

# STAGE 100/160

STAGE 100 p/n 022-6700-010 (120V)  
STAGE 160 p/n 022-6800-010 (120V)

## SERVICE MANUAL

STAGE 100/160  
(This is the model name for warranty claims)

## SERVICE MANUAL

JUNE 1999

### 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:



### CONTENTS:

- Notices
- Specifications
- Parts lists:
  - PCB assembly
  - Chassis assembly
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### 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

# SPECIFICATIONS

# PARTS LIST

	STAGE 100	STAGE 160	
<b>Product Release No.:</b>	PR 401 <i>(This is not a model number)</i>	PR 400	
<b>Part Number:</b>	22-6700-010 120V Version 22-6730-010 240V Aus 22-6740-010 230V UK 22-6760-010 230V Eur 22-6770-010 100V	22-6800-010 22-6830-010 22-6840-010 22-6860-010 22-6870-010	
<b>Power Requirements: (Both versions)</b>	100V Version : 100 VAC 50/60 Hz, 400W 120V : 120 VAC 60 Hz, 400W 230V : 230 VAC 50 Hz, 400W 240V : 240 VAC 50 Hz, 400W		
<b>Power Amp Section Power Output:</b>	100 Watts RMS minimum into 8 Ω @ 5% THD	160W RMS into 4 Ω @ 5% THD	
<b>With 8Ω Extension Speaker:</b>	160 Watts RMS into 4 Ω @ 5% THD		
<b>Sensitivity:</b>	620mV for 100W into 8Ω @ 1kHz 810mV for 160W into 4Ω @ 1kHz	810 mV for rated power @ 1kHz	
<b>Preamp Section Input impedance:</b>	Input 1: 850kΩ Input 2: 66kΩ	Input 1: 850kΩ	
<b>FX Send Output Impedance:</b>	1kΩ	1kΩ	
<b>FX Return Input Impedance:</b>	10kΩ	10kΩ	
<b>Speaker Complement:</b>	One 8 Ω Celestion G12T-100 12" Speaker (P/N 054420)	Two 8 Ω Celestion G12T-100 12" Speakers (P/N 054420)	
<b>Dimensions:</b>	Height: 17.5" (45 cm) Width: 22.4" (56.9 cm) Depth: 10.2" (25.9 cm)	Height: 18.5" (47 cm) Width: 26.1" (66 cm) Depth: 10.3" (26 cm)	
<b>Weight:</b>	42 lbs. (19.1 kg)	53 lbs. (24.1 kg)	

*Product specifications are subject to change without notice*

*NOTE: SHADED ITEMS ARE FOR REFERENCE ONLY*

## PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	033606003	CAP AE RDL .47uF 50V 20%	C16 C38 C85-86
2	028458003	CAP AE RDL 1uF 50V 20%	C14 C60
3	028459003	CAP AE RDL 2.2uF 50V 20%	C6 C17 C45
8	028467003	CAP AE RDL 22uF 50V 20%	C8 C10 C26 C37 C51-52 C78-79
3	028471003	CAP AE RDL 47uF 50V 20%	C43 C70-71
3	028474003	CAP AE RDL 100uF 25V 20%	C42 C67-68
2	055780000	CAP AE RDL 1000uF 35V 105°C 20%	C65-66
2	028031000	CAP AE RDL 3300uF 63V	C63-64
3	038699001	CAP CA 100pF 100V LL	C7 C25 C32
4	039259001	CAP CA 220pF 100V LL	C29 C34 C81-82
2	038701001	CAP CA 470pF 50V LL	C9 C15
3	039263001	CAP CA 1000pF 50V LL	C3 C18 C21
8	034788003	CAP CR .1uF 50V 20% .2" LS	C46-47 C72-77
3	027257003	CAP MPF .0022uF 100V 10%	C30 C83-84
2	027259003	CAP MPF .0033uF 100V 10%	C23 C39
3	027261003	CAP MPF .0047uF 100V 10%	C1-2 C24
1	027264003	CAP MPF .01uF 100V 10%	C41
1	041903003	CAP MPF .018uF 100V 10%	C35
1	027267003	CAP MPF .022uF 100V 10%	C20
3	027269003	CAP MPF .033uF 63V 10%	C12-13 C36
8	027272003	CAP MPF .047uF 63V 10%	C11 C19 C49-50 C56-59
1	027275003	CAP MPF .068uF 100V 10%	C40
1	027278003	CAP MPF .1uF 63V 10%	C22
2	052003003	CAP MPF .1uF 250V 10%	C61-62
1	053860000	CAP MPF .1uF 250VAC 10%	C69
3	027281003	CAP MPF .22uF 63V 10%	C5 C54-55
4	027286003	CAP MPF .47uF 63V 10%	C4 C31 C44 C53
1	030950003	CAP PPF RDL .022uF 50V 5%	C28
2	030953003	CAP PPF RDL .039uF 50V 5%	C27 C33
1	051416003	CAP SF .1uF 100V 10%	C48
1	054390000	CONTROL SNAPIN 5k 15A TAPER	R11 <b>middle (ch1)</b>
1	027940000	CONTROL SNAPIN 50k 15A TAPER	R10 <b>bass (ch1)</b>
6	027941000	CONTROL SNAPIN 50k B TAPER	R9 R16 R35 R39 R61-62 <b>treble (ch1) volume (ch1/ch2) mid (ch2) reverb(ch1/ch2)</b>
2	027947000	CONTROL SNAPIN 100k 30C TAPER	R27 R44 <b>drive treble (ch2)</b>
1	027949000	CONTROL SNAPIN 250k 30C TAPER	R43
35	006260001	DIODE 1N4448 SIGNAL LL	D1-4 D7-21 D36-42 D44-46 D50-51 D53 D65-67
2	028119000	DIODE ZEN 1N5353B 16V 5W 5%	D62-63
4	029045000	DIODE 6A 400V 6A4 LEAD FORM	D54-57
2	031635001	DIODE ZEN 1N5240B 10V 5% LL	D43 D47
2	031729001	DIODE ZEN 1N5231B 5.1V 5% LL	D48-49
2	054210001	DIODE BAT85 LL	D22-23
6	064089001	DIODE 1N4003 LL	D58-61 D68-69

