 | MDW      |
|           | C    | EC 2210B       | 30-OCT-98 | MDW      |
|           | D    | EC 2241        | 22-DEC-98 | MDW      |
|           | E    | EC 2423        | 29-FEB-00 | MDW      |

XF4, CP39, CP40 INSTALLED IN 230V AND 240V UNITS ONLY.

TP43 AT J12 TIP (MAIN SPEAKER JACK)



FILM/DWG: SERVICE DIAGRAM  
 DATABASE: Z347P.DBF DATE: 29-FEB-00  
 LAYERS PLOTTED: 1 2 3 4 10 18

| TP# | VOLTS DC | VOLTS AC | ADDITIONAL CONDITIONS/NOTES                      |
|-----|----------|----------|--|
| 1   |          | 25.8 mV  |  |
| 2   | +133 V   | 326 mV   |  |
| 3   | +133 V   | 470 mV   |  |
| 4   |          | 468 mV   |  |
| 5   | +133 V   | 70 mV    |  |
| 6   |          | 528 mV   |  |
| 7   | +153 V   | 26.7 V   | WITH S9 (ch select) IN AND 5.9 mV AT TP1 (INPUT) |
| 8   |          | 679 mV   |  |
| 9   |          | 478 mV   |  |
| 10  |          | 462 mV   |  |
| 11  |          | 450 mV   |  |
| 12  |          | 225 mV   |  |
| 13  |          | 225 mV   |  |
| 14  |          | 218 mV   | 225 mV MAXIMUM, APPROXIMATE                      |
| 15  |          | 218 mV   | 225 mV MAXIMUM, APPROXIMATE                      |
| 16  |          | 847 mV   | 918 mV MAXIMUM, APPROXIMATE                      |
| 17  |          | 246 mV   |  |
| 18  |          | 246 mV   |  |
| 19  |          | 743 mV   |  |
| 20  |          | 246 mV   |  |
| 21  |          | 50.4 mV  |  |

| TP# | VOLTS DC | VOLTS AC | ADDITIONAL CONDITIONS/NOTES    |
|-----|----------|----------|--------------------------------|
| 22  |          | 49.5 mV  |                                |
| 23  |          | 48.4 mV  |                                |
| 24  | -10.2 V  |          |                                |
| 25  | +10.2 V  |          |                                |
| 26  | -15.4 V  |          | 5 SECONDS AFTER TURN-ON        |
| 27  | -13.9 V  |          |                                |
| 27  | +14.1 V  |          | WITH S9 (ch select) IN         |
| 28  | +15.5 V  |          |                                |
| 28  | -15.4 V  |          | WITH S9 (ch select) IN         |
| 29  | +10.0 V  |          |                                |
| 30  | +14.9 V  |          |                                |
| 30  | -14.1 V  |          | WITH S8 (comp) AND S7 (geq) IN |
| 31  | +14.8 V  |          |                                |
| 31  | -13.7 V  |          | WITH S7 (geq) IN               |
| 32  | +14.9 V  |          |                                |
| 32  | -14.1 V  |          | WITH S8 (comp) IN              |
| 33  | +15.5 V  |          |                                |
| 33  | -15.4 V  |          | WITH S8 (comp) IN              |
| 34  | -15.4 V  |          |                                |
| 34  | +15.5 V  |          | WITH S8 (comp) IN              |
| 35  | -14.1 V  |          |                                |

| TP# | VOLTS DC | VOLTS AC | ADDITIONAL CONDITIONS/NOTES                        |
|-----|----------|----------|--|
| 35  | +14.8 V  |          | WITH S7 (geq) IN                                   |
| 36  | -14.1 V  |          |  |
| 36  | +15.5 V  |          | WITH S8 (comp) IN                                  |
| 37  | -14.2 V  |          |  |
| 37  | +15.5 V  |          | WITH S7 (geq) IN                                   |
| 38  | -14.1 V  |          |  |
| 38  | +14.7 V  |          | WITH >10mV SIGNAL AT TP1, R12 (volume) AT FULL CW. |
| 39  | +15.1 V  |          |  |
| 39  | -13.8 V  |          | WITH >100mV SIGNAL AT TP1, R12 (volume) FULL CW.   |
| 40  |          | 781 mV   |  |
| 41  | +171 V   | 8.72 V   | SAME AT V38 PIN 6.                                 |
| 42  | -49.4 V  | 8.57 V   | SAME AT V48 PIN 8.                                 |
| 43  |          | 11.8 V   |  |
| 44  | +742 V   |          |  |
| 45  | +372 V   |          |  |
| 46  | +135 V   |          |  |
| 47  | +276 V   |          |  |
| 48  | +241 V   |          |  |
| 49  | +214 V   |          |  |

