

ACOUSTASONIC SFX

p/n 022-1301-000 (120V)

SERVICE MANUAL

ACOUSTASONIC SFX
(This is the model name for warranty claims)

SERVICE MANUAL

APRIL 1998

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:



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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

Product Release No.: PR 370 *(This is not a model number)*

Part Number: 120V Version : 22-1301
 240V Aust : 22-1331
 230V UK : 22-1341
 230V : 22-1361
 100V : 22-1371

Preamp Section

Input impedance: 10 MΩ (Inst), 3.6kΩ (Mic), 36.4kΩ (Line/Inst)

Tone Controls: Treble: +/- 15dB @ 15kHz(Inst), +/- 15dB @ 15kHz (Mic/Line/Inst)
 Mid: +/- 12dB @ 1kHz (Inst)
 Bass: +/- 12dB @ 100Hz (Inst), +/- 12dB @ 50Hz (Mic/Line/Inst)

Feedback Notch: -10dB from 80Hz to 700Hz (Instrument Channel)

String Dynamics: 0 to -15dB @ 6.3kHz (Instrument Channel)

Phantom Power: +15VDC (Mic)

Power Amplifier Section

Power output: 80 Watts/channel (160W RMS total) into 8 ohms @ <.07% THD, both channels driven

Sensitivity: 1.51V (both channels)

Power Requirements: 120V Version: 120 VAC 60 Hz, 450W
 230V : 230 VAC 50 Hz, 450W

Speaker Complement: One 8 Ohm Special Design 8" Speaker (p/n 051016)
 One 8 Ohm Special Design 10" Speaker (p/n 029753)
 One Piezo Horn (p/n 049260)

Dimensions: Height: 29.5" (73 cm)
 Width: 17.5" (44 cm)
 Depth: 13" (33 cm)

Weight: 62 lbs. (28.2 kg)

NOTE: SHADED ITEMS ARE FOR REFERENCE ONLY

**PREAMP TOP
 PRINTED CIRCUIT BOARD ASSEMBLY**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	033605	CAP AE RDL .15uF 50V 20%	C4
3	028458	CAP AE RDL 1uF 50V 20%	C5 C41 C43
5	028459	CAP AE RDL 2.2uF 50V 20%	C6 C9 C12 C35 C37
10	028467	CAP AE RDL 22uF 50V 20%	C13 C17-18 C21 C33-34 C39-40 C47 C54
1	028485	CAP AE RDL 470uF 16V 20%	C27
10	034788	CAP CR .1uF 50V 20% .2" LS	C28 C60-68
2	051445	CAP CD 22pF 500V 5%	C3 C15
2	051408	CAP CD 47pF 500V 5%	C36 C38
1	051457	CAP CD 100pF 500V 10%	C44
1	051406	CAP CD 220pF 500V 10%	C42
1	051407	CAP CD 390pF 500V 10%	C8
4	051459	CAP CD 560pF 500V 10%	C1-2 C29-30
1	027278	CAP MPF .1uF 63V 10%	C14
3	033477	CAP MPF .68uF 63V 10%	C22-23 C25
1	033579	CAP PFF RDL .0015uF 100V 10%	C51
2	030935	CAP PFF RDL .0018uF 50V 5%	C10-11
2	033582	CAP PFF RDL .0039uF 100V 10%	C50 C53
2	033583	CAP PFF RDL .0047uF 100V 10%	C48-49
1	033586	CAP PFF RDL .0068uF 100V 10%	C7
4	033590	CAP PFF RDL .022uF 100V 10%	C16 C19-20 C52
4	033591	CAP PFF RDL .033uF 100V 10%	C31-32 C45-46
6	027941	CONTROL SNAPIN 50k B TAPER	R5 R8-10 R54 R95
1	031089	CONTROL SNAPIN 100k 10C DUAL	R43
1	039053	CONTROL SNAPIN 1M 30A TAPER	R27
2	053563	CONTROL SNAPIN 50k 30C DUAL	R70 R75
2	006260	DIODE 1N4448 SIGNAL LL	D1-2
2	031017	DIODE ZEN 1N5223B 2.7V 5% LL	D17-18
2	016795	IC DUAL OP AMP TL072	U1 U4
1	027404	IC CA3080AE OTA	U3
10	031611	IC DUAL OP AMP PC4560	U2 U5-13
2	053450	JACK 1/4 PCB STEREO R/A	J1 J4
2	049948	LED, RED LONG LEAD LUMEX	D3 D12
2	036178	SPACER LED .5x .1 BRN	D3 D12
1	024937	RES CF 1/4W 5% 10 ohm LL	R114
1	024945	RES CF 1/4W 5% 33 ohm LL	R62
7	024952	RES CF 1/4W 5% 100 ohm LL	R17 R30-31 R33 R66 R69 R111

PARTS LIST

**PREAMP TOP
PRINTED CIRCUIT BOARD ASSEMBLY (CONT)**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
5	024965	RES CF 1/4W 5% 1k LL	R16 R23 R28 R35 R100
5	024971	RES CF 1/4W 5% 2.2k LL	R4 R7 R13 R26 R109
3	024977	RES CF 1/4W 5% 4.7k LL	R1 R32 R107
1	028034	RES CF 1/4W 5% 5.1k LL	R105
28	024981	RES CF 1/4W 5% 10k LL	R6 R14 R24 R37 R39 R41-42 R44-45 R47-49 R51 R53 R64-65 R67-68 R80 R83 R86-92 R106
1	029539	RES CF 1/4W 5% 13k LL	R99
1	024985	RES CF 1/4W 5% 15k LL	R102
3	029006	RES CF 1/4W 5% 20k LL	R15 R81 R85
10	024987	RES CF 1/4W 5% 22k LL	R18-21 R38 R40 R93-94 R98 R112
6	024993	RES CF 1/4W 5% 47k LL	R71-73 R76-78
2	028990	RES CF 1/4W 5% 51k LL	R46 R113
3	024994	RES CF 1/4W 5% 56k LL	R52 R96-97
9	024997	RES CF 1/4W 5% 100k LL	R11 R34 R36 R55-56 R58 R60 R101 R108
2	024999	RES CF 1/4W 5% 150k LL	R12 R110
1	025059	RES CF 1/4W 5% 220k LL	R3
1	025828	RES CF 1/4W 5% 430k LL	R22
4	025065	RES CF 1/4W 5% 470k LL	R29 R57 R74 R79
4	025069	RES CF 1/4W 5% 1M LL	R50 R82 R84 R103
1	025079	RES CF 1/4W 5% 4.7M LL	R25
1	025084	RES CF 1/4W 5% 10M LL	R2
1	015581	RES MF 1/4W 1% 9.53k LL	R61
1	016953	RES MF 1/4W 1% 1.78k LL	R63
1	026549	RES CF 1/2W 5% 1.5k LL	R104
1	028861	RES CF 1/2W 5% 3.3k LL	R119
2	028091	SWITCH PUSH SLFLK SHORT STROKE	S1-2
2	048451	BUTTON PUSH OFF WHITE	S1-2
1	027416	HDR .1 CTR 8 CKT SQ PIN	P5
1	040987	CABLE RIBBON 10 CKT 3.75"	PW4
1	053856	CABLE RIBBON 6 CKT 8"	PW10
1	052096	PCB FAB ACST SFX PRE TOP	