**PARTS LIST**

**PARTS LIST**

**PRINTED CIRCUIT BOARD ASSEMBLY (CONT.)**

**PRINTED CIRCUIT BOARD ASSEMBLY (CONT.)**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
18	025802000	FSTN TAB MALE .250x.032 PCB MT	P1-18
2	020775000	FUSE CLIP, PCB 5mm	F1
1	027416000	HDR .1 CTR 8 CKT SQ PIN	P21
2	048914000	CABLE RIBBON 8 CKT 7in	PW21
1	054259000	HEATSINK PLATE STAGE 100/160	HS1
6	032908000	SCRW TF 6-32x3/8 PHP ZI	at HS1/PCB
1	016795000	IC DUAL OP AMP TL072	U1
6	031611000	IC DUAL OP AMP PC4560	U2-7
1	027387000	INDUCTOR AIR CORE RDL 2.5uH	L1
2	051658000	JACK MONO R/A	J3 J7
4	053450000	JACK STEREO R/A	J1-2 J4 J9
3	053450000	JACK STEREO R/A	J1-2 J4
2	048466000	JACK RCA SINGLE PCB MOUNT	J5-6
1	054261000	XLR CONNECTOR MALE RT ANGLE	J8
2	028091000	SWITCH PUSH SLFLK SHRT STRK	S1-2
2	048451000	BUTTON PUSH OFF WHITE	at S1-2
2	049948003	LED, RED LONG LEAD LUMEX	D5-6
1	040271000	LED, RED/YELLOW	D52
1	054260000	LED, RED CLEAR, PNL MT 7"	D64
5	024947001	RES CF 1/4W 5% 47 ohm LL	R32 R47 R53 R129-130
1	024954001	RES CF 1/4W 5% 150 ohm LL	R76
2	024956001	RES CF 1/4W 5% 220 ohm LL	R153-154
1	029604001	RES CF 1/4W 5% 300 ohm LL	R75
1	024961001	RES CF 1/4W 5% 470 ohm LL	R36
10	024965001	RES CF 1/4W 5% 1k LL	R20 R67 R74 R89-90 R112-113 R121-122 R126
8	024969001	RES CF 1/4W 5% 1.5k LL	R24 R56 R92-93 R96-97 R100-101
6	024971001	RES CF 1/4W 5% 2.2k LL	R17 R77-78 R82 R85 R111
2	024972001	RES CF 1/4W 5% 2.7k LL	R83-84
6	024973001	RES CF 1/4W 5% 3.3k LL	R28 R69 R81 R86 R151-152
2	024977001	RES CF 1/4W 5% 4.7k LL	R52 R70
2	028034001	RES CF 1/4W 5% 5.1k LL	R5 R25
2	024979001	RES CF 1/4W 5% 6.8k LL	R6 R14
1	024980001	RES CF 1/4W 5% 8.2k LL	R23
15	024981001	RES CF 1/4W 5% 10k LL	R26 R34 R55 R91 R109-110 R124 R132-133 R136-137 R142 R144 R146 R149
1	024985001	RES CF 1/4W 5% 15k LL	R7
5	024987001	RES CF 1/4W 5% 22k LL	R8 R12 R21-22 R127
5	024988001	RES CF 1/4W 5% 27k LL	R58-59 R107-108 R140
6	024989001	RES CF 1/4W 5% 33k LL	R1-2 R29 R37 R45-46
6	024993001	RES CF 1/4W 5% 47k LL	R33 R38 R40 R71-72 R158
1	024995001	RES CF 1/4W 5% 68k LL	R41
13	024997001	RES CF 1/4W 5% 100k LL	R18-19 R42 R60 R63-64 R66 R79-80 R123 R125 R141 R145

**STAGE 100 ONLY**  
**STAGE 160 ONLY**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	025058001	RES CF 1/4W 5% 180k LL	R13 R48
4	025059001	RES CF 1/4W 5% 220k LL	R15 R31 R57 R65
3	025065001	RES CF 1/4W 5% 470k LL	R30 R135 R139
2	028018001	RES CF 1/4W 5% 510k LL	R3-4
8	025069001	RES CF 1/4W 5% 1M LL	R54 R68 R128 R134 R138 R143 R147 R150
1	027632001	RES MF 1/4W 1% 2.43k LL	R49
1	015582001	RES MF 1/4W 1% 10.0k LL	R50
1	016971001	RES MF 1/4W 1% 33.2k LL	R51
1	031767001	RES CF 1/2W 5% 15 ohm LL	R120
1	047750001	RES CF 1/2W 5% 330 ohm LL	R157
1	027872001	RES CF 1/2W 5% 1.2k LL	R148
4	039209001	RES FILM 1W 5% .22 ohm LL	R114-117
1	027627001	RES FILM 1W 5% 10 ohm LL	R106
1	031067001	RES FILM 1W 5% 750 ohm LL	R131
2	027628001	RES MOX 2W 5% 47 ohm LL	R104-105
2	055781001	RES MF FUSE 2W 5% 82 ohm LL	R155-156 (Fu82, 2W)
2	028021001	RES MOX 2W 5% 470 ohm LL	R118-119
6	028028000	RES WW 5W 10% .47 ohm	R94-95 R98-99 R102-103
1	026411000	THERMISTOR 2.5 OHM 8A C30-19	RT1
1	051418003	THERMAL SENSOR PTC 100 DEG C	RT2
9	014689003	XSTR N-CH JFET J111 TO-92	Q1-8 Q21
3	016739003	XSTR NPN 2N4401 TO-92	Q12 Q22 Q25
6	016742003	XSTR PNP 2N4403 TO-92	Q9 Q13 Q20 Q23-24 Q26
1	051447003	XSTR PNP 2SB1236	Q11
1	051448003	XSTR PNP 2SD1857	Q10
3	028114000	XSTR NPN TIP142 TO-218AC	Q14 Q16 Q18
3	028115000	XSTR PNP TIP147 TO-218AC	Q15 Q17 Q19
6	027638000	SCRW TF 4-40x3/8 HWHS ZI .1" HD	at Q14-Q19/HS1
6	028169000	WSHR SHLDR NYL 5/32x1/4	at Q14-Q19
6	040903000	INSULATOR MICA TO-218	at Q14-Q19
1	054252000	PCB FAB STAGE 100/160 AMP	
RF	025936000	STANDOFF NYL PCB SNAP 3/8" NAT	

**PARTS LIST**

**PARTS LIST**

**CHASSIS ASSEMBLY**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	021709000	BUSHING SR .437x.062x13/32 BLK	FOR SPKR WIRE
1	026116000	BUSHING SR .500x.063x7/16 BLK	FOR REV. CABLE
1	025722000	CABLE REVERB 1100mm	
1	054246000	CHASSIS, STAGE 100 AMP	
1	054249000	CHASSIS, STAGE 160 AMP	
1	053884000	FUSE QA 20mmX5mm 125V 4A UL/CSA	100V/120V
1	020795000	FUSE QA 20mmx5mm 250v 2.5A	230V/240V
1	039203000	HEATSINK BAR STAGE 112SE	
1	054798000	JEWEL ASSY., LED	
1	031625000	NUT HOLDER PILOT LIGHT 11/16-27	@ JEWEL
11	053986000	KNOB, ROTARY SS W/ INSERT	@ CONTROLS
6	053479000	NUT HEX 7/16 20X1/8 NI	@ JACKS
6	053480000	WASHER FLAT .442 X.692 NI	@ JACKS
1	028937000	SCRW TF 6-32x5/8 PHP ZI TAPTYT	@ STANDOFF
7	002850000	SCRW TF 8-32x3/4 HWH SLTD Z1	@ HEATSINK
2	051155000	SCRW SMB #4X3/8 PHP BLX	@ XLR JACK
1	038900000	SCRW TF 6-32X1/4 PHP ZI	@ GND LUG
1	025936000	STANDOFF NYL PCB SNAP 3/8" NAT	
1	054247000	PANEL, FRONT, STAGE 100	
1	054250000	PANEL, FRONT, STAGE 160	
1	054248000	PANEL, REAR, STAGE 100	
1	054251000	PANEL, REAR, STAGE 160	
1	054253000	PCB ASSY STAGE 100 AMP	
1	054254000	PCB ASSY STAGE 160 AMP	
1	039236000	SWITCH ROCKER DPST PSEUDO-IEC	100V/120V
1	040582000	SWITCH DPST .250 TAB GLOBAL	
1	054642000	SOCKET, IEC SNAP IN	
1	039129000	XFMR PWR STAGE 112SE 120V	DOMESTIC ONLY
1	039084000	XFMR PWR STAGE 112SE EXP	EXPORT ONLY
1	028564000	END BELL XFMR 185 Series	@ XFMR
4	028591000	NUT ACORN 8-32	@ XFMR
4	030007000	WSHR LCK INTL 8x.330x.02 ZI	@ XFMR