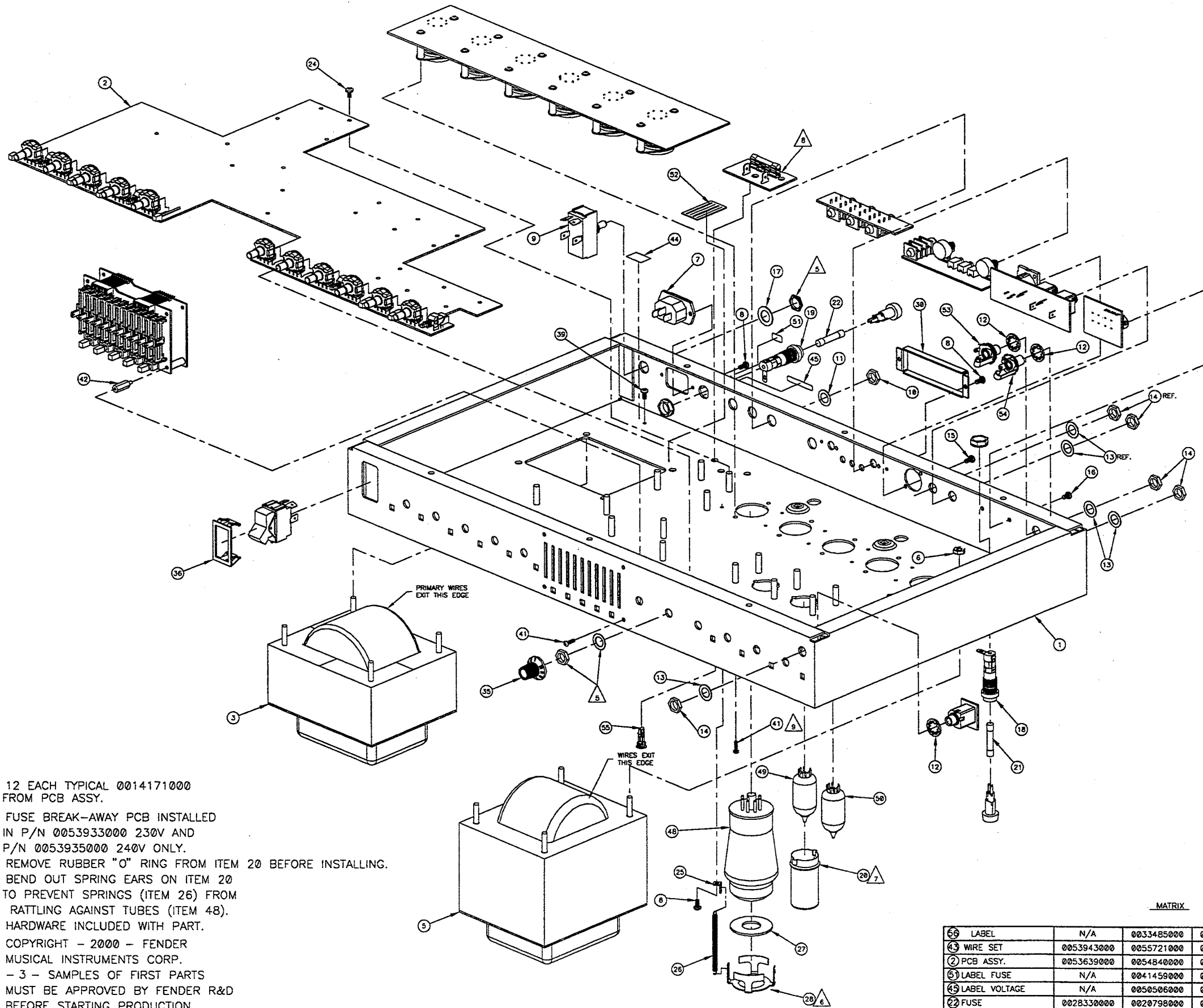
| TP# | VOLTS DC | VOLTS AC | ADDITIONAL CONDITIONS/NOTES           |
|-----|----------|----------|---------------------------------------|
| 50  | -327 V   |          |                                       |
| 51  | -306 V   |          |                                       |
| 52  | +24.6 V  |          |                                       |
| 53  | -24.6 V  |          |                                       |
| 54  |          | 3.29 V   |                                       |
| 55  |          | 3.29 V   |                                       |
| 56  | +2.83 V  |          | 0.0 V IN STANDBY OR WITH OPEN F6;     |
| 57  | +2.83 V  |          | 0.0 V IN STANDBY OR WITH OPEN F5;     |
| 58  | +2.83 V  |          | 0.0 V IN STANDBY OR WITH OPEN F4;     |
| 59  | +2.00 V  |          | DC BIAS AT U18 RECTIFIER INPUT PIN 9  |
| 60  | +2.00 V  |          | DC BIAS AT U18 RECTIFIER INPUT PIN 15 |
| 61  |          | 161 mV   |                                       |
| 62  | 0.0 V    | 472 mV   |                                       |

