



PRINCETON® 65 DSP

(This is the model name for warranty claims)

p/n 2267400030 (120V)

SERVICE MANUAL



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June, 2002

IMPORTANT NOTICE

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specifications are subject to change without notice. This information and any copies produced electronically or otherwise must be surrendered upon demand of Fender Musical Instruments Corporation.

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

PARTS LIST CODES

The description codes used in the itemized Parts Lists are defined below:

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

**PRINCETON® 65 DSP**

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SPECIFICATIONS

Model Name:		Princeton 65 DSP
Release Number: <i>(Not a model number)</i>		PR 403
Part Numbers	(120V, 60Hz) US:	2267400030
	(110V, 60Hz) TW:	2267401030
	(240V, 50Hz) AUS:	2267403030
	(230V, 50Hz) UK:	2267404030
	(230V, 50Hz) ARG:	2267405030
	(230V, 50Hz) EUR:	2267406030
	(100V, 50/60Hz) JPN:	2267407030
	(220V, 60Hz) ROK:	2267409030
Power Requirement:		180W
Power Output:		65 W RMS into 8 ohms @ 5 %THD
Power Amp Sensitivity:		620mV for 65W into 8 ohms @ 5 %THD
Impedances	Input (Pre-Amp):	>1M ohms
	Pre Amp Out:	1k ohms
	Pwr Amp In:	10k ohms
Speaker Complement:		One (1) 12", 8 ohm, Fender Special Design Speaker (P/N 0025923000)
Dimensions	Height:	16.5 in (41.9 cm)
	Width:	18.6 in (47.3 cm)
	Depth:	9 in (22.9 cm)
Weight:		28 lbs. (12.7 kg)

Product specifications are subject to change without notice



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SERVICE NOTES

- 1. CHASSIS REMOVAL** is accomplished by first removing two (2) screws from the cabinet side panel and four (4) screws from the top of the cabinet. Disconnect the speaker connectors from the speaker and then slide the chassis toward the rear of the cabinet.
- 2. uDSP PCB ASSEMBLY REMOVAL** is accomplished by disconnecting the ribbon cable on the PCB Assembly, releasing the tabs on each of the plastic stand-offs which the PCB assembly is mounted. Cutting standoffs with a wire cutting tool may be preferable if replacement standoffs are available. Removal of the uDSP PCB assembly may be necessary should any of the Digital Effects operate improperly.
- 3. PRINCETON 65 DSP MAIN PCB REMOVAL** is accomplished by removing the following items: All knobs including plastic spacers, washers and nuts (10) , four (4) input jack nuts and washers, three (3) screws at the heatsink attached from the bottom of the chassis. Disconnect the transformer and primary leads. Disconnect the speaker wires (blk/wht) at P1-P2. Disconnect the ribbon cable to uDSP assembly at P6. Remove the power LED from the jewel assembly.

PCB EXCHANGE POLICY

Parts marked with a single asterisk (*) in the Parts Lists are not field replaceable. If a failure due to one of these components is detected, please con-

tact the Fender® dealer Customer Service Department to order the complete PCB Assembly.



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CIRCUIT DESCRIPTION

This section provides an overview of any new or unusual circuitry incorporated into this amplifier model. The purpose is to aid the service technician by providing insight into the design areas most likely to present a challenge in troubleshooting. This overview is focused for the efficient use and security of Fender® proprietary information.

PRE-AMPLIFIER

The guitar input signal is fed into the high pass filter at U1-A before splitting into two signal paths. The normal channel signal path (U1-B) is active until FET Q4 is turned on and FET Q1 is turned off activating the drive channel signal path (U2-B to U4-A). Differential amp U6-A and follower U6-B adjust the signal level and provides +1.65VDC bias voltage to the uDSP effects card. The preamp is in series with the digital effects card, therefore, disconnecting the card breaks the overall signal path. The low pass filter at U5-A recovers the signal from the uDSP card and sends it to the external effects loop and power amplifier.

POWER AMPLIFIER

The input signal is conditioned at filter U7-A. Differential amplifier Q6 and Q7 is fed by current source Q3, which is in turn controlled by a thermal protection circuit comprised of Q21, Q22, and RT1. This circuit is also controlled by the MUTE signal (at R153/C94) to mute the power amplifier at turn-on, at turn-off, and upon removal of all input jacks. Current turnaround at Q9 is used to feed the output of

the differential amplifier stage to a voltage amplifier comprised by Q10 and Q11. Q12 and Q13 provide voltage multiplication for output bias. Q15 and Q17 form Darlington drivers for output devices Q18 and Q19. Q14 and Q16 provide over-current protection.