**PREAMP BOTTOM
PRINTED CIRCUIT BOARD ASSEMBLY**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	037943	CAP AE RDL .33uF 50V 20%	C81
6	028459	CAP AE RDL 2.2uF 50V 20%	C200-201 C209 C213-214 C217
9	028467	CAP AE RDL 22uF 50V 20%	C202-203 C208 C210 C212 C218-220 C223
3	028471	CAP AE RDL 47uF 50V 20%	C58-59 C73
1	028474	CAP AE RDL 100uF 25V 20%	C76
1	028492	CAP AE RDL 1000uF 16V 20%	C74
2	028494	CAP AE RDL 1000uF 35V 20%	C56-57
8	034788	CAP CR .1uF 50V 20% .2" LS	C69-72 C75 C77-79
1	051408	CAP CD 47pF 500V 10%	C211
4	051405	CAP CD 120pF 500V 5%	C204-207
1	051407	CAP CD 390pF 500V 10%	C216
1	052003	CAP MPF .1uF 250V 10%	C55
2	033580	CAP PFF RDL .0022uF 100V 10%	C221-222
1	033586	CAP PFF RDL .0068uF 100V 10%	C215
1	027940	CONTROL SNAPIN 50k 15A TAPER	R210
4	027941	CONTROL SNAPIN 50k B TAPER	R217-219 R248
1	031089	CONTROL SNAPIN 100k 10C DUAL	R238
4	006260	DIODE 1N4448 SIGNAL LL	D8-11
1	027329	DIODE ZEN 1N5228B 3.9V 5% LL	D16
7	064089	DIODE 1N4003 LL	D4-7 D13-15
2	025802	FSTN TAB MALE .250x.032 PCB MT	P1 P3
1	026000	FSTN TAB MALE .187x.032 PCB MT	P2
4	051094	FUSE CLIP, PCB 5mm (EXPT)	F1-F2
5	031611	IC DUAL OP AMP PC4560	U14-18
1	013562	IC REGULATOR +15V MC7815CT	U19
1	013564	IC REGULATOR -15V MC7915CT	U20
1	041812	IC REGULATOR +5V MC7805CT	U21
2	039420	SCRW M 4-40X3/8 PHP SS SEMS	at U19-20
2	050849	HEATSINK PCB LEVEL	at U19-20
2	097360	NUT HEX 4-40 EX LOCK	at U19-20
1	051019	XLR, FEMALE, RT ANGLE	J3
2	053450	JACK STEREO R/A	J2 J5
1	024956	RES CF 1/4W 5% 220 ohm LL	R208

PARTS LIST**PREAMP BOTTOM
PRINTED CIRCUIT BOARD ASSEMBLY (CONT)**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	024963	RES CF 1/4W 5% 680 ohm LL	R251
2	024965	RES CF 1/4W 5% 1k LL	R228 R252
3	024971	RES CF 1/4W 5% 2.2k LL	R209 R216 R222
17	024981	RES CF 1/4W 5% 10k LL	R212 R215 R224-225 R231-237 R239 R241-243 R245 R247
1	029006	RES CF 1/4W 5% 20k LL	R213
2	024987	RES CF 1/4W 5% 22k LL	R226-227
1	028990	RES CF 1/4W 5% 51k LL	R240
1	024994	RES CF 1/4W 5% 56k LL	R246
3	024997	RES CF 1/4W 5% 100k LL	R220 R229-230
1	024999	RES CF 1/4W 5% 150k LL	R221
2	025065	RES CF 1/4W 5% 470k LL	R211 R223
2	025069	RES CF 1/4W 5% 1M LL	R214 R244
4	031819	RES MF 1/4W 1% 1.82k LL	R202-203 R206-207
4	031818	RES MF 1/4W 1% 18.2k LL	R200-201 R204-205
2	029722	RES FILM 1W 5% 1k LL	R250 R253
1	028091	SWITCH PUSH SLFLK SHORT STROKE	S3
1	048451	BUTTON PUSH OFF WHITE	S3
1	025751	XSTR NPN 2SC2362K/2SC2389STPS	Q3
1	051447	XSTR PNP 2SB1236	Q1
1	051448	XSTR NPN 2SD1857	Q2
1	048914	CABLE RIBBON 8 CKT 7 IN	PW5
1	052098	PCB FAB ACST SFX PRE BTM	

PARTS LIST**POWER AMP
PRINTED CIRCUIT BOARD ASSEMBLY**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	028460	CAP AE RDL 4.7uF 50V 20%	C101-102 C201-202
1	028467	CAP AE RDL 22uF 50V 20%	C5
4	028471	CAP AE RDL 47uF 50V 20%	C108-109 C208-209
2	037182	CAP AE RDL 6800uF 63V 20%	C3-4
4	034788	CAP CR .1uF 50V 20% .2" LS	C106-107 C206-207
4	051409	CAP CD 68pF 500V 5%	C104-105 C204-205
6	027278	CAP MPF .1uF 63V 10%	C112-114 C212-214
1	052003	CAP MPF .1uF 250V 10%	C2
1	053860	CAP MPF .1uF 250VAC 20%	C1
6	033580	CAP PFF RDL .0022uF 100V 10%	C100 C110-111 C200 C210-211
23	006260	DIODE 1N4448 SIGNAL LL	D5 D100-106 D109-110 D113-114 D200-206 D209-210 D213-214
4	025821	DIODE HV FDH-400 SWITCHING LL	D107-108 D207-208
4	027329	DIODE ZEN 1N5228B 3.9V 5% LL	D115-116 D215-216
4	029045	DIODE 6A 400V 6A4 LEAD FORM	D1-4
2	031635	DIODE ZEN 1N5240B 10V 5% LL	D6-7
4	064089	DIODE 1N4003 LL	D111-112 D211-212
12	025802	FSTN TAB MALE .250x.032 PCB MT	P1-5 P7 P11-16
1	026000	FSTN TAB MALE .187x.032 PCB MT	P6
2	051094	FUSE CLIP PCB 5mm (EXPT)	F1
8	027638	SCRW TF 4-40X3/8 HWHS ZI .1"HD	at Q108-111 Q208-211
5	032908	SCRW TF 6-32X3/8 PHP ZI	at HEATSINK
4	038815	INSULATOR SILICONE TO-3P	at Q110-111 Q210-211
1	053575	HEATSINK PLATE 160W AMPS	
1	051418	THERMAL SENSOR PTC 100 DEG C	RT1
4	051731	RES MF FUSE 1/4W 5% 1k LL	R109-110 R209-210
6	036960	RES MF FUSE 1/4W 5% 47 ohm LL	R123-125 R223-225

PARTS LIST**PARTS LIST****POWER AMP
PRINTED CIRCUIT BOARD ASSEMBLY (CONT)**

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	027750	RES MF FUSE 1/4W 5% 100ohm LL	R111-112 R211-212
4	024937	RES CF 1/4W 5% 10 ohm LL	R119-120 R219-220
4	024942	RES CF 1/4W 5% 22 ohm LL	R104-105 R204-205
2	024947	RES CF 1/4W 5% 47 ohm LL	R5-6
12	024965	RES CF 1/4W 5% 1k LL	R100 R102-103 R107 R132-133 R200 R202-203 R207 R232-233
4	024971	RES CF 1/4W 5% 2.2k LL	R113 R116 R213 R216
4	029455	RES CF 1/4W 5% 2.4k LL	R114-115 R214-215
4	024972	RES CF 1/4W 5% 2.7k LL	R131 R134 R231 R234
2	024977	RES CF 1/4W 5% 4.7k LL	R106 R206
1	024981	RES CF 1/4W 5% 10k LL	R3
4	024986	RES CF 1/4W 5% 18k LL	R101 R108 R201 R208
1	029006	RES CF 1/4W 5% 20k LL	R1
1	024993	RES CF 1/4W 5% 47k LL	R4
1	024997	RES CF 1/4W 5% 100k LL	R2
4	026549	RES CF 1/2W 5% 1.5k LL	R118 R121 R218 R221
4	037354	RES FILM 1W 5% 4.7k LL	R117 R122 R217 R222
4	031628	RES MOX 2W 5% .22 ohm LL	R128-129 R228-229
2	051417	RES MOX 2W 5% 22 ohm LL	R130 R230
1	037845	RES WW 5W 10% 47 ohm	R135
2	014866	XSTR NPN MPSW92 TO-226AE	Q104 Q204
2	014867	XSTR PNP MPSW42 (TO-92)	Q105 Q205
2	016739	XSTR NPN 2N4401 TO-92	Q112 Q212
4	016742	XSTR PNP 2N4403 TO-92	Q1-2 Q113 Q213
6	025751	XSTR NPN 2SC2362K/2SC2389STPS	Q100-102 Q200-202
2	025752	XSTR PNP 2SA1038STPS	Q103 Q203
2	051447	XSTR PNP 2SB1236	Q107 Q207
2	051448	XSTR NPN 2SD1857	Q106 Q206
2	028759	XSTR PNP 2SA1306A TO-220P	Q109 Q209
2	028760	XSTR PNP 2SC4793/2SC3298B	Q108 Q208
2	051724	XSTR, PNP POWER MJW21191 TO-247	Q111 Q211
2	051725	XSTR NPN POWER MJW21192 TO-247	Q110 Q210
1	027413	HDR .1 CTR 6 CKT SQ PIN	P10
1	053407	PCB FAB ACST SFX PWR AMP	