NOTES AND TEST CONDITIONS:

- VOLTAGES MEASURED WITH RESPECT TO GROUND USING A DVM OF AT LEAST 10MA DC AND 1MA AC INPUT IMPEDANCE. VOLTAGES MAY VARY ±20%.
- ALL DC AND SUPPLY VOLTAGES MEASURED WITH NO SIGNAL APPLIED.
- UNIT AT RATED LINE VOLTAGE.
- 8A RESISTIVE LOAD CONNECTED AT TP43 (J12), AND S10 (SPEAKER IMPEDANCE SWITCH) SET TO 8A.
- ALL CONTROLS AT CENTER ROTATION ("5-1/2").
- ALL PUSH BUTTON SWITCHES OUT.
- 25.8 mV 400 Hz SINEWAVE APPLIED AT TP1 (INPUT JACK).
- NO FOOTSWITCH CONNECTED.
- DC BIAS AND BALANCE CONTROLS R335 AND R361 SET TO OBTAIN A READING OF 100 mVDC FROM J10 AND J11 TO GROUND. SEE SCHEMATIC FOR INSTRUCTIONS.
- PCB SHOWN AS FABRICATED, WITH BREAK-AWAYS IN PLACE.

|  |   |  |
|--|---|--|
| DATABASE FILE:<br>Z347P.DBF<br>CHECKED BY: <i>[Signature]</i><br>DATE: 01-MAR-00<br>APPROVED: <i>[Signature]</i><br>DATE: 3-1-2000<br>TOLERANCES: UNLESS OTHERWISE NOTED<br>X.X .050"<br>X.XX .010"<br>X.XXX .005"<br>ANGLES .500° | PROPRIETARY<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., REDLANDS, CALIFORNIA U.S.A. IT IS TIME, ONCE AGAIN...<br>NEXT HIGHER ASSEMBLY:<br>SUNN 300T BASS AMP. | FENDER MUSICAL INSTRUMENTS<br>Corona, California U.S.A.<br>TITLE: SERVICE DIAGRAM COMB. (PCB assy)<br>SUNN 300T BASS AMPLIFIER<br>SIZE: D<br>DRAWN: WILKENS<br>ENGR: FM/MDW<br>DRAWING NUMBER: 0051944000<br>REV: E<br>CREATED: 08-JUN-98<br>PLOTTED: 29-FEB-00 SHEET 4 OF 4 |
|--|---|--|

| REV | EC NUMBER   | BY  | DATE      |
|-----|---|-----|-----------|
| B   | EC 2198   | GHG | 11/11/98  |
| C   | EC 2245-ADD ITEM 55, CHG QTY FOR ITEM 8 TO 16, CHG NOTE B | BS  | 1/18/99   |
| D   | EC 2378-ADD ITEM 56                                       | BW  | 1/13/2000 |