POWER SUPPLY

Standard bridge rectifiers for both high and low voltage sections, with zener regulation (D46-47) for the +/-16V supplies. Half-wave rectifier (D14 and D37, C59) supplies U8, 7805 regulator for +5V supply for the uDSP card and digital user-interface.

DIGITAL USER INTERFACE

The uDSP effects card reads a voltage at potentiometer R57 using its on-board 8-bit A/D converter. The DC level (0-5V) of the pot controls the fx level. The outputs of the 4-bit encoder determines the active fx algorithm (HD4-HD7).

DIGITAL NOISE

The uDSP effects card generates some high frequency noise (>50kHz), which is a normal product of DSP processing. This noise is not audible and does not effect amplifier performance, but may be visible when observing the output of the amplifier on an oscilloscope.

**PRINCETON® 65 DSP**

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PARTS LIST: MAIN – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057423000	**PCB ASSY PRINCETON 65 DSP	
1	*	PCB FAB PRINCETON 65	
1	0048451000	BUTTON PUSH OFF WHITE	At S1
1	0050687000	CABLE JMPR 6 CKT .156 ROUND	PW1
2	0038689001	CAP AE AX .47uF 100V 20%	C15-16
1	0025960001	CAP AE AX 22uF 16V 20%	C40
6	0028463003	CAP AE RDL 10uF 50V 20%	C35-36 C57 C61 C81 C90
2	0028458003	CAP AE RDL 1uF 50V 20%	C49 C93
4	0028459003	CAP AE RDL 2.2uF 50V 20%	C7 C17 C48 C50
2	0041048000	CAP AE RDL 2200uF 50V 20%	C65-66
5	0028467003	CAP AE RDL 22uF 50V 20%	C9-10 C30 C32-33
1	0028489000	CAP AE RDL 470uF 50V 20%	C59
4	0028471003	CAP AE RDL 47uF 50V 20%	C53-54 C69-70
4	0038703001	CAP CA .1uF 50V 10%	C63 C89 C92 C94
1	0039263001	CAP CA 1000pF 50V 5%	C3
1	0038699001	CAP CA 100pF 100V 5%	C6
1	0039255001	CAP CA 10pF 100V 5%	C45
1	0039265001	CAP CA 2200pF 100V 5%	C8
4	0039259001	CAP CA 220pF 100V 5%	C29 C44 C67 C95
2	0039268001	CAP CA 4700pF 50V 5%	C1-2
3	0038701001	CAP CA 470pF 50V 5%	C14 C31 C60
2	0039256001	CAP CA 68pF 100V 5%	C39 C91
11	0034788003	CAP CD .1uF 50V 20% .15" cut	C71-78 C80 C85-86
1	0051457003	CAP CD 100pF 500V 5%	C26
2	0051406003	CAP CD 220pF 500V 10%	C51-52
1	0051458003	CAP CD 470pF 500V 10%	C19
1	0051459003	CAP CD 560pF 500V 10%	C21
5	0027255003	CAP MPF .001uF 100V 10%	C34 C37-38 C83-84
1	0027264003	CAP MPF .01uF 100V 10%	C43
2	0027270003	CAP MPF .033uF 100V 10%	C87-88
1	0053860000	**CAP MPF .1UF 275V 10%	C79
1	0052003003	**CAP MPF .1UF 250V 10%	C64
1	0027278003	CAP MPF .1uF 63V 10%	C23
2	0027281003	CAP MPF .22uF 63V 10%	C5 C42
2	0027286003	CAP MPF .47uF 63V 10%	C4 C62
1	0030960003	CAP PFF .1uF 50V 5%	C56
1	0033578000	CAP PFF RDL .001uF 100V 10%	C82
1	0033581003	CAP PFF RDL .0033uF 100V 10%	C24
1	0033583003	CAP PFF RDL .0047uF 100V 10%	C25
2	0030945003	CAP PFF RDL .01uF 50V 5%	C46-47
1	0033590003	CAP PFF RDL .022uF 100V 10%	C22
1	0030950003	CAP PFF RDL .022uF 50V 5%	C28
3	0033591003	CAP PFF RDL .033uF 100V 10%	C12-13 C18
1	0030953003	CAP PFF RDL .039uF 50V 5%	C27
2	0033592003	CAP PFF RDL .047uF 100V 10%	C11 C20
2	0037324000	CONTROL 100K 30C SNAP IN	R23 R43
1	0034720000	CONTROL 100KB SNAP IN	R33
			DRIVE/ (DRIVE)TREBLE (DRIVE)VOLUME

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY on page 4.