**STAGE 100 CAB ASSEMBLY**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	026566000	CORNER 2 HOLE w/TAB NI	
2	026568000	CORNER 3 HOLE NI	
4	019276000	GLIDE CAB 1.24x.335 NI	
4	019275000	INSERT GLIDE CUSHION 1.27 DIA	
1	027846000	HANDLE 9.25" NO LOGO	
2	019279000	HANDLE CAP 2 HOLE NI	
1	032524000	INSERT HANDLE	
8	021972000	NUT T 10-32x3/4 STR 3 PRNG BLX	
4	022244000	SCRW M 10-32x1-1/8 OHP NI	
10	026571000	SCRW SMAB 8x5/8 THP NI	
4	026625000	SCRW WOOD 8x1 FH	
1.1	026570000	TOLEX BLACK	
.2	029085000	VELCRO STRIP LOOP 1.5"wd BLK	
.2	029086000	VELCRO STRIP HOOK 1.5"wd BLK	

**STAGE 160 CAB ASSEMBLY**

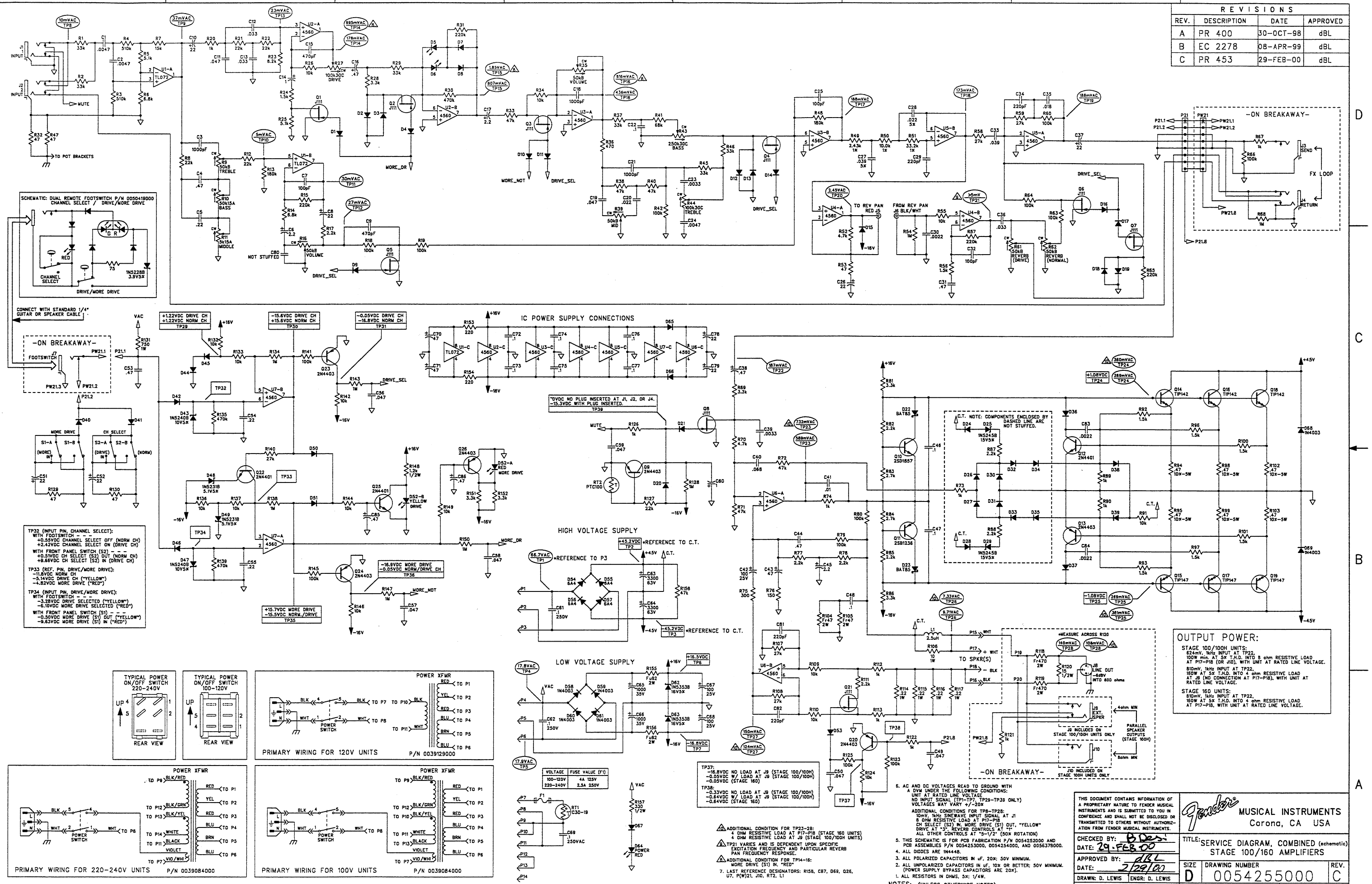
QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
.63	037788000	CLOTH GRILLE BLACK/SILVER	
4	026566000	CORNER 2 HOLE w/TAB NI	
2	026568000	CORNER 3 HOLE NI	
4	019276000	GLIDE CAB 1.24x.335 NI	
4	019275000	INSERT GLIDE CUSHION 1.27 DIA	
1	027846000	HANDLE 9.25" NO LOGO	
2	019279000	HANDLE CAP 2 HOLE NI	
1	032524000	INSERT HANDLE	
4	023505000	MTG PLATE - SWIVEL CASTER	
12	021972000	NUT T 10-32x3/4 STR 3 PRNG BLX	
4	022244000	SCRW M 10-32x1-1/8 OHP NI	
10	026571000	SCRW SMAB 8x5/8 THP NI	
4	026625000	SCRW WOOD 8x1 FH	
16	027199000	SCRW SMAB 10x3/4 PHP NI	
1.2	026570000	TOLEX BLACK	
.5	029085000	VELCRO STRIP LOOP 1.5"wd BLK	
.5	029086000	VELCRO STRIP HOOK 1.5"wd BLK	