(N.S.) = NOT SHOWN

|    |    |            |                                       |
|----|----|------------|---------------------------------------|
| 56 | 1  | SEE MATRIX | LABEL MADE IN USA 1-3/4 x 7/32 (N.S.) |
| 55 | 3  | 0051404000 | STANDOFF NYLON BLACK .375             |
| 54 | 1  | 0021956000 | JACK PHONE OPEN CIRCUIT 11            |
| 53 | 1  | 0021550000 | JACK PHONE TIP SHUNT 12A              |
| 52 | 1  | 0037139000 | LABEL FUSE REPLACEMENT                |
| 51 | 1  | SEE MATRIX | LABEL FUSE                            |
| 50 | 1  | 0023531000 | TUBE 12AT7 HIGH MJ TWIN TRIODE        |
| 49 | 3  | 0013341000 | TUBE 7025/12AX7WA RUSSIAN MADE        |
| 48 | 6  | 0048489000 | TUBE VACUUM 6550 OUTPUT               |
| 45 | 1  | SEE MATRIX | LABEL VOLTAGE                         |
| 44 | 1  | 0013020000 | LABEL GROUNDING SEMKO                 |
| 43 | 1  | SEE MATRIX | WIRE SET SUNN 300T CHASSIS (N.S.)     |
| 42 | 4  | 0054386000 | STANDOFF M/F 4-40x9/16 HEX AL         |
| 41 | 4  | 0014171000 | SCRW M 4-40x3/8" PHP BLX              |
| 39 | 1  | 0038900000 | SCRW TF 6-32x1/4 PHP ZI               |
| 36 | 1  | 0051855000 | SWITCH ROCKER DPST W/BEZEL            |
| 35 | 11 | 0024604000 | KNOB BLACK W/WHITE STAMP 1-10         |
| 30 | 1  | 0053892000 | COVER BOX BIAS CONTROLS               |
| 28 | 6  | 0039369000 | RETAINER TOP TUBE SPRING              |
| 27 | 6  | 0039364000 | WASHER EPDM TUBE CLAMP DAMPNER        |
| 26 | 12 | 0053956000 | SPRING, EXTENSION 2.49x.15"           |
| 25 | 12 | 0039370000 | RETAINER ANCHOR TUBE SPRING           |
| 24 | 23 | 0031184000 | SCRW M6-32x1/4 PHPS BLX ITLW          |
| 22 | 1  | SEE MATRIX | FUSE                                  |
| 21 | 3  | 0013004000 | FUSE TD 20mmx5mm 250V 100mA           |
| 20 | 4  | 0053893000 | TUBE SHIELD SUNN MODEL T              |
| 19 | 1  | SEE MATRIX | FUSE HOLDER                           |
| 18 | 3  | 0036703000 | FUSE HOLDER 5mm FINGER GRIP           |
| 17 | 1  | 0022293000 | WSHR FLAT .473x.750 NI                |
| 16 | 2  | 0021568000 | SCRW M 6-32x3/16 PHP NI               |
| 15 | 2  | 0051155000 | SCRW SMB #4x3/8 PHP BLX               |
| 14 | 5  | 0016352000 | NUT HEX 3/8-32x3/32 TK NI             |
| 13 | 5  | 0031153000 | WSHR FLAT 3/8x.614 NI                 |
| 12 | 3  | 9904300100 | WASHER LCK INTL 3/8x.681x.032         |
| 11 | 4  | 0053480000 | WASHER FLAT .442 x.692 NI             |
| 10 | 4  | 0053479000 | NUT HEX 7/16 20x1/8 NI                |
| 9  | 1  | 0036570000 | SWITCH TOGGLE DPST W/NUTS             |
| 8  | 16 | 0032806000 | SCRW TF 6-32x1/4 PHP BLX              |
| 7  | 1  | 0047213000 | CONNECTOR AC LINE MALE IEC            |
| 6  | 8  | 0025819000 | NUT KEPS 10-32 ZINC                   |
| 5  | 1  | 0050854000 | TRANSFORMER, OUTPUT                   |
| 3  | 1  | SEE MATRIX | XFMR POWER                            |
| 2  | 1  | SEE MATRIX | PCB ASSY SUNN 300T                    |
| 1  | 1  | 0053941000 | CHASSIS SUNN 300T                     |