CHASSIS ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
	052091	CHASSIS ASSY, ACOUSTASONIC SFX	DOM 120V
	052092	CHASSIS ASSY, ACOUSTASONIC SFX	EUR 230V
	052093	CHASSIS ASSY, ACOUSTASONIC SFX	UK 230V
	052094	CHASSIS ASSY, ACOUSTASONIC SFX	AUST 240V
	052095	CHASSIS ASSY, ACOUSTASONIC SFX	JAP 100V
1	051950	CHASSIS, ACST SFX AMP	
1	053402	PANEL, FRONT, ACST SFX AMP	
1	053403	PANEL, REAR, ACST SFX AMP	
1	051897	XFMR PWR 160W 120V	DOM 120V ONLY
1	051898	XFMR PWR 160W 230V	ALL 230V/240V
1	053405	XFMR PWR 160W 100V	100V ONLY
1	052097	PCB ASSY ACST SFX PREAMP TOP	
1	052099	PCB ASSY ACST SFX PREAMP BTM	
1	053408	PCB ASSY ACST SFX PWR AMP	
1	053567	PCB ASSY DSP ACST SFX	
1	053885	FUSE QA 20mmX5mm 250V 5A UL/CSA	100V/120V UNITS ONLY
1	020795	FUSE QA 20mmx5mm 250v 2.5A	230V/240V UNITS ONLY
2	013112	FUSE TD 20mmx5mm 250v 1A	ALL
5	051404	STANDOFF, NYLON BLACK	@ DSP/pre PCB
3	016440	STNDOFF RND AL 6-32x1x1/4	@ pwr amp PCB
1	048974	HEATSINK EXTRUDED BXR200	
6	031184	SCRW M6-32x1/4 PHPS BLX ITLW	pwr amp PCB mtg
9	027636	SCRW TF 8-32x5/8 HWH BLX	@ HTSNK/XFMR
6	017716	SCRW 8-32x1/2 PHP BLX	@ HEATSINK
2	051155	SCRW #4 HI LO	@ XLR
1	038900	SCRW TF 6-32X1/4 PHP ZI	at ground lug
16	051017	KNOB ROTARY BRN/WHT	@ CONTROLS
1	053615	KNOB ROTARY SS W/ ARROW	@ DSP
1	039236	SWITCH ROCKER DPST PSEUDO-IEC	100V/120V UNITS ONLY
1	040582	SWITCH DPST .250 TAB GLOBAL	230V/240V UNITS ONLY

PARTS LIST

PARTS LIST

CHASSIS ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	026541	CABLE ASSY PWR W/.250 TAB 120V	120V DOM UNITS ONLY
1	038602	CABLE ASSY PWR AUST .250 TAB	240V AUST UNITS ONLY
1	040993	CABLE ASSY PWR 5A U.K..250 TAB	230V UK UNITS ONLY
1	033331	CABLE ASSY PWR 220/240v	230V EUR UNITS ONLY
1	048463	CABLE ASSY PWR .250 100v	100V JAP UNITS ONLY
1	026038	BUSHING SR .625x.062x37/64 BLK	for PWR CABLE 100V/120V
1	010401	BUSHING SR .625x.125x37/64 WHT	for PWR CABLE 230V/240V
1	012560	BUSHING SNAP 5/8x27/32 BLK	for spkr cables

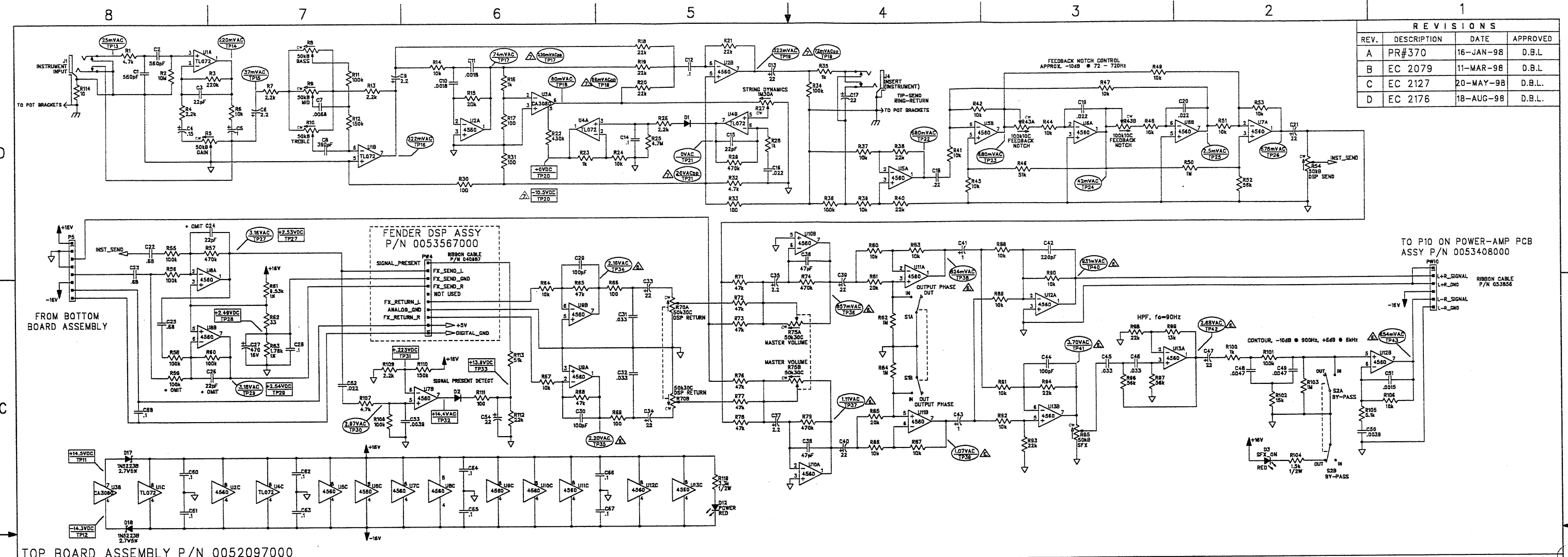
CABINET ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
0.5	036797	CLOTH GRILLE TAN/BRN	estimated qty
0.3	029085	VELCRO STRIP LOOP 1.5"wd BLK	at GRILLES
0.3	029086	VELCRO STRIP HOOK 1.5"wd BLK	
1.7	036796	TOLEX BROWN COVERING	
0.1	040005	TAPE ALUM 7"x60YDS	FOIL SHIELD
1	037121	HANDLE STRAP BRN	
1	032524	INSERT HANDLE	
2	025395	HANDLE CAP 1 HOLE NI	
2	022244	SCRW M 10-32x1-1/8 OHP NI	at handle caps
4	026571	SCRW SMAB 8X5/8 THP NI	at corners
4	026625	SCRW WOOD 8x1 FH	at feet
10	021972	NUT T 10-32x3/4 STR 3 PRNG BLX	
4	026566	CORNER 2 HOLE w/TAB NI	at bottom, front of cab
4	019275	INSET GLIDE CUSHION 1.27 DIA.	at feet
4	019276	GLIDE CAB 1.24X.335 NI	feet

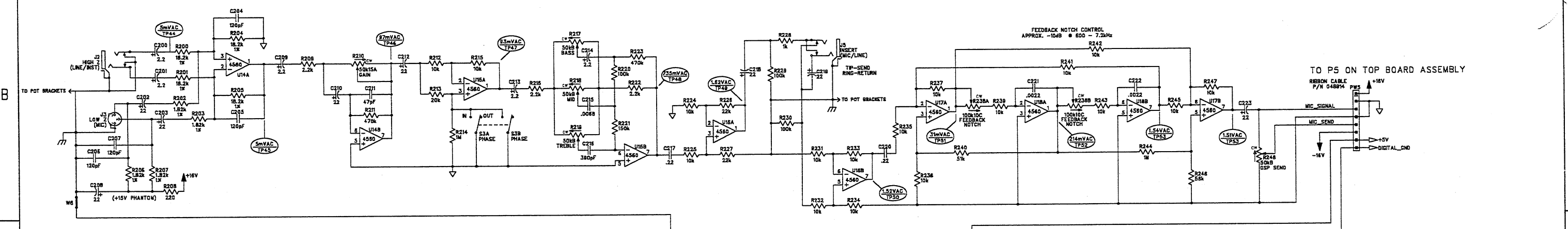
UNIT ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	051642	CAB ASSY, ACST SFX AMP	
	052091	CHS ASSY ACST SFX AMP 120V DOM	
	052092	CHS ASSY ACST SFX AMP 230V EUR	
	052093	CHS ASSY ACST SFX AMP 230V U.K.	
	052094	CHS ASSY ACST SFX AMP 240V AUST.	
	052095	CHS ASSY ACST SFX AMP 100V JAP	
2	052000	GRILLE, SIDE ACST SFX AMP	
1	052001	GRILLE, REAR ACST SFX AMP	
.01	036650	PIN ESCUTCHEON #18x3/8 NI	plate pin (LB)
14	016627	SCRW SMA 8x3/4 OHP BLX	@ grilles
6	053483	SCRW TF 8-32X1-3/8 #6 OHP NI SEMS	CHS
8	026577	SCRW M 10-32X1 PHP BLX	@ SPEAKERS
4	9904101110	SCREW PB 8x5/8 PHP BLX	@ HORN
4	037210	SCREW SMA 2x3/8 OHP NI	@ LOGO
14	029527	WSHR FNSh 8-5/8 FLNGD BLX WX	@ grilles
12	051098	TAPE VINYL NITRITE W/ ADHESIVE	(FT) grille edge
1	051016	SPEAKER 8" 8 OHM HI FI ACST	FRONT
1	029753	SPEAKER 10" 8 ohm PRCR/10WDG	SIDE
1	049260	HORN CERAMIC PIEZO KXR 60	
1	036795	NAMEPLATE 62 FENDER	
1	051871	NAMEPLATE ACOUSTASONIC AMP	