**PARTS LIST**

**END ITEM ASSEMBLY**

<b>QTY</b>	<b>PART #</b>	<b>DESCRIPTION</b>	<b>REFERENCE DESIGNATION</b>
1	040071000	CAB ASSY ULT. CHORUS/STAGE 160	STAGE 160
1	040025000	CAB ASSY STAGE 100/112SE/RP1000	STAGE 100
4	023513000	CASTER SWIVEL	<b>STAGE 160 ONLY</b>
1	054236000	CHS ASSY STAGE 100 AMP 120V	STAGE 100
1	054237000	CHS ASSY STAGE 100 AMP 230V	STAGE 100
1	054238000	CHS ASSY STAGE 100 AMP 230V U.K.	STAGE 100
1	054239000	CHS ASSY STAGE 100 AMP 240V AUST	STAGE 100
1	054240000	CHS ASSY STAGE 100 AMP 100V	STAGE 100
1	054241000	CHS ASSY STAGE 160 AMP 120V	STAGE 160
1	054242000	CHS ASSY STAGE 160 AMP 230V	STAGE 160
1	054243000	CHS ASSY STAGE 160 AMP 230V U.K.	STAGE 160
1	054244000	CHS ASSY STAGE 160 AMP 240V AUST	STAGE 160
1	054245000	CHS ASSY STAGE 160 AMP 100V	STAGE 160
1	047248000	CORD PWR W/IEC CONN DOM	DOMESTIC
1	047250000	CORD PWR W/IEC CONN 240V	240V AUST
1	047249000	CORD PWR W/IEC CONN 230V UK	230V U.K.
1	047251000	CORD PWR W/IEC CONN 230V	230V EUR
1	053997000	CORD PWR W/IEC CONN 100V JPN	100V JPN
1	050419000	FOOTSWITCH 2 BTN CH DRV/MDRV	
1	028095000	CABLE ASSY FTSW RT ANG 12'	@ FOOTSWITCH
1	040024000	GRILLE ASSY STAGE 100/112SE	<b>STAGE 100 ONLY</b>
1	029906000	NAMEPLATE FENDER GENERIC SMALL	
1	028055000	REVERB UNIT 800 ohm 8EB2C1B DN	
1	022491000	CLAMP CABLE NYL SCRW MNT 5/16	@ REV CABLE
4	029821000	EYELET RFLNGD .215 OD x.315 L	@ REV PAN
5	029828000	SCRW PB 8x3/4 PHP ZI	@ PAN/CLAMP
1	022327000	WSHR FLAT 8X7/16 NI	@ CLAMP
2	018113000	SCRW SMA 4x1/2 OHP BLX	@ LOGO
6	029527000	WSHR FNSH 8-5/8 FLNGD BLX WX	@ CHS SCREWS
6	036199000	SCRW M 8-32x1-3/16 OHP BLX CP	CHS SCREWS
8	026577000	SCRW M 10-32X1 PHP BLX	@ SPEAKERS (4 IN STAGE 100)
2	054420000	SPKR 12" 8Ω G12T-100 CELESTION	(1 IN STAGE 100)

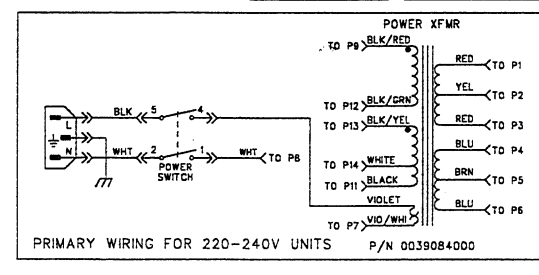
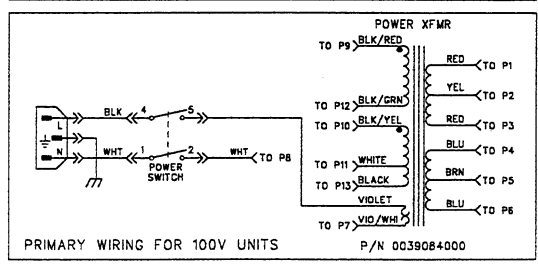
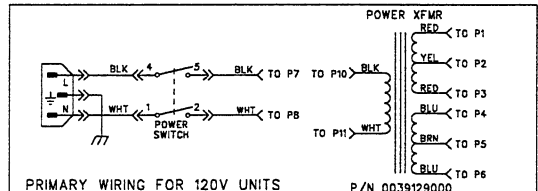
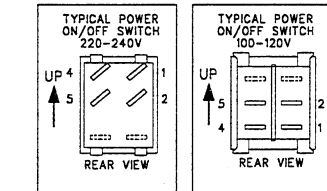
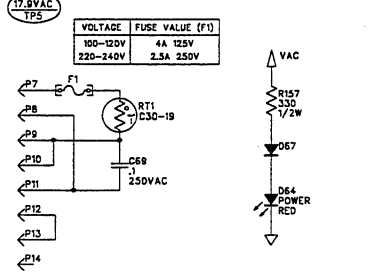
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 400	30-OCT-98	dBL
B	EC 2278	08-APR-99	dBL
C	PR 453	29-FEB-00	dBL



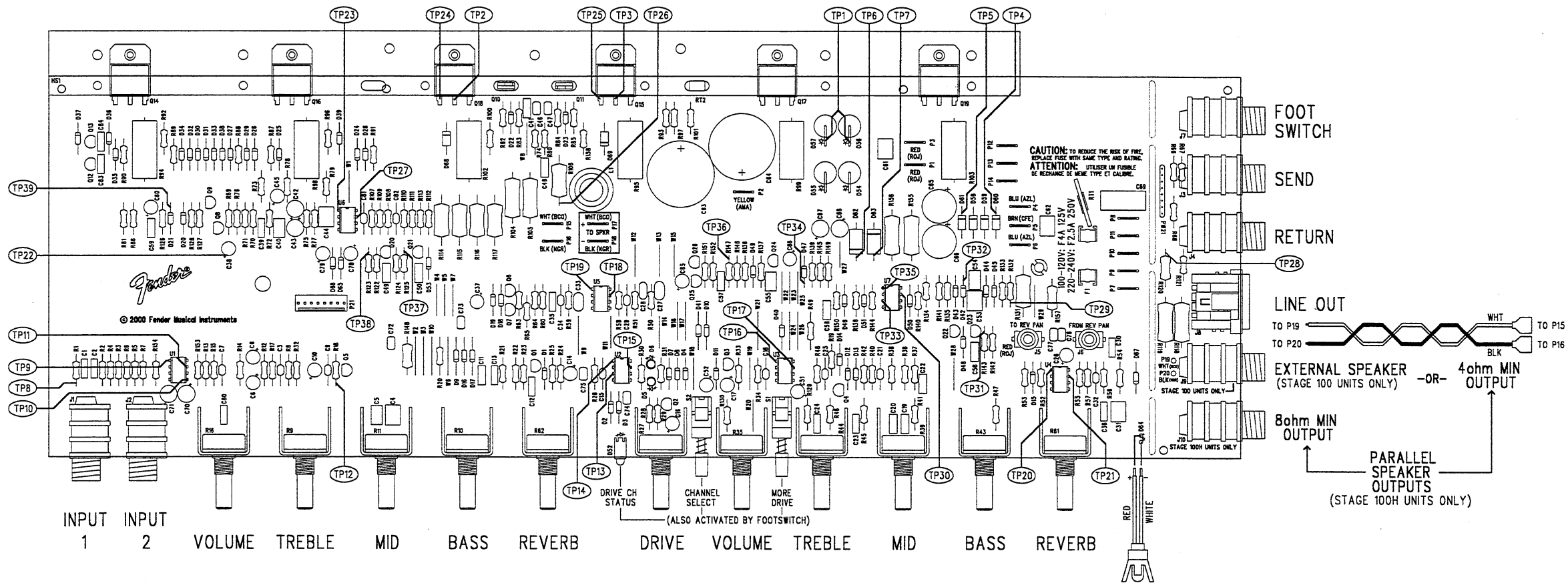
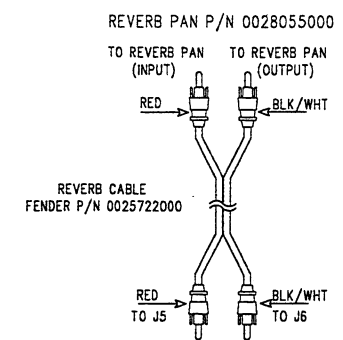
**OUTPUT POWER:**  
 STAGE 100/100H UNITS:  
 624mV, 1kHz INPUT AT TP22,  
 100mV MIN. AT 5X T.H.D. INTO 8 ohm RESISTIVE LOAD  
 AT P17-P18 (OR J10), WITH UNIT AT RATED LINE VOLTAGE.  
 810mV, 1kHz INPUT AT TP22,  
 150W AT 5X T.H.D. INTO 4 ohm RESISTIVE LOAD  
 AT J9 (NO CONNECTION AT P17-P18), WITH UNIT AT  
 RATED LINE VOLTAGE.  
 STAGE 160 UNITS:  
 810mV, 1kHz INPUT AT TP22,  
 150W AT 5X T.H.D. INTO 4 ohm RESISTIVE LOAD  
 AT P17-P18, WITH UNIT AT RATED LINE VOLTAGE.