- ⚠ 12 EACH TYPICAL 0014171000 FROM PCB ASSY.
  - ⚠ FUSE BREAK-AWAY PCB INSTALLED IN P/N 0053933000 230V AND P/N 0053935000 240V ONLY.
  - ⚠ REMOVE RUBBER "O" RING FROM ITEM 20 BEFORE INSTALLING.
  - ⚠ BEND OUT SPRING EARS ON ITEM 20 TO PREVENT SPRINGS (ITEM 26) FROM RATTLING AGAINST TUBES (ITEM 48).
  - 5. HARDWARE INCLUDED WITH PART.
  - 4. COPYRIGHT - 2000 - FENDER MUSICAL INSTRUMENTS CORP.
  - 3. - 3 - SAMPLES OF FIRST PARTS MUST BE APPROVED BY FENDER R&D BEFORE STARTING PRODUCTION.
  - 2. ALL DIMENSIONS ARE IN INCHES.
  - 1. DO NOT SCALE DRAWING.
- NOTES: UNLESS OTHERWISE NOTED

MATRIX

| ITEM | QTY. | PART NO. | DESCRIPTION   |
|------|------|----------|---------------|
| 56   |      |          | LABEL         |
| 43   |      |          | WIRE SET      |
| 2    |      |          | PCB ASSY.     |
| 51   |      |          | LABEL FUSE    |
| 45   |      |          | LABEL VOLTAGE |
| 22   |      |          | FUSE          |
| 19   |      |          | FUSE HOLDER   |
| 3    |      |          | XFMR POWER    |
| 1    |      |          | CHASSIS ASSY. |