Unique Fender® part. Order directly from the Fender® dealer Customer Service Department.

** Safety Requirement part. Replacement must match *Safety Agency*...–*Value*, if specified –*Type*, if specified –*Approval Mark(s)* if on part.

** Both a unique Fender® part and a Safety Requirement part as defined above.



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PARTS LIST: MAIN – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0049402000	CONTROL 25K B SNAPIN	R40 (DRIVE)BASS
3	0034719000	CONTROL 50KB SNAP IN	R9 R37 R57 (CLEAN)BASS, (DR)MID, FX LVL
1	0038658000	CONTROL RTRY 50K 30C	R8 (CLEAN)TREBLE
1	0037323000	CONTROL SNAPIN 50K 15A	R16 (CLEAN)VOLUME
5	0064089001	DIODE 1N4003	D14 D35-37 D56
31	0006260001	DIODE 1N4448 SIGNAL	D1-5 D8-12 D15-16 D18-21 D24-28 D31-32 D40 D49-55
4	0020534000	DIODE 1N5402 RECTIFIER 200v C&F	D42-45
2	0025821001	DIODE HV FDH-400 SWITCHING LL	D22-23
2	0054210001	DIODE SCHOTTKY BAT85	D33-34
2	0031729001	DIODE ZEN 1n5231b.5w 5.1v 5%	D29-30
2	0031635001	DIODE ZEN 1N5240B 10V 5%	D17 D39
2	0028119060	DIODE ZEN 1N5353B 16V 5W 5%	D46-47
1	0057928000	DIODE ZEN 1N5363B 30V 5W 5%	D13
1	0041074000	ENCODER, 16 POS. BI	S2
11	0025802000	FSTN TAB MALE .250x.032 PCB MT	P1-5 P106-107 P109-110 P113-114
4	0026000001	FSTN TAB MALE PCB MT .187X.032	P105 P111-112 P115
2	0051094003	**FUZE CLIP PCB 5MM	F1
1	0057350000	HEADER 2X8	P6
1	0054320000	HEATSINK PLATE PRINCETON 65	At Q18-19
1	0025796000	HEATSINK TO-220	At U8
3	0016795000	IC DUAL OP AMP TL072	U1 U5 U7
5	0031611000	IC DUAL OPAMP PC4560	U2-4 U6 U10
1	0041812000	IC REGULATOR +5V MC7805CT	U8
2	0040903000	INSULATOR MICA TO-218	At Q18-19
2	0051658000	JACK MONO R/A	J3 J7
2	0053450000	JACK STEREO R/A	J1 J4
102	0020888001	JUMPER WIRE 22 GA	J1-102
1	0055812000	LED TULIP ASSEMBLY	D48
3	0049948000	LED, RED LONG LEAD LUMEX	D6-7 D41
1	0097360000	NUT HEX 4-40 EX LOCK	At U8
2	0031900001	RES CF 1/2W 15k 5%	R85 R88
1	0027869001	RES CF 1/2W 470ohm 5%	R115
2	0026549001	RES CF 1/2W 5% 1.5Kohm	R89 R92
1	0028842001	RES CF 1/4W 1.1Kohm 5%	R4
2	0024970001	RES CF 1/4W 1.8k 5%	R13 R73
12	0024997001	RES CF 1/4W 100k 5%	R42 R49 R60 R67-68 R113 R126-129 R142-143
8	0024981001	RES CF 1/4W 10k 5%	R111 R134-135 R137 R139 R141 R144-145
3	0024937001	RES CF 1/4W 10ohm 5%	R93 R101 R19
1	0024953001	RES CF 1/4W 120 ohm 5%	R84
1	0024985001	RES CF 1/4W 15k 5%	R7
2	0025058001	RES CF 1/4W 180k 5%	R12 R45