THIS DOCUMENT CONTAINS INFORMATION OF A PROPRIETARY NATURE TO FENDER MUSICAL INSTRUMENTS AND IS SUBMITTED TO YOU IN CONFERENCE AND SHALL NOT BE DISCLOSED OR TRANSMITTED TO OTHERS WITHOUT AUTHORIZATION FROM FENDER MUSICAL INSTRUMENTS.		Fender® MUSICAL INSTRUMENTS Corona, CA USA	
CHECKED BY: <i>B. Des...</i>	TITLE: SERVICE DIAGRAM, COMBINED (schematic) STAGE 100/160 AMPLIFIERS		
DATE: 29 FEB 00	APPROVED BY: <i>dBL</i>	DATE: 2/29/00	SIZE: DRAWING NUMBER
DRAWN: D. LEWIS	ENGR: D. LEWIS	DATE: 2/29/00	REV. C
DATABASE FILE: 2400S.SCH	RELEASE DATE: 30-OCT-98	SHEET: 1 OF 2	

5. AC AND DC VOLTAGES READ TO GROUND WITH A DIM UNDER THE FOLLOWING CONDITIONS:  
 UNIT AT RATED LINE VOLTAGE  
 NO INPUT SIGNAL (TP1-TP7, TP9-TP38 ONLY)  
 VOLTAGES MAY VARY +/-20%  
 ADDITIONAL CONDITIONS FOR TP9-TP28:  
 10mV, 1kHz SINEWAVE INPUT SIGNAL AT J1  
 0.5W RESISTIVE LOAD AT P17-P18  
 CH SELECT (S1) IN MORE DRIVE (S1) OUT, "YELLOW"  
 DRIVE AT "3", REVERSE CONTROLS AT "1"  
 ALL OTHER CONTROLS AT "0-1/2" (50% ROTATION)
6. ALL DIODES ARE 1N4448.
7. LAST REFERENCE DESIGNATORS: R158, C87, D68, Q26, U7, P(W)21, J10, RT2, L1
- NOTES: (UNLESS OTHERWISE NOTED)



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 400	28-OCT-98	dBL
B	EC 2278	08-APR-99	dBL
C	PR 453	29-FEB-99	dBL



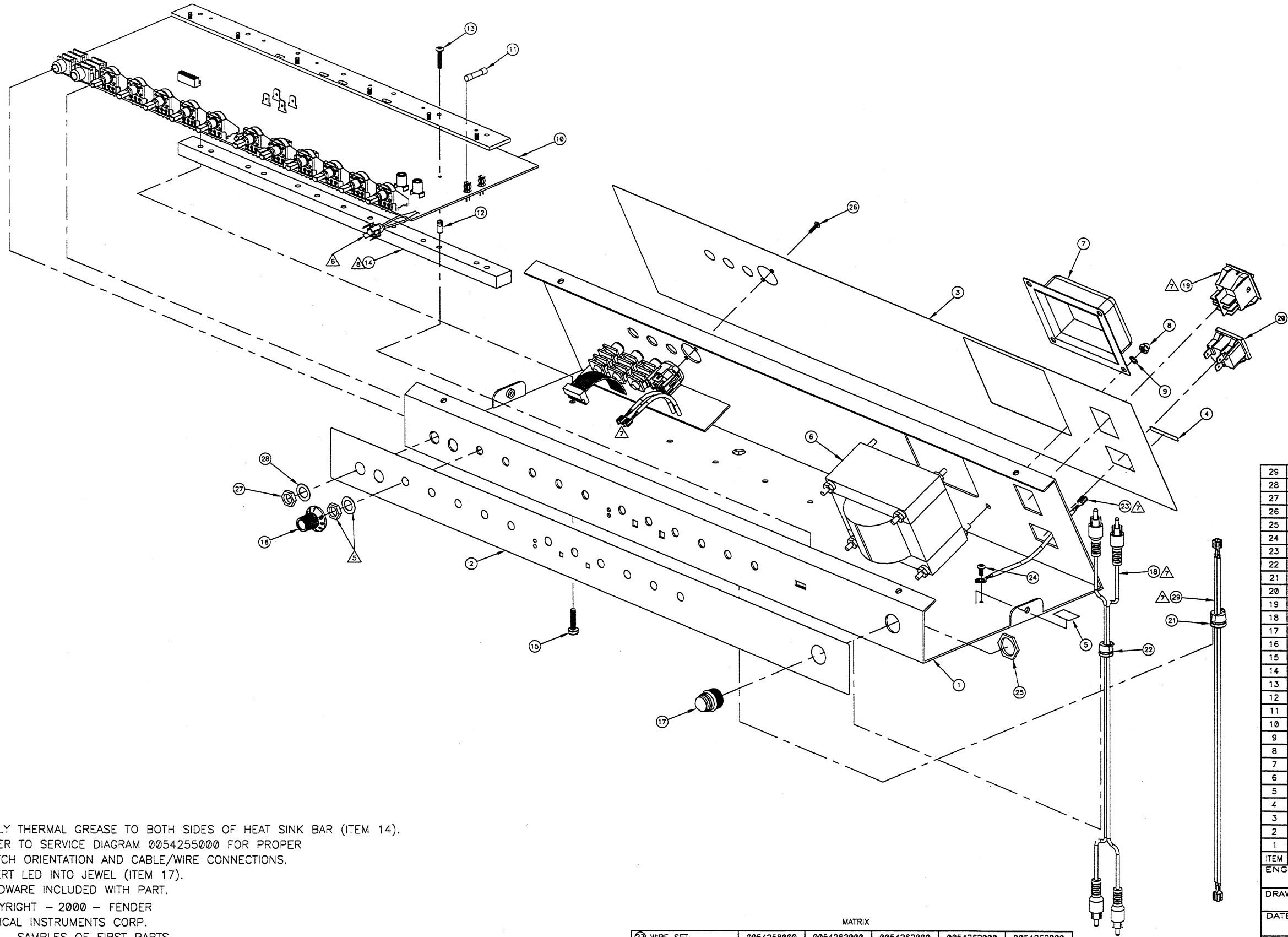
Fender  
© 2000 Fender Musical Instruments