ENGINEER  
DRAWN  
DATE  
DFT. ENG. LENG.  
DATE DATE DATE  
DATE DATE DATE  
DATE DATE DATE

WILKENS  
GOOLER  
5/20/98  
1/13/00  
1/17/2000

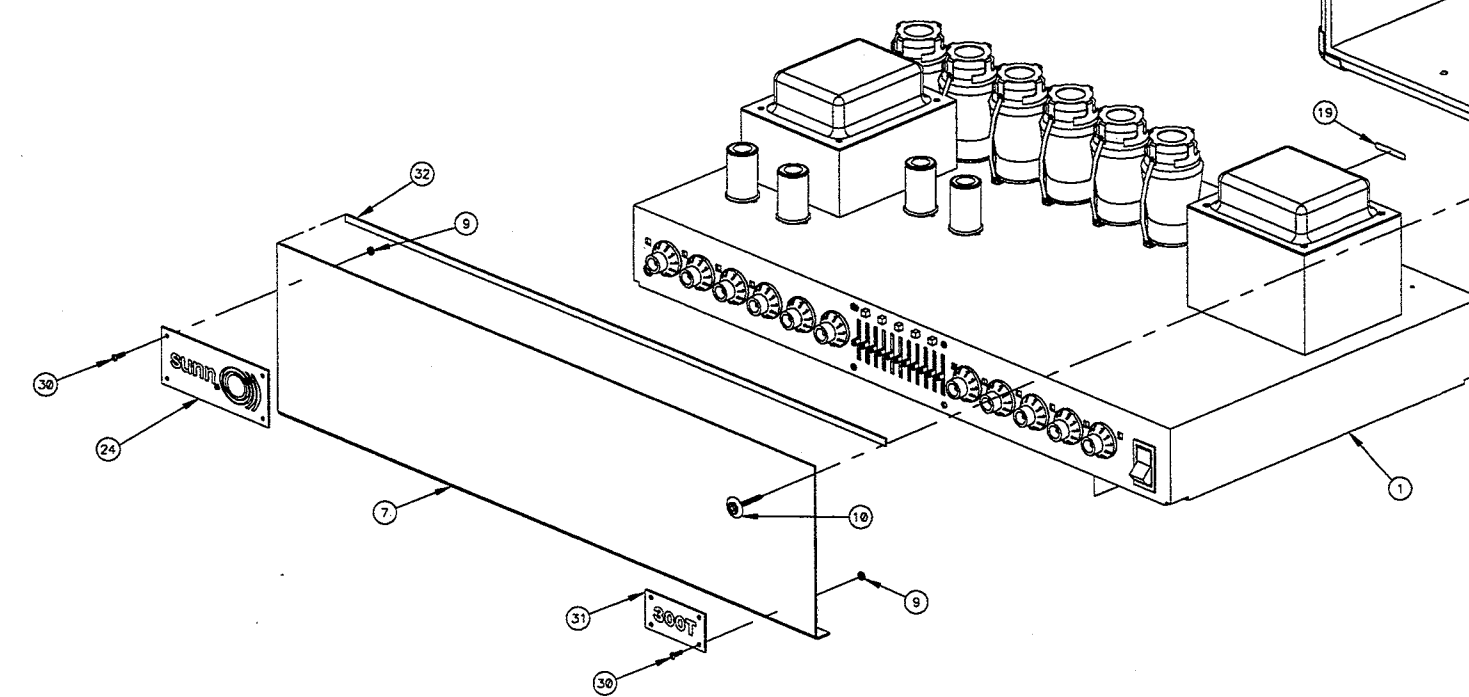
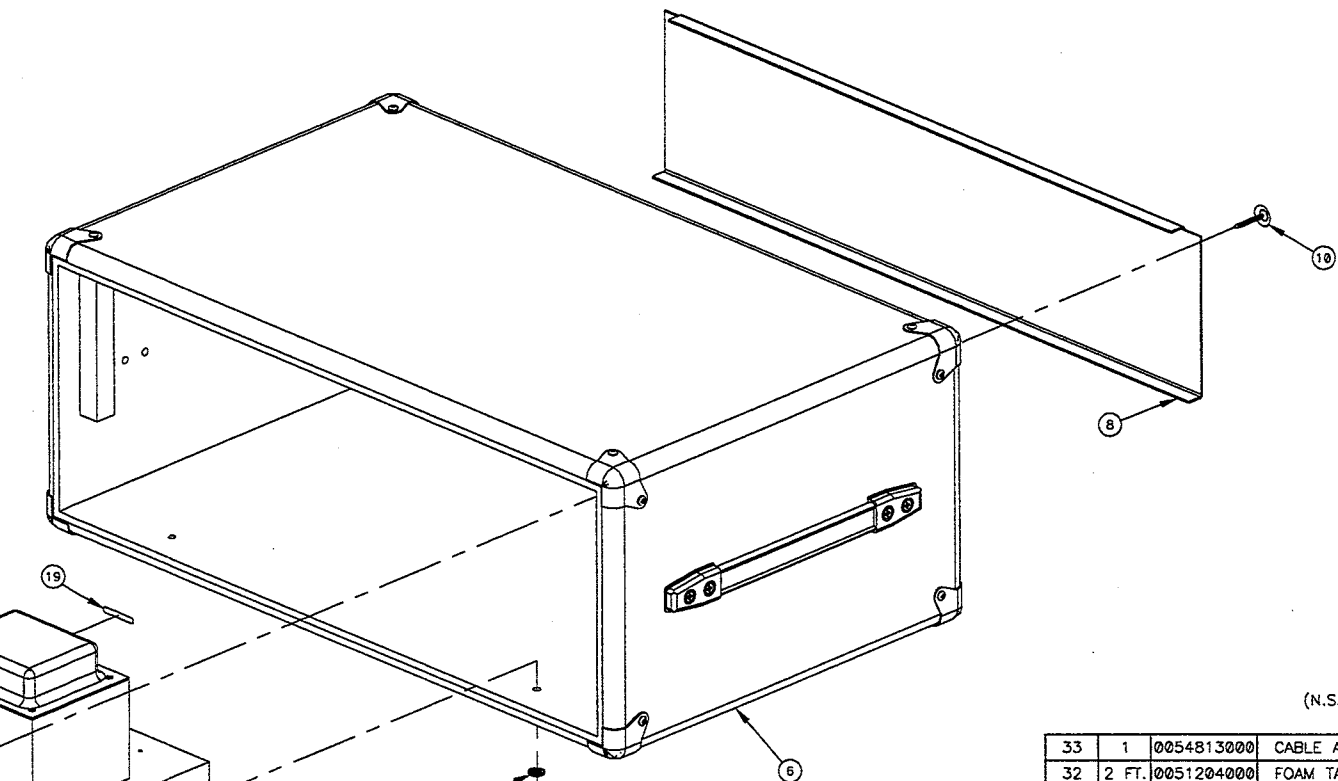
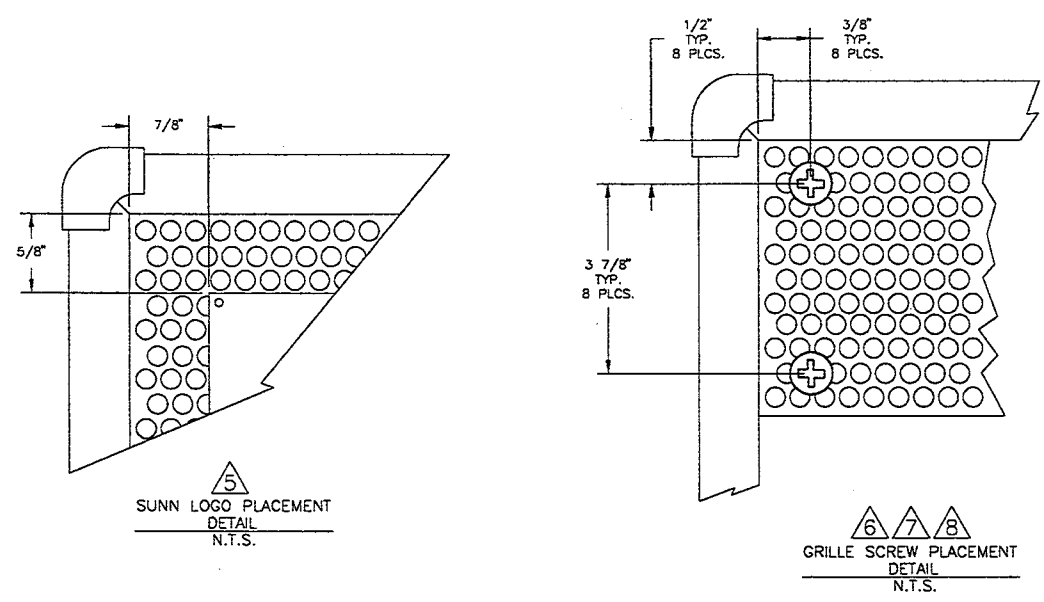
**Fender**  
FENDER MUSICAL INSTRUMENTS CORP.  
CORONA, CALIFORNIA 91720