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR#370	16-JAN-98	D.B.L.
B	EC 2079	11-MAR-98	D.B.L.
C	EC 2127	20-MAY-98	D.B.L.
D	EC 2176	18-AUG-98	D.B.L.



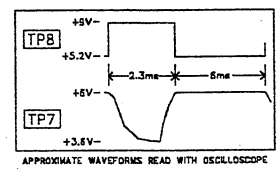
TOP BOARD ASSEMBLY P/N 0052097000



TO POWER AMP BOARD (ASSY P/N 0053408000)

POWER XFMR MATRIX

VOLTAGE	P/N
120V	0051897000
230V-240V	0051898000
100V	0053405000



BOTTOM BOARD ASSEMBLY P/N 0052099000

5. AC AND DC VOLTAGES READ TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
 UNIT AT RATED LINE VOLTAGE
 ALL SWITCHES (S1-S3) IN OUT POSITION
 NO INPUT SIGNAL (TP1-TP11 ONLY)
 VOLTAGES MAY VARY +/- 20%
- ADDITIONAL CONDITIONS FOR TP13-TP43:
 25mV, 8.3kHz SINEWAVE INPUT SIGNAL AT J1
 INSTR. "GAIN" CONTROL AT "5-1/2" (50% ROTATION)
 "TREBLE", "MID", "BASS" CONTROLS AT "10"
 "STRING DYNAMICS" & "FEEDBACK NOTCH" CONTROLS AT "1"
 "DSP SEND" CONTROL AT "10"
 "SFX", "DSP RETURN", & "MASTER VOLUME" CONTROLS AT "5-1/2" (50% ROTATION)
- ADDITIONAL CONDITIONS FOR TP34 - TP43:
 DSP IN TEST MODE. REFER TO SERVICE DIAGRAM 0053408000 DSP SFX SERIES.
- ADDITIONAL CONDITIONS FOR TP44 - TP54:
 5mV, 1kHz SINEWAVE INPUT SIGNAL AT J2
 "GAIN", "TREBLE", "MID", "BASS" CONTROLS AT "10"
 "FEEDBACK NOTCH" CONTROL AT "10"
4. ALL DIODES 1N4448.
 3. ALL POLARIZED CAPACITORS IN uF; 50V, 20%.
 2. ALL UNPOLARIZED CAPACITORS IN uF; 50V, 10% (OR BETTER).
 1. ALL RESISTORS IN OHMS, 1/4W, 5%.
- NOTES: (UNLESS OTHERWISE NOTED)

ADDITIONAL CONDITIONS FOR TP17-TP21:
 25mV, 8.3kHz SINEWAVE INPUT SIGNAL AT J1
 INSTR. "GAIN" CONTROL AT "5-1/2" (50% ROTATION)
 "TREBLE", "MID", "BASS" CONTROLS AT "10"
 "STRING DYNAMICS" CONTROL AT "10"
 TP17-TP18, & TP21 READ WITH AN OSCILLOSCOPE (VOLTS PEAK TO PEAK)

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.

CHECKED BY: *B. West*
 DATE: 20-AUG-98
 APPROVED BY: *D.L.*
 DATE: 8/20/98
 DRAWN BY: D. LEWIS
 ENGR: D. LEWIS
 DATABASE FILE: Z370PRE.SCH

MUSICAL INSTRUMENTS
 2621 Research Drive
 Corona, CA 91720 USA

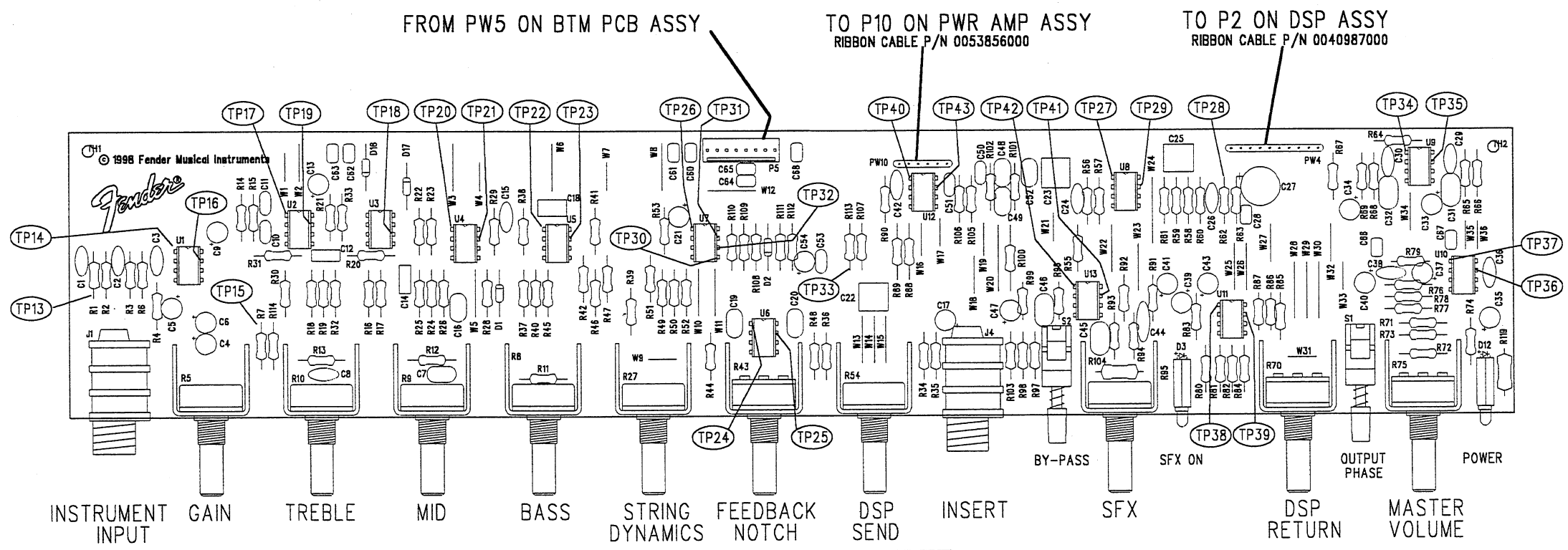
TITLE: SERVICE DIAGRAM, COMBINED (schematic)
 ACOUSTASONIC SFX AMPLIFIER
 PREAMP

SIZE: D
 DRAWING NUMBER: 0053401000
 RELEASE DATE: 16-JAN-98
 SHEET: 1 OF 3

INSTANCES NOT USED: R115-189, C82-189, P6-8
 LAST INSTANCES: R233, C223, D18, Q3, U21, P(W)10, J5
 * COMPONENTS R59, C24, C26 NOT STUFFED.

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR#370	16-JAN-98	D.B.L.
B	EC 2079	11-MAR-98	D.B.L.
C	EC 2127	20-MAY-98	D.B.L.
D	EC 2176	18-AUG-98	D.B.L.



FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z370TOP.PCB DATE: 18-AUG-98

- 3. COMPONENTS R59, C24, C26 NOT STUFFED.
- 2. SEE SHEET 3 FOR TP1-10 AND TP44-54.
- 1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.