FILE/DWG: SERVICE DIAGRAM  
DATABASE: Z400P.PCB DATE: 29-FEB-00

1. SEE SHEET 1 FOR PRIMARY WIRING, TEST CONDITIONS, TEST POINT VALUES, AND STUFFING DIFFERENCES BETWEEN MODELS.  
NOTES: (UNLESS OTHERWISE NOTED)

<small>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.</small>		<b>MUSICAL INSTRUMENTS</b> Corona, CA U.S.A.	
CHECKED BY: <i>DL</i>	DATE: <i>02-MAR-00</i>	TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) STAGE 100/160 AMPLIFIERS	
APPROVED BY: <i>dBL</i>	DATE: <i>3/2/00</i>	SIZE: <b>D</b>	DRAWING NUMBER: <b>0054255000</b>
DRAWN: D. LEWIS	ENGR: D. LEWIS	RELEASE DATE: 30-OCT-98	REV. <b>C</b>
DATABASE FILE: Z400P.PCB		SHEET 2 OF 2	

REV	EC NUMBER	BY	DATE/CHK
A	PR 400	GHG	11/4/98
B	PR 453	JR	2/28/2000



- △ APPLY THERMAL GREASE TO BOTH SIDES OF HEAT SINK BAR (ITEM 14).
- △ REFER TO SERVICE DIAGRAM 0054255000 FOR PROPER SWITCH ORIENTATION AND CABLE/WIRE CONNECTIONS.
- △ INSERT LED INTO JEWEL (ITEM 17).
- △ 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					
③ WIRE SET	0054258000	0054262000	0054262000	0054262000	0054262000
⑨ SWITCH	0039236000	0040582000	0040582000	0040582000	0039236000
① FUSE	0053884000	0020795000	0020795000	0020795000	0053884000
⑥ XFMR	0039129000	0039084000	0039084000	0039084000	0039084000
④ LABEL, VOLTAGE	-	0050505000	0050505000	0050506000	0050507000
CHASSIS ASSY.	STAGE 160 120V DOM. 0054241000	STAGE 160 230V EUR. 0054242000	STAGE 160 230V UK 0054243000	STAGE 160 240V AUS. 0054244000	STAGE 160 100V JPN. 0054245000

29	1	0056545000	WIRE SET SPKR STAGE 100/160
28	5	0053480000	WASHER FLAT .442x.692 NI
27	5	0053479000	NUT HEX 7/16x1/8 NI
26	2	0051155000	SCRW SMB #4X3/8 PHP BLX
25	1	0031625000	NUT HOLDER PILOT LIGHT 11/16-27
24	1	0038900000	SCRW TF 6-32X1/4 PHP ZI
23	1	SEE MATRIX	WIRE SET
22	1	0026116000	BUSHING SR .500x.063x7/16 BLK
21	1	0021709000	BUSHING SR .437x.062x13/32 BLK
20	1	0054642000	CONNECTOR IEC SNAP IN
19	1	SEE MATRIX	SWITCH
18	1	0025722000	CABLE REVERB 1100mm
17	1	0054798000	JEWEL ASSY LED
16	11	0053986000	KNOB ROTARY SS W/CHR INSERT
15	7	0002850000	SCRW TF 8-32x3/4 HWH SLTD ZI
14	1	0039203000	HEATSINK BAR STAGE 112SE
13	1	0028937000	SCRW TF 6-32x5/8 PHP ZI TAPTY
12	1	0025936000	STANDOFF NYL PCB SNAP 3/8" NAT
11	1	SEE MATRIX	FUSE
10	1	0054254000	PCB ASSY STAGE 160
9	4	0030007000	WSHR LCK INTL Bx.330x.02 ZI
8	4	0028591000	NUT ACORN 8-32
7	1	0028564000	END BELL XFMR 185 SERIES
6	1	SEE MATRIX	XFMR
5	1	0013020000	LABEL GROUNDING SEMKO
4	1	SEE MATRIX	LABEL
3	1	0054251000	PANEL REAR STAGE 160
2	1	0054250000	FRONT PANEL STAGE 160
1	1	0054249000	CHASSIS STAGE 160
ITEM	QTY.	PART NO.	DESCRIPTION