TITLE  
CHASSIS ASSEMBLY  
SUNN 300T

| SHEET | SIZE | DRAWING NUMBER  | REV. |
|-------|------|-----------------|------|
| 1/1   | D    | 0053932000      | D    |
| SCALE | N/A  | MASTER/ASSEMBLY |      |

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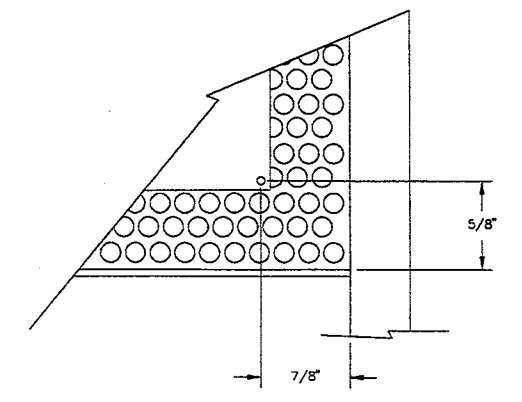
| REV | EC NUMBER         | BY   | DATE/WORK |
|-----|-------------------|------|-----------|
| A   | PR 347            | GHG  | 6/11/98   |
| B   | EC 2155           | B.S. | 8/19/98   |
| C   | CR 199<br>CHG BOM | JR   | 2/2/99    |