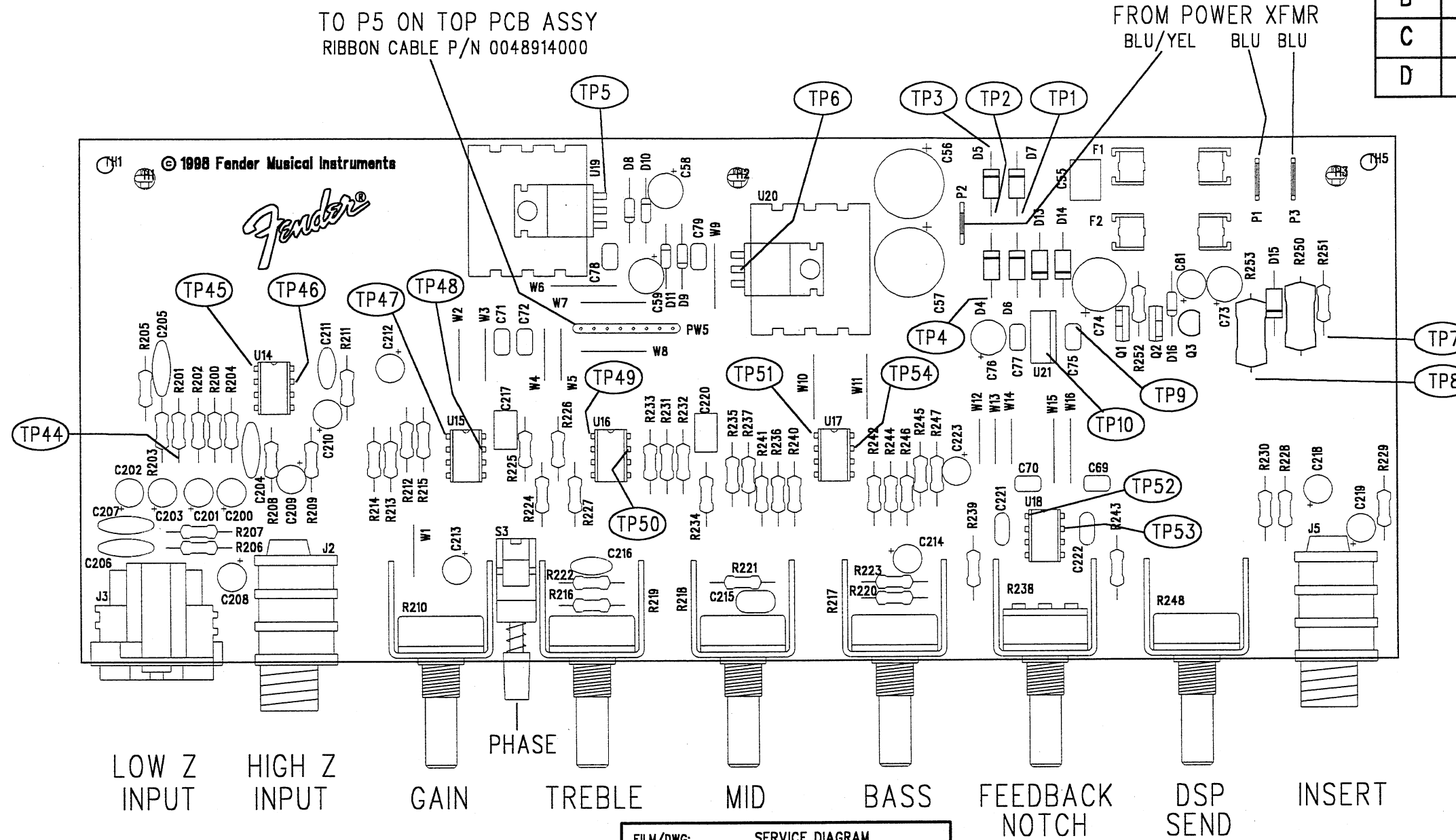
NOTES: (UNLESS OTHERWISE NOTED)

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CHECKED BY: <i>B. Den</i> DATE: <i>20-AUG-98</i>		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) ACOUSTASONIC SFX AMPLIFIER PREAMP TOP	
APPROVED BY: <i>dlc</i> DATE: <i>8/20/98</i>		SIZE: C	DRAWING NUMBER: 0053401000
DRAWN: D. LEWIS ENGR: D. LEWIS		RELEASE DATE: 16-JAN-98	SHEET 2 OF 3
DATABASE FILE: Z370TOP.PCB			

8 7 6 5 4 3 2 1

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
A	PR#370	16-JAN-98	D.B.L.
B	EC 2079	11-MAR-98	D.B.L.
C	EC 2127	20-MAY-98	D.B.L.
D	EC 2176	18-AUG-98	D.B.L.



FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z370BTM.PCB DATE: 18-AUG-98

2. SEE SHEET 2 FOR TP11 - TP43 LOCATIONS.
 1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.

NOTES: (UNLESS OTHERWISE NOTED)

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Fender MUSICAL INSTRUMENTS
 2621 Research Drive
 Corona, CA 91720 USA

CHECKED BY: BD
 DATE: 20 Aug '98

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
 ACOUSTASONIC SFX AMPLIFIER
 PREAMP BTM

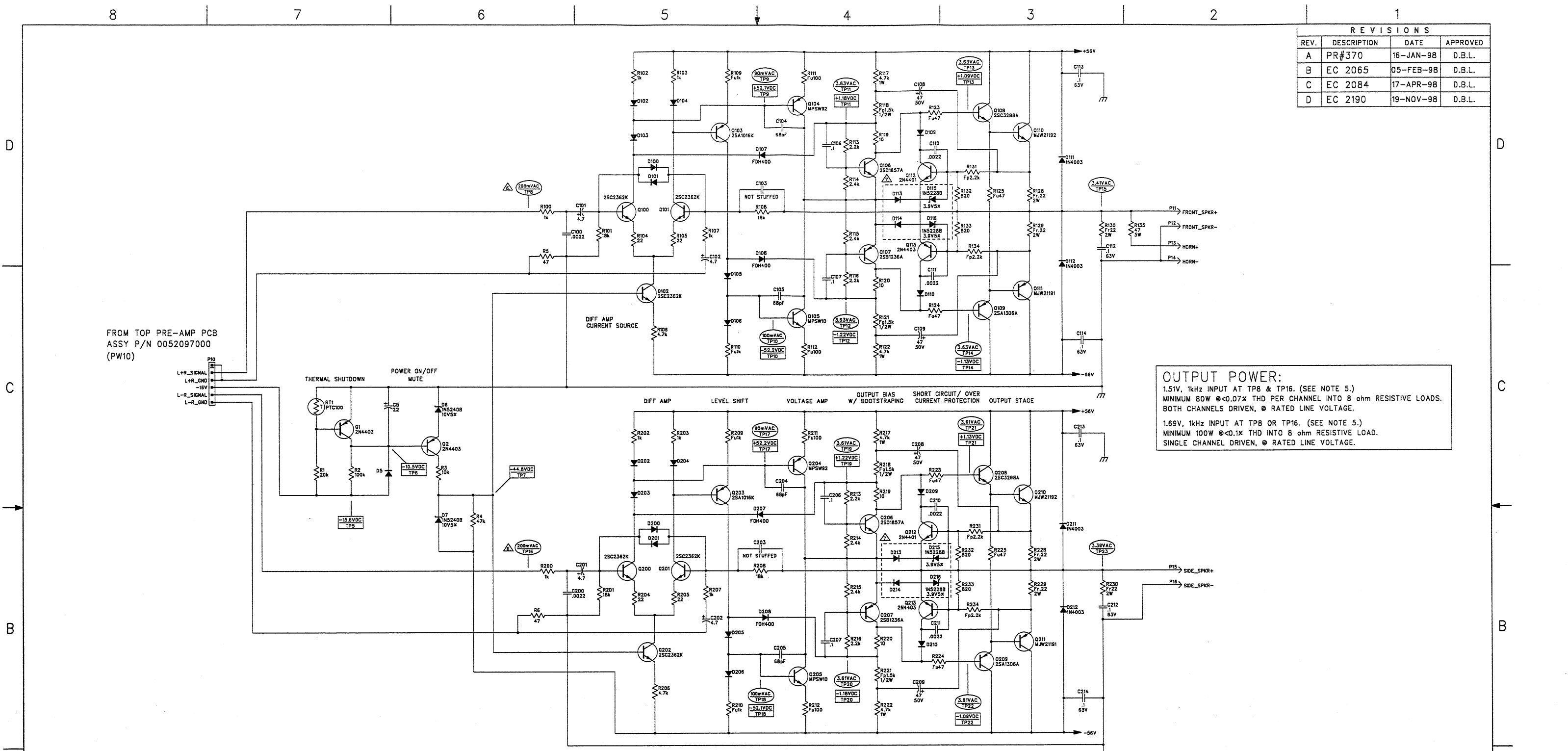
APPROVED BY: dbl
 DATE: 8/20/98

SIZE	DRAWING NUMBER	REV.
B	0053401000	D

DRAWN: D. LEWIS ENGR: D. LEWIS
 DATABASE FILE: Z370BTM.PCB

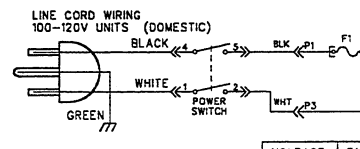
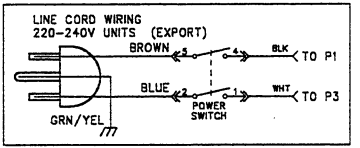
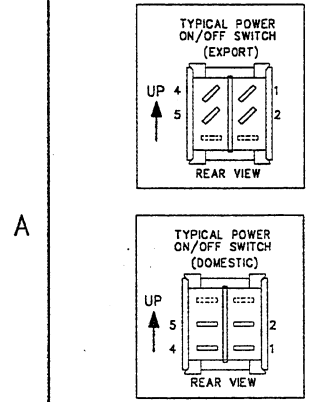
RELEASE DATE: 16-JAN-98 SHEET 3 OF 3