ENGINEER  
LEWIS

DRAWN  
GOOLER

DATE  
10/7/98

DFT. ENG. ENG.  
DATE DATE DATE  
2/29/00 2/29/00 2/29/00

APPROVED  
DATE  
2/28/00

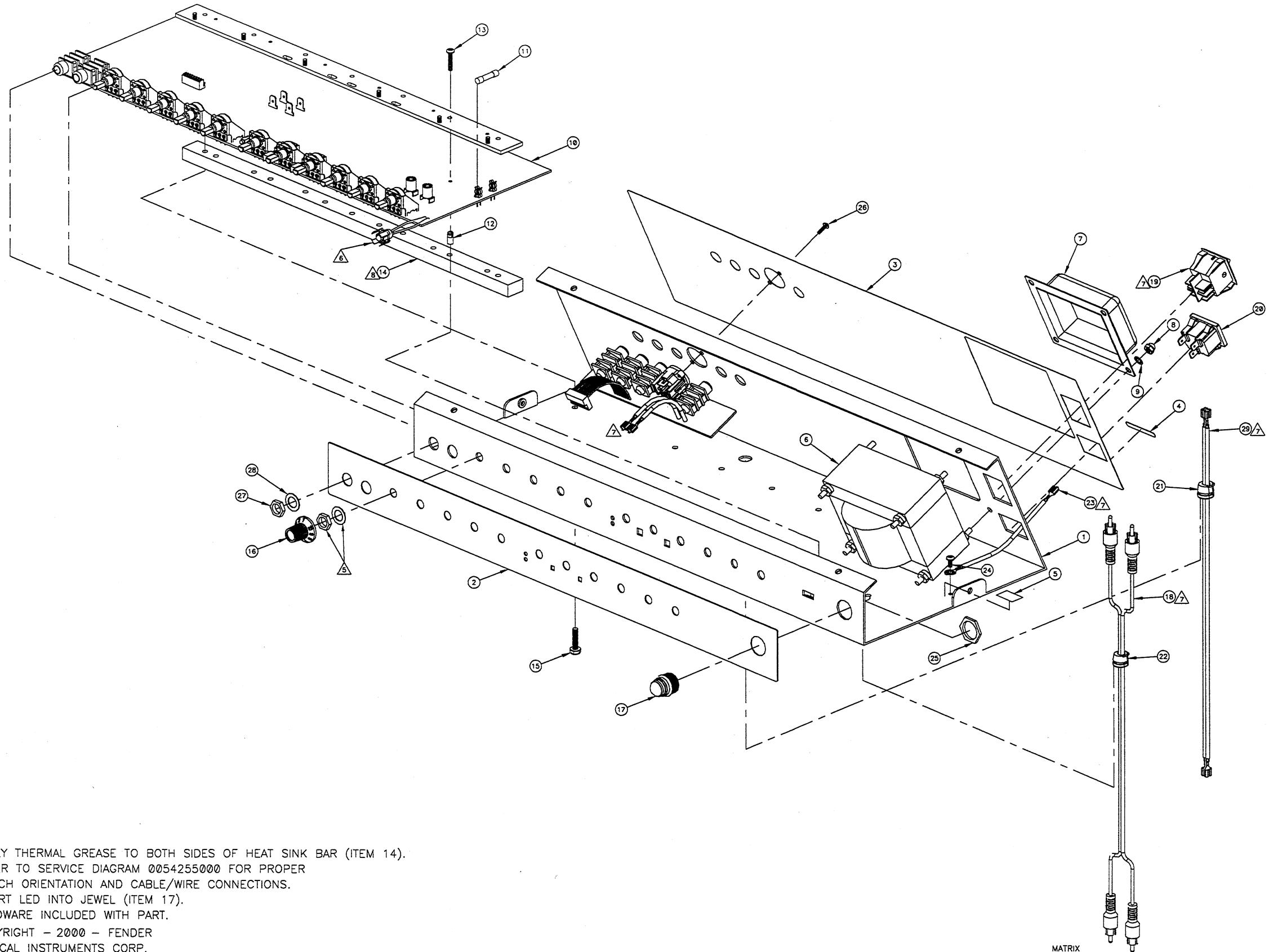
TITLE  
CHASSIS ASSEMBLY  
STAGE 160

Fender  
FENDER MUSICAL INSTRUMENTS CORP.  
CORONA, CALIFORNIA U.S.A.

SHEET	SIZE	DRAWING NUMBER	REV.
1/1	D	0054241000	B
SCALE		MASTER/ASSEMBLY	
N/A			



REV	EC NUMBER	BY	DATE/CHANGE
A	PR 401	GHG	11/4/98
B	PR 453	JR	2/29/2000



29	1	0056545000	WIRE SET SPKR STAGE 100/160
28	6	0053480000	WASHER FLAT .442x.692 NI
27	6	0053479000	NUT HEX 7/16x1/8 NI
26	2	0051155000	SCRW SMB #4X3/8 PHP BLX
25	1	0031625000	NUT HOLDER PILOT LIGHT 11/16-27
24	1	0038900000	SCRW TF 6-32X1/4 PHP ZI
23	1	SEE MATRIX	WIRE SET
22	1	0026116000	BUSHING SR .500x.063x7/16 BLK
21	1	0021709000	BUSHING SR .437x.062x13/32 BLK
20	1	0054642000	CONNECTOR IEC SNAP IN
19	1	SEE MATRIX	SWITCH
18	1	0025722000	CABLE REVERB 1100mm
17	1	0054798000	JEWEL ASSY LED
16	11	0053986000	KNOB ROTARY SS W/CHR INSERT
15	7	0028500000	SCRW TF 8-32x3/4 HWH SLTD Z1
14	1	0039203000	HEATSINK BAR STAGE 112SE
13	1	0028937000	SCRW TF 6-32x5/8 PHP ZI TAPTY
12	1	0025936000	STANDOFF NYL PCB SNAP 3/8" NAT
11	1	SEE MATRIX	FUSE
10	1	0054253000	PCB ASSY STAGE 100 AMP
9	4	0030007000	WSHR LCK INTL 8x.330x.02 Z1
8	4	0028591000	NUT ACORN 8-32
7	1	0028564000	END BELL XFMR 185 SERIES
6	1	SEE MATRIX	XFMR
5	1	0013020000	LABEL GROUNDING SEMKO
4	1	SEE MATRIX	LABEL
3	1	0054248000	PANEL REAR STAGE 100
2	1	0054247000	FRONT PANEL STAGE 100
1	1	0054246000	CHASSIS STAGE 100
ITEM	QTY.	PART NO.	DESCRIPTION

ENGINEER  
LEWIS

DRAWN  
GOOLER

DATE  
10/6/98

DATE DATE DATE  
2/29/00 2/29/00 3/2/00

APPROVED  
DL

DATE  
2/29/00

TITLE  
CHASSIS ASSEMBLY  
STAGE 100

Fender  
FENDER MUSICAL INSTRUMENTS CORP.  
CORONA, CALIFORNIA U.S.A.