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PARTS LIST: MAIN – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0024986001	RES CF 1/4W 18k 5%	R64
6	0024965001	RES CF 1/4W 1k 5%	R20 R61 R63 R136 R138 R153
9	0025069001	RES CF 1/4W 1M 5%	R32 R62 R116-117 R131-133 R140 R148
10	0024971001	RES CF 1/4W 2.2k 5%	R15 R54-56 R58 R95 R97-98 R100 R147
2	0029600001	RES CF 1/4w 200ohm 5%	R86-87
1	0029006001	RES CF 1/4W 20k 5%	R112
3	0025059001	RES CF 1/4W 220k 5%	R14 R29 R69
7	0024987001	RES CF 1/4W 22k 5%	R10-11 R21-22 R44 R108 R152
2	0024957001	RES CF 1/4W 270ohm 5%	R96 R99
7	0024988001	RES CF 1/4W 27k 5%	R18 R59 R71-72 R109-110 R146
4	0024973001	RES CF 1/4W 3.3k 5%	R25-26 R52 R130
1	0024975001	RES CF 1/4W 3.9k 5%	R65
3	0024989001	RES CF 1/4W 33k 5%	R27 R35 R66
2	0024977001	RES CF 1/4W 4.7k 5%	R79 R149
3	0028956001	RES CF 1/4W 43k 5%	R36 R38 R50
1	0025065001	RES CF 1/4W 470k 5%	R28
3	0024961001	RES CF 1/4W 470ohm 5%	R34 R75-76
3	0024993001	RES CF 1/4W 47k 5%	R30 R41 R74
2	0024947001	RES CF 1/4W 47ohm 5%	R77-78
1	0028034001	RES CF 1/4W 5.1Kohm 5%	R6
2	0024978001	RES CF 1/4W 5.6k 5%	R53 R123
2	0028018001	RES CF 1/4W 510Kohm 5%	R2-3
3	0024979001	RES CF 1/4W 6.8k 5%	R5 R150-151
1	0025067001	RES CF 1/4w 680k 5%	R70
2	0024995001	RES CF 1/4w 68k 5%	R1 R39
1	0025942001	RES CF 1/4W 7.5Kohm 5%	R17
1	0024980001	RES CF 1/4W 8.2k 5%	R24
1	0029613001	RES CF 1/4W 91k 5%	R31
1	0029722001	RES FILM 1W 1k 5%	R114
2	0037354001	RES FILM 1W 4.7K 5% LL	R90-91
5	0036960001	RES FUSE MF 1/4w 5% 47ohm T/R	R81 R83 R94 R102 R104
1	0015582001	RES MF 1/4W 10k 1%	R47
4	0027632001	RES MF 1/4W 2.43Kohm 1%	R46 R51 R124-125
1	0016971001	RES MF 1/4W 33.2k 1%	R48
2	0054208001	RES MF FUSE 1/4 5% 470ohm	R80 R82
1	0051417001	RES MOX 2 W 22 OHM LL 5%	R106
2	0041277001	RES MOX 2W 820 OHM 5%	R120-121
1	0054434000	RES WW 5W 10% .1ohm	R107
2	0027478000	RES WW BT 5w 10% .22 ohm	R103 R105
1	0029670000	RES WW BT 5w 10% 150 ohm	R122
2	0028037000	RES WW BT 5w 10% 330 ohm	R118-119
1	0039420000	SCRW M 4-40X3/8 PHP SS SEMS	At U8
4	0027638000	SCRW TF 4-40x3/8 HWHS ZI .1"HD	At HS1
2	0032908000	SCRW TF 6-32x3/8 PHP ZI	At HS1

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY on page 4.

Unique Fender® part. Order directly from the Fender® dealer Customer Service Department.

** Safety Requirement part. Replacement must match *Safety Agency*...–*Value*, if specified –*Type*, if specified –*Approval Mark(s)* if on part.