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR#370	16-JAN-98	D.B.L.
B	EC 2065	05-FEB-98	D.B.L.
C	EC 2084	17-APR-98	D.B.L.
D	EC 2190	19-NOV-98	D.B.L.



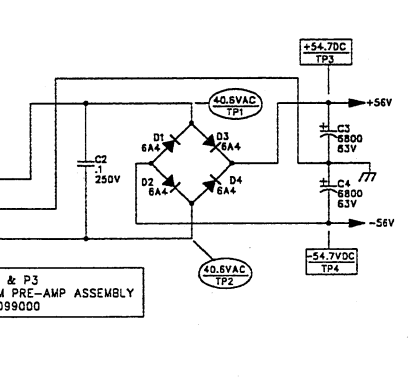
OUTPUT POWER:
 1.51V, 1kHz INPUT AT TP8 & TP16. (SEE NOTE 5.)
 MINIMUM 80W @ <0.07% THD PER CHANNEL INTO 8 ohm RESISTIVE LOADS.
 BOTH CHANNELS DRIVEN, @ RATED LINE VOLTAGE.
 1.69V, 1kHz INPUT AT TP8 OR TP16. (SEE NOTE 5.)
 MINIMUM 100W @ <0.1% THD INTO 8 ohm RESISTIVE LOAD.
 SINGLE CHANNEL DRIVEN, @ RATED LINE VOLTAGE.

FROM TOP PRE-AMP PCB
 ASSY P/N 0052097000
 (PW10)



VOLTAGE	P/N
100V	0053405000
120V	0051897000
220V-240V	0051898000

VOLTAGE	F1 RATING
100-120V	F5A 125V
220-240V	F2.5A 250V



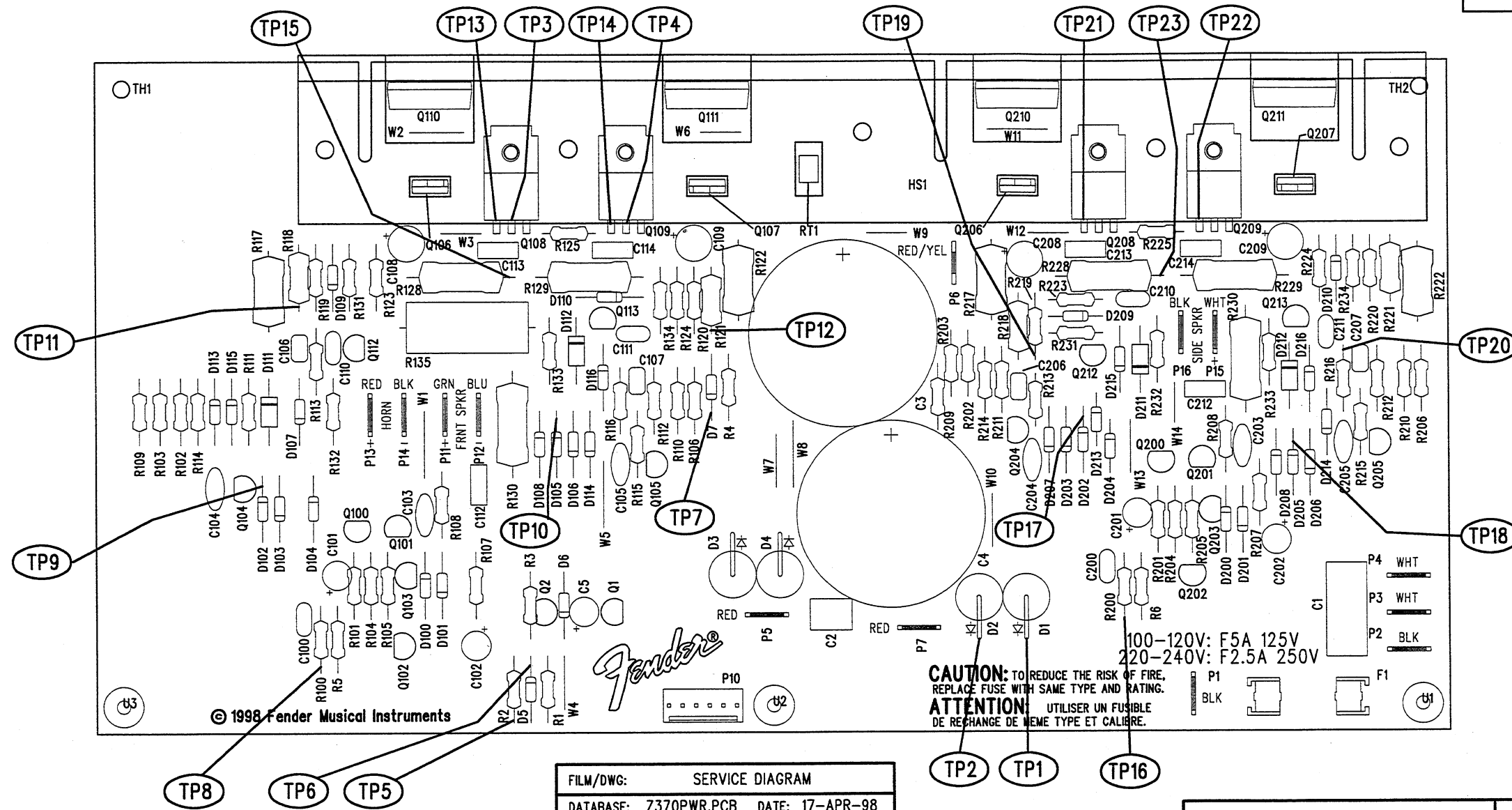
COMPONENTS: C103, C203, D113-D116, D213-D216 NOT STUFFED.
 INSTANCES NOT USED: R7-R99, R136-R199, C6-C99, D8-D99,
 C115-C199, D117-D199, P8-P9, O3-O99
 LAST INSTANCES: R230, C214, D216, Q213, P16

- COMPONENTS ENCLOSED IN DASHED LINES NOT STUFFED.
- AC AND DC VOLTAGES READ TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
 UNIT AT RATED LINE VOLTAGE.
 PRE-AMP DISCONNECTED (P10).
 8 ohm RESISTIVE LOADS CONNECTED AT P11-P12, P15-P16
 -18VDC REFERENCE CONNECTED AT TP5.
 NO INPUT SIGNAL (TP1-TP7 ONLY).
 ADDITIONAL CONDITIONS FOR TP8-TP23:
 TP8-TP15 ONLY: INPUT 200mV, 1kHz SINEWAVE FROM TP8 (+) TO GND (-).
 TP16-TP23 ONLY: INPUT 200mV, 1kHz SINEWAVE FROM TP16 (+) TO GND (-).
- THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0053409000 AND PCB ASSEMBLY P/N 0053408000.
 - ALL DIODES ARE 1N4448.
 - ALL POLARIZED CAPACITORS IN uF, 20% SOX MINIMUM.
 - ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER, 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
 - ALL RESISTORS IN OHMS, 5% 1/4W.
- NOTES: (UNLESS OTHERWISE NOTED)

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.		MUSICAL INSTRUMENTS 2621 Research Drive Corona, CA 91720 USA	
CHECKED BY: <u>B. D. Lewis</u> DATE: <u>11/19/98</u>	TITLE: SERVICE DIAGRAM, COMBINED (schematic) ACOUSTASONIC SFX AMPLIFIER POWER AMP	SIZE: <u>D</u> DRAWING NUMBER: <u>0053409000</u>	REV. <u>D</u>
DRAWN: <u>D. LEWIS</u> ENGR: <u>D. LEWIS</u> DATABASE FILE: <u>Z370PWR.SCH</u>	RELEASE DATE: <u>16-JAN-98</u>	SHEET: <u>1</u> OF <u>2</u>	

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
A	PR#370	16-JAN-98	D.B.L.
B	EC 2065	04-FEB-98	D.B.L.
C	EC 2084	17-APR-98	D.B.L.
D	EC 2190	19-NOV-98	D.B.L.



FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z370PWR.PCB DATE: 17-APR-98

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.

Fender MUSICAL INSTRUMENTS
 2621 Research Drive
 Corona, CA 91720 USA

CHECKED BY: B Pen
 DATE: 19-NOV-98

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
 ACOUSTASONIC SFX AMPLIFIER
 POWER AMP

APPROVED BY: DBL
 DATE: 11/19/98

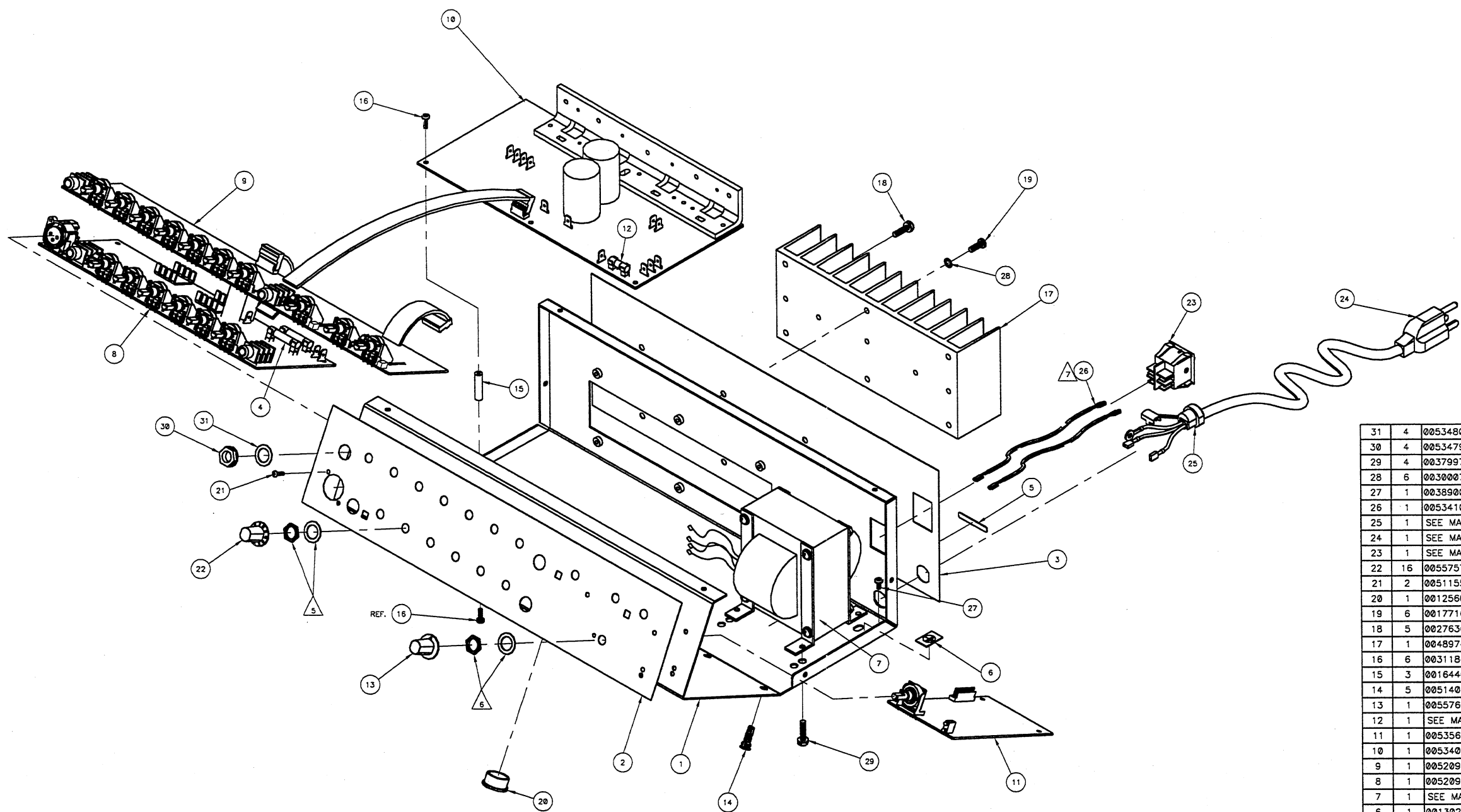
SIZE	DRAWING NUMBER	REV.
B	0053409000	D

DRAWN: D. LEWIS ENGR: D. LEWIS
 DATABASE FILE: Z370PWR.PCB

RELEASE DATE: 16-JAN-98 SHEET 2 OF 2

2. COMPONENTS C103, C203, D113-D116, & D213-D216 NOT STUFFED.
 1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.
 NOTES: (UNLESS OTHERWISE NOTED)

REV	EC NUMBER	BY	DATE/ARCHIVE
B	EC 2116	KD	05-12-98 ARCHIVE
C	EC 2306A CHG XFMR ADD NUT, SCREW	JR	3/07/2000 ARCHIVE
D	EC 2373 CHG ITEMS 13 & 22	JR	04/11/2000



ITEM	QTY.	PART NO.	DESCRIPTION
31	4	0053480000	WASHER FLAT .442 X.692 NI
30	4	0053479000	NUT HEX 7/16 20X1/8 NI
29	4	0037997000	SCRW TF 10-32x5/8 HWHS BLX
28	6	0030007000	WSHR LCK INTL 8x.330x.02 ZI
27	1	0038900000	SCRW TF 6-32X1/4 PHP ZI
26	1	0053410000	WIRE SET SFX AMP CHS
25	1	SEE MATRIX	STRAIN RELIEF
24	1	SEE MATRIX	CABLE ASSY PWR W/.250 TAB
23	1	SEE MATRIX	SWITCH
22	16	0055757000	KNOB BROWN W/CHR
21	2	0051155000	SCRW SMB #4X3/8 PHP BLX
20	1	0012560000	BUSHING SNAP 5/8x27/32 BLK
19	6	0017716000	SCRW 8-32x1/2 PHP BLX
18	5	0027636000	SCRW TF 8-32x5/8 HWH BLX
17	1	0048974000	HEATSINK EXTRUDED SFX/ACST
16	6	0031184000	SCRW M6-32x1/4 PHPS BLX ITLW
15	3	0016440000	STNDOFF RND AL 6-32x1x1/4
14	5	0051404000	STANDOFF NYLON BLK .375
13	1	0055760000	KNOB ARROW W/CHR BROWN
12	1	SEE MATRIX	FUSE QA 20mm X 5mm (5A DOM., 2.5A EXP.)
11	1	0053567008	PCB ASSY DSP ACST SFX
10	1	0053408004	PCB ASSY ACST SFX PWR A
9	1	0052097004	PCB ASSY ACST SFX PRE A TOP
8	1	0052099004	PCB ASSY ACST SFX PRE A BTM
7	1	SEE MATRIX	XFMR, POWER
6	1	0013020000	LABEL GROUNDING SEMKO
5	1	SEE MATRIX	LABEL, VOLTAGE
4	2	0013112000	FUSE TD 20mmx5mm 250v 1A
3	1	0056447000	PANEL REAR ACST SFX
2	1	0053402000	PANEL FRONT ACST SFX
1	1	0056446000	CHASSIS ACOUSTASONIC SFX AMP

- ⚠ TWIST WIRES TOGETHER.
 - ⚠ NUT AND WASHER INCLUDED WITH ENCODER AS REFERENCED ON PCB ASSY.
 - ⚠ NUT AND WASHER INCLUDED WITH POTENTIOMETERS AS REFERENCED ON PCB ASSY.
 - 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						
25	STRAIN RELIEF	0026038000	0010401000	0010401000	0010401000	0026038000
24	CABLE ASSY PWR	0026541000	0033331000	0040993000	0038602000	0048463000
23	SWITCH	0039236000	0040582000	0040582000	0040582000	0039236000
12	FUSE	0053885000	0020795000	0020795000	0020795000	0053885000
7	XFMR, POWER	0053886000	0053888000	0053888000	0053888000	0053887000
6	LABEL, VOLTAGE	NONE	0050505000	0050506000	0050506000	0050507000
	CHASSIS ASSEMBLY	ACOUSTASONIC SFX 120V DOM. 0052091000	ACOUSTASONIC SFX 230V EUR. 0052092000	ACOUSTASONIC SFX 230V U.K. 0052093000	ACOUSTASONIC SFX 240V AUST. 0052094000	ACOUSTASONIC SFX 100V JPN. 0052095000