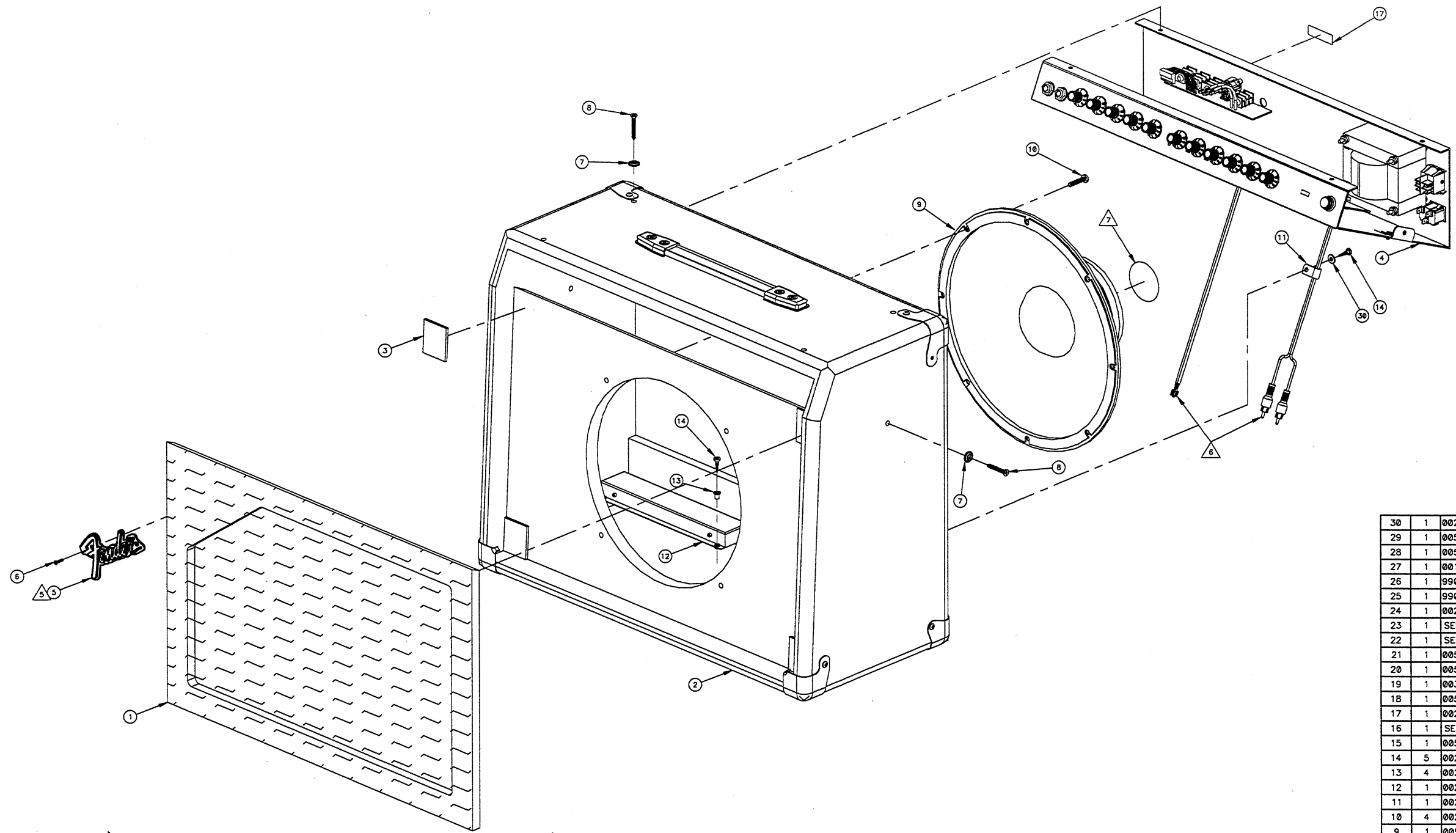
SHEET	SIZE	DRAWING NUMBER	REV.
1/1	D	0054236000	B
SCALE	N/A	MASTER/ASSEMBLY	

- ▲ APPLY THERMAL GREASE TO BOTH SIDES OF HEAT SINK BAR (ITEM 14).
  - ▲ REFER TO SERVICE DIAGRAM 0054255000 FOR PROPER SWITCH ORIENTATION AND CABLE/WIRE CONNECTIONS.
  - ▲ INSERT LED INTO JEWEL (ITEM 17).
  - ▲ HARDWARE INCLUDED WITH PART.
4. COPYRIGHT - 2000 - FENDER MUSICAL INSTRUMENTS CORP.
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1. DO NOT SCALE DRAWING.
- NOTES: UNLESS OTHERWISE NOTED

MATRIX

23	WIRE SET	0054258000	0054262000	0054262000	0054262000
19	SWITCH	0039236000	0040582000	0040582000	0039236000
11	FUSE	0053884000	0020795000	0020795000	0053884000
6	XFMR	0039129000	0039084000	0039084000	0039084000
4	LABEL, VOLTAGE	-	0050505000	0050505000	0050507000
CHASSIS ASSY.		STAGE 100 120V DOM. 0054236000	STAGE 100 230V EUR. 0054237000	STAGE 100 230V UK 0054238000	STAGE 100 240V AUS. 0054239000

REV	EC NUMBER	BY	DATE/MO/YR
A	PR 401	GHG	11/5/98
B	EC 2277 ADD NOTE 7 AND ITEM 30	JR	07/12/99



(N.S.)=NOT SHOWN

ITEM	QTY.	PART NO.	DESCRIPTION
30	1	0022327000	WSHR FLAT 8X7/16 NI
29	1	0050753000	FOAM STYRENE BOTTOM (N.S.)
28	1	0050752000	FOAM STYRENE TOP (N.S.)
27	1	0010032000	BAG POLY BOX BTM 23X17X40 .002 (N.S.)
26	1	9903320000	BAG POLY ZIP 10X13 2M (N.S.)
25	1	9903311400	BAG JIFFY #1 7-1/4x12 (N.S.)
24	1	0028513000	CARTON STG112/PRCR/ROCPRO 1000 (N.S.)
23	1	SEE MATRIX	REGISTRATION CARD (N.S.)
22	1	SEE MATRIX	POWER CORD (N.S.)
21	1	0054255000	SVC DIAG, COMB. STAGE 100/160 (N.S.)
20	1	0054256000	MANUAL, OWNER'S STAGE 100/160 (N.S.)
19	1	0036226000	TAG HANGING FTSW (N.S.)
18	1	0053454000	STICKER, BUMPER FEND 1946 (N.S.)
17	1	0029816000	LABEL SERIAL MEXICO
16	1	SEE MATRIX	TAG WARRANTY 5 YR FENDER NEW (N.S.)
15	1	0050419000	FOOTSWITCH 2 BTN CH DRV/MDRV (N.S.)
14	5	0029828000	SCRW PB 8x3/4 PHP ZI
13	4	0029821000	EYELET RFLNGD .215 OD x.315 L
12	1	0028055000	REVERB UNIT 800 ohm 8EB2C1B DN
11	1	0022491000	CLAMP CABLE NYL SCRW MNT 5/16
10	4	0026577000	SCRW M 10-32X1 PHP ZI
9	1	0054420000	SPKR 12" 8ohm G12T-100 CELESTION
8	6	0036199000	SCRW M 8-32x1-3/16 OHP BLX CP
7	6	0029527000	WSHR FNSH 8-5/8 FLNGD BLX WX
6	2	0018113000	SCRW SMA 4x1/2 OHP BLX
5	1	0029906000	NAMEPLATE FENDER GENERIC SMALL
4	1	SEE MATRIX	CHASSIS ASSY.
3	0.167	0029086000	VELCRO STRIP HOOK 1.5" wd BLK
2	1	0040025000	CAB ASSY STAGE 100/112SE/RP1000
1	1	0040024000	GRILLE ASSY STAGE 100/112SE

- ▲ LABEL INCLUDED WITH SPEAKER. ORIENT LABEL FOR RIGHT READING.
- ▲ REFER TO SERVICE DIAGRAM 0054255000 FOR PROPER WIRE/CABLE CONNECTIONS.
- ▲ REFER TO CAB. ASSY. DWG. 0040025000 FOR PROPER LOCATION.

- 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

MATRIX

	0054387000	0047251000	0047249000	0047250000	0053997000
REGISTRATION CARD	0054387000	-	-	-	-
POWER CORD	0047248000	0047251000	0047249000	0047250000	0053997000
TAG WARRANTY	0053412000	-	-	-	-
CHASSIS ASSY.	0054236000	0054237000	0054238000	0054239000	0054240000
END ITEM ASSY.	STAGE 100 120V DOM. 0226700010	STAGE 100 230V EUR. 0226760010	STAGE 100 230V U.K. 0226740010	STAGE 100 240V AUST. 0226730010	STAGE 100 100V JAP. 0226770010

ENGINEER  
LEWIS

DRAWN  
GOOLER

DATE  
10/15/98

DFT. ENG. ENG.  
DATE DATE DATE  
7/12/99 7/13/99

APPROVED  
abc

DATE  
7/13/99

TITLE  
END ITEM ASSY.  
STAGE 100 AMP

SHEET 1/1  
SCALE N/A

SIZE D

DRAWING NUMBER  
0226700010

REV. B

MASTER