(N.S.) = NOT SHOWN

| ITEM | QTY.  | PART NO.   | DESCRIPTION                           |
|------|-------|------------|---------------------------------------|
| 33   | 1     | 0054813000 | CABLE ASSY SPEAKER SUNN (N.S.)        |
| 32   | 2 FT. | 0051204000 | FOAM TAPE 1/4" 1/16 3M4516            |
| 31   | 1     | 0054382000 | PLATE SUNN 300T                       |
| 30   | 8     | 0017433000 | SCRW M 6-32x3/8 PHP BLX               |
| 25   | 1     | SEE MATRIX | CORD (N.S.)                           |
| 24   | 1     | 0051380000 | PLATE SUNN LOGO                       |
| 23   | 8     | 0029527000 | WSHR FNH 8-5/8 FLNGD BLX WX           |
| 22   | 8     | 0036199000 | SCRW M 8-32x1-3/16 OHP BLX CP         |
| 21   | 1     | 0053939000 | CARTON SUNN 300T (N.S.)               |
| 20   | 2     | 0054767000 | FOAM END CAP SUNN 300T (N.S.)         |
| 19   | 1     | 0049081000 | LABEL SERIAL (CORONA)                 |
| 18   | 1     | 0010032000 | BAG POLY BOX BTM 23x17x40 .002 (N.S.) |
| 17   | 3     | 9903311400 | BAG JIFFY #1 7-1/4x12 (N.S.)          |
| 16   | 1     | 9903320000 | BAG POLY BOX ZIP 10x13 2M (N.S.)      |
| 15   | 1     | 0051944000 | COMB SVC DIAG PCB SUNN 300T (N.S.)    |
| 14   | 1     | 0053937000 | MANUAL OWNERS SUNN 300T (N.S.)        |
| 11   | 1     | 0053895000 | FOOTSWITCH 3 BUTTON SUNN BASS (N.S.)  |
| 10   | 8     | 0036112000 | SCRW SMAB 6x1-1/4 OHP BLX w/WS        |
| 9    | 8     | 0069393000 | NUT 6-32 HEX EXT LOCK                 |
| 8    | 1     | 0053598000 | GRILLE REAR SUNN 300T                 |
| 7    | 1     | 0053564000 | GRILLE FRONT SUNN 300T                |
| 6    | 1     | 0051392000 | CAB ASSY SUNN 300T                    |
| 1    | 1     | SEE MATRIX | CHASSIS                               |

- △ 8. DISTANCE BETWEEN CHASSIS TOP AND REAR GRILLE 1/16".
  - △ 7. DISTANCE BETWEEN CHASSIS TOP AND FRONT GRILLE 1/16".
  - △ 6. LOCATE SCREWS AS HOLES WILL PERMIT.
  - △ 5. LOCATE LOGOS AS HOLES WILL PERMIT.
  - 4. COPYRIGHT - 1999 - FENDER MUSICAL INSTRUMENTS CORP.
  - 3. - 3 - SAMPLES OF FIRST PARTS MUST BE APPROVED BY FENDER R&D BEFORE STARTING PRODUCTION.
  - 2. ALL DIMENSIONS ARE IN INCHES.
  - 1. DO NOT SCALE DRAWING.
- NOTES: UNLESS OTHERWISE NOTED



| END ITEM  | SUNN 300T 120V DOM. 0213302000 | SUNN 300T 240V AUST. 0213332000 | SUNN 300T 230V U.K. 0213342000 | SUNN 300T 230V 0213362000 | SUNN 300T 100V JAP. 0213372000 |
|-----------|--------------------------------|---------------------------------|--------------------------------|---------------------------|--------------------------------|
| 25 CORD   | 0047248000                     | 0047250000                      | 0047249000                     | 0047251000                | 0053997000                     |
| 1 CHASSIS | 0053932000                     | 0053933000                      | 0053935000                     | 0053935000                | 0053936000                     |

ENGINEER WILKENS  
DRAWN GOOLER  
DATE 5/21/98  
DFT/ENG. DATE DATE DATE  
DATE DATE DATE  
DATE 2/3/98

Fender  
FENDER MUSICAL INSTRUMENTS CORP.  
CORONA, CALIFORNIA 91720

TITLE  
END ITEM  
SUNN 300T

SHEET 1/1  
SCALE N/A

DRAWING NUMBER 0213302000  
MASTER

REV. C