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**PRINCETON® 65 DSP**

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PARTS LIST: MAIN – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0036178000	SPACER LED .5x.1 BRN A6192-1	At D41
1	0028091000	SWITCH PUSH SLFLK SHORT STROKE	S1
1	0051418000	**THERMAL SENSOR PTC 100 DEG	RT1
1	0059694000	**WIRE SET PCB PRINCETON 65 DSP	At WJ1-2 P7-8
6	0014689003	XSTR N-CH JFET J111 TO-92(000)	Q1-4 Q23 Q26
1	0016739003	XSTR NPN 2N4401 TO-92	Q12
1	0028760000	XSTR NPN 2SC4793	Q15
1	0051448003	XSTR NPN 2SD1857	Q14
1	0051725000	XSTR NPN MJW21192 TO 247	Q18
2	0014867003	XSTR NPN MPSW42 (TO-92)	Q8 Q11
2	0025751003	XSTR NPN SILICON TO_92	Q6-7
5	0016742003	XSTR PNP 2N4403 TO-92	Q13 Q21-22 Q24-25
1	0028759000	XSTR PNP 2SA1837/2SA136A	Q17
1	0051447003	XSTR PNP 2SB1236	Q16
1	0051724000	XSTR PNP MJW21191 TO 247	Q19
1	0014866003	XSTR PNP MPSW92 TO-226AE	Q10
1	0025752003	XSTR PNP SILICON TO_92	Q9
REF	0025936000	STANDOFF NYL PCB SNAP 3/8" NAT	At ST1-6
REF	0057419000	SVC DIAG COMB PRNCTN 65 DSP	

PARTS LIST: uDSP – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057801008	**PCB ASSY uDSP PRINCETON 65 DSP	w/ EPROM
REF	0057283000	SVC DIAG COMB MICRO DSP	
1	0057802100	IC ROM PRINCETON 65 DSP V1.00	
1	*	PCB Fab u-DSP	
2	*	CAP 0805 CER .001uF 25V 5%	
14	*	CAP 0805 CER .01uF 25V 5%	
10	*	CAP 0805 CER .1uF 25V 5%	
2	*	CAP 0805 CER 22pF 25V 5%	
2	*	CAP 0805 CER 750Pf 25v 5%	
3	*	CAP 3528 TAN 4.7uF 16V 20%	
6	*	CAP 3528 TAN 10uF 16V 20%	
5	*	DIODE SMT 1N4448 SIGNAL	
2	*	HDR .1 CTR 8x2 CKT SQ PIN	
4	*	RES 0805 MF 1/10W 5% 0ohm	
2	*	RES 0805 MF 1/10W 5% 100ohm	
4	*	RES 0805 MF 1/10W 5% 750ohm	
4	*	RES 0805 MF 1/10W 5% 1k	
1	*	RES 0805 MF 1/10W 5% 2k	
1	*	RES 0805 MF 1/10W 5% 3.3k	
2	*	RES 0805 MF 1/10W 5% 4.7k	
1	*	RES 0805 MF 1/10W 5% 15k	
1	*	RES 0805 MF 1/10W 5% 47k	
1	*	IC SMT SOCKET PLCC 44-TT	
1	*	IC SMT TLC549 AD	
1	*	IC SMT SRAM 64Kx16	
1	*	IC SMT COUNTER 74LV4040	

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PARTS LIST: uDSP – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	*	IC SMT HEX SCHMITT-T INV 74HC14	
1	*	IC SMT VREG +3.3V LM1117	
1	*	IC SMT CODEC TLC320AD77C	
1	*	IC SMT DSP TMS320VC5402PGE	
1	*	IC SMT VREG +1.8V 150mA TPS76318	
1	*	IC SMT RESET 5V MC34064D-5	
1	*	XTAL 20MHz HC49SD	