ENGINEER
DAVE LEWIS

DRAWN
H. BOWIE

DATE
10-28-97

DFT. ENG. ENG.
3W MWA C/F

DATE DATE DATE
4/11/00 4/11/00 4/11/00

APPROVED
dBL

DATE
4/12/00

TITLE
CHASSIS ASSEMBLY
ACOUSTASONIC SFX AMP

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

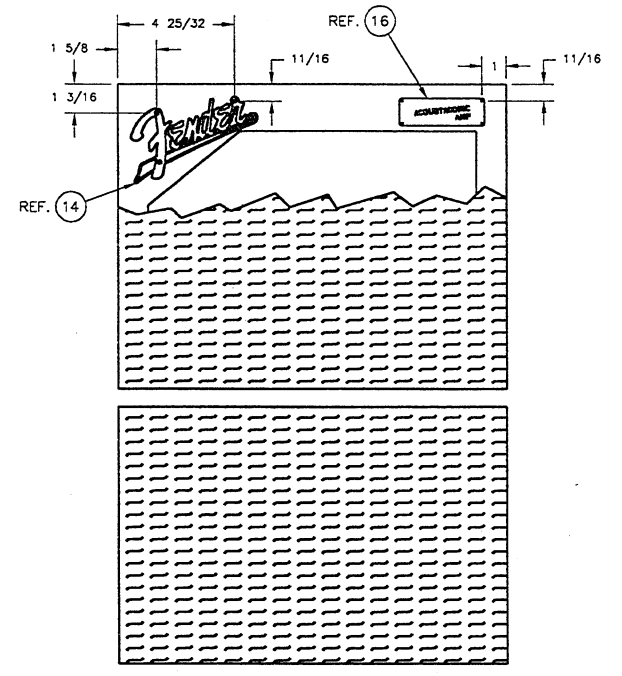
SHEET 1/1
SCALE N/A

DRAWING NUMBER
0052091000

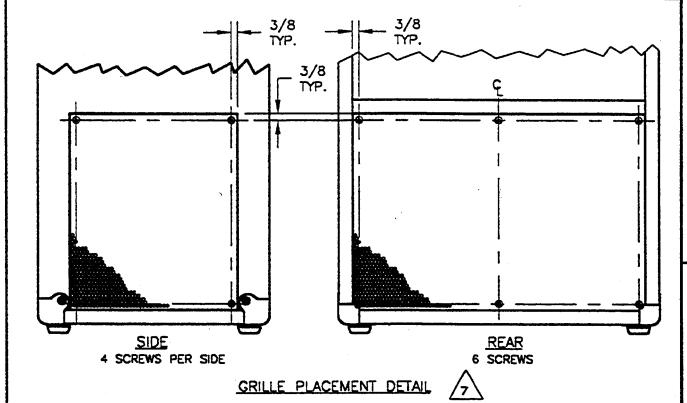
REV. D
MASTER/ASSEMBLY

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REV	EC NUMBER	BY	DATE/ARCHIVE
C	EC 2166	CHG	9/16/98 ARCHIVE
D	MEC 174, MEC 190 MEC 192 ADD NEW PARTS	JR	02/2/99 ARCHIVE
E	EC 2308A CHG XFMR IN CHS ASSY, ADD 2 SCRWs	JR	3/07/2000 ARCHIVE



NAMEPLATE PLACEMENT DETAIL



N.S. = NOT SHOWN

37	.007 RL	0055170000	INSTAMATE PACK FILM (N.S.)
36	0.90 LBS	0055718000	FLEX FOAM PART "B" (N.S.)
35	0.98 LBS	0055717000	FLEX FOAM PART "A" (N.S.)
34	1	9903311400	BAG JIFFY #1 7-1/4x12 (N.S.)
33	1	0029828000	SCRW PB 8x3/4 PHP ZI
32	1	0022491000	CLAMP CABLE NYL SCRW MNT 5/16
31	1	0022327000	WSHR FLAT 8x7/16 NI
30	1	0053569000	SVC DIAG COMB DSP SFX SERIES (N.S.)
29	1	0029816000	LABEL SERIAL MEXICO
28	1	0053404000	WIRE SET SFX AMPS SPKR
27	1	0053406000	CARTON ACOUSTASONIC SFX AMP (N.S.)
26	8	0041509000	FOAM CORNER 5x5x5 2" (N.S.)
25	1	0029757000	BAG POLY 35x22x52 .0015 (N.S.)
24	A/R	0052001000	TAPE VINYL NITRITE W/ ADHESIVE
23	1	9903320000	BAG POLY ZIP 10x13 2M (N.S.)
22	1	0053409000	SVC DIAG COMB ACST SFX PWR (N.S.)
21	1	0053401000	SVC DIAG COMB ACST SFX PRE (N.S.)
20	1	0052002000	MANUAL OWNERS ACST SFX (N.S.)
19	1	0053454000	STICKER BUMPER FEND SINCE 1946
18	1	SEE MATRIX	TAG WARRANTY 5 YR FENDER-NEW (N.S.)
17	4	0036650000	PIN ESCUTCHEON #18x3/8 NI
16	1	0051871000	NAMEPLATE ACOUSTASONIC AMP
15	4	0037210000	SCREW SMA 2x3/8 OHP NI
14	1	0036795000	NAMEPLATE 63FENDER BRN(994092)
13	4	9904101110	SCREW PB 8x5/8 PHP BLX
12	1	0049260000	HORN CERAMIC PIEZO KXR 60
11	8	0026577000	SCRW M 10-32x1 PHP BLX
10	1	0038299000	DECAL SPEAKER GLOBE ROUND
9	1	0029753000	SPKR 10" 8 OHM (099-4810-004)
8	1	0051016000	SPKR 8" 8OHMHIF(099-4808-003)
7	8	0053483000	SCRW 8-32x1-3/8#6 OHPw/WSHR NI
6	14	0029527000	WSHR FN5H 8-5/8 FLNGD BLX WX
5	14	0016627000	SCRW SMA 8x3/4 OHP BLX
4	1	0051098000	GRILLE REAR ACST SFX AMP
3	2	0052000000	GRILLE SIDE ACST SFX AMP
2	1	SEE MATRIX	CHS ASSY ACST SFX
1	1	0051642000	CAB ASSY ACST SFX

- ⊠ UPPER & LOWER GRILLE ASSEMBLIES ARE PART OF CABINET ASSEMBLY.
 - ⊠ PLACE SCREWS AS CLOSE TO CENTERLINE AS GRILLE HOLES ALLOW.
 - ⊠ SECURE WIRES (ITEM 28) WITH ITEM 32 INSIDE CABINET AT REAR. ALLOW SLACK FOR CHASSIS REMOVAL.
 - ⊠ APPLY TAPE TO SIDES AND REAR.
 - 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
(18)	WARRANTY TAG	0053412000	-
(2)	CHASSIS ASSY	0052091000	0052092000 0052093000 0052094000 0052095000
	END ITEM	ACOUSTASONIC SFX 120V DOM. 0221301000	ACOUSTASONIC SFX 230V EUR. 0221361000 ACOUSTASONIC SFX 230V U.K. 0221341000 ACOUSTASONIC SFX 240V AUST. 0221331000 ACOUSTASONIC SFX 100V JPN. 0221371000

MATERIAL	n/a
FINISH	n/a
TOL. UNLESS NOTED	
FRACT.	----- 1/32
.X	----- 0.050
.XX	----- 0.010
.XXX	----- 0.010
ANGLES	----- 0.5 DEGREES
HOLE DIA.	----- +0.005 - 0.001
UNMARKED ANGLES	ARE 90 DEGREES.

ENGINEER
DAVE LEWIS
DRAWN
H. BOWIE
DATE
11-25-97
DFT. ENG. ENG.
DATE DATE
3/16/00
APPROVED
DATE
3/16/00

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

TITLE
END ITEM ASSEMBLY
ACOUSTASONIC SFX AMP

SHEET	SIZE	DRAWING NUMBER	REV.
1/1	D	0221301000	E
SCALE	N/A	MASTER/ASSEMBLY	