PARTS LIST: CHASSIS ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
9	0033206000	BUSHING KNOB SPACER	
1	0021709000	BUSHING SR .437x.062x13/32 BLK	
1	0057359000	CABLE RIBBON 2x8 7"	
1	*	CHASSIS PRINCETON 65 DSP	
1	0054642000	**CONNECTOR IEC SNAP IN	
1	0028560000	END BELL XFMR 85w	
1	0048384000	**FUSE 20MMX5MM F2A 250V	100V/120V models only
1	0020789000	**FUSE QA 20mmx5mm 250v 1A	220V/230V models only
1	0013112000	**FUSE TD 20mmx5mm 250v 1A	240V Australia model only
1	0054318000	HEATSINK BAR PRNCTON 65/DLX 90	
1	0054798000	JEWEL ASSY LED	
9	0054419000	KNOB ROTARY 180 SS W/CHR INS	
1	0057256000	KNOB ROTARY ARROW W/CHRM INSRT	
1	*	LABEL GROUNDING SEMKO	
0	*	LABEL VOLTAGE 100V	
0	*	LABEL VOLTAGE 230V	
1	*	LABEL VOLTAGE 240V	
4	0028591000	NUT ACORN 8-32	
4	0053479000	NUT HEX 7/16 20X1/8 NI	
1	0031625000	NUT HOLDER PILOT LIGHT 1/16-27	
1	0057421000	PANEL FRONT PRINCETON 65 DSP	
1	*	PANEL REAR PRINCETON 65 DSP	
1	*	PANEL REAR PRINCETON 65 DSP ROK	220V ROK model only
1	0057801008	PCB ASSY MICRO DSP	
1	0057423000	PCB ASSY PRINCETON 65 DSP	
1	0038900000	SCRW TF 6-32X1/4 PHP ZI	
6	0028937000	SCRW TF 6-32x5/8 PHP ZI TAPTYT	
3	0028500000	SCRW TF 8-32x3/4 HWH SLTD Z1	
6	0025936000	STANDOFF NYL PCB SNAP 3/8" NAT	
4	0053952000	STANDOFF NYLON BLK .250"	
1	0039287000	**SWITCH DPST .187 TAB GLOBAL	
4	0053480000	WASHER FLAT .442 X.692 NI	
1	0054319000	**WIRE SET CHS PRINCETON 65	
4	0030007000	WSHR LCK INTL 8x.330x.02 ZI	
1	0027668000	**XFMR PWR 120v 85W	120V model only
1	0054824000	**XFMR PWR 65 WATT ANPS 230V	220V/230V/240V models only
1	0039357000	**XFMR PWR EXP DEL112/RP/PRN65	100V JPN model only

PARTS LIST: CABINET ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	0019275000	INSERT GLIDE CUSHION 1.27 DIA	
4	0019276000	GLIDE CAB 1.24x.335 NI	

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY on page 4.

Unique Fender® part. Order directly from the Fender® dealer Customer Service Department.

** Safety Requirement part. Replacement must match *Safety Agency*...–*Value*, if specified –*Type*, if specified –*Approval Mark(s)* if on part.

** Both a unique Fender® part *and* a Safety Requirement part as defined above.

**PRINCETON® 65 DSP**

(This is the model name for warranty claims)

PARTS LIST:		CABINET ASSEMBLY	
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	0019279000	HANDLE CAP 2 HOLE NICKEL	
8	0021972000	NUT T 10-32x3/4 STR 3 PRNG BLX	
4	0022244000	SCRW M 10-32x1-1/8 OHP NI	
4	0026566000	CORNER 2 HOLE w/TAB NI	
2	0026568000	CORNER 3 HOLE NI	
0.827	0026570000	TOLEX "BRAVURA BLACK"	
10	0026571000	SCRW SMAB 8X5/8 THP NI	
4	0026625000	SCRW WOOD 8x1 FH	
7.186	0027502000	PARTICLEBOARD 3/4" THICKNESS	
0.504	0027503000	PARTICLEBOARD 1/2" THICKNESS	
0.01	0027648000	TAPE ALUM 6"x60YDS	
1	0027846000	HANDLE 9.25" NO LOGO	
0.194	0029085000	VELCRO STRIP LOOP 1.5"wd BLK	
0.194	0029086000	VELCRO STRIP HOOK 1.5"wd BLK	
1	0032524000	INSERT HANDLE	
0.495	0037788000	CLOTH GRILLE BLACK/SILVER	
0.048	0040677000	PLYWOOD BALTIC BIRCH 3/4"13PLY	

PARTS LIST:		END ITEM ASSEMBLY	
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0040547000	CAB ASSY PRINCETON 112/65	
1	0057414000	CHS ASSY PRINCETON 65 DSP 100V JPN	100V JPN model only
1	0057413000	CHS ASSY PRINCETON 65 DSP 120V DOM	120V model only
1	0057415000	CHS ASSY PRINCETON 65 DSP 230V	230V models only
1	0057416000	CHS ASSY PRINCETON 65 DSP 230V ROK	230V ROK model only
1	0057417000	CHS ASSY PRINCETON 65 DSP 240V AUS	240V AUS model only
1	0053997000	**CORD PWR W/IEC CONN 100V JPN	100V JPN model only
1	0047251000	**CORD PWR W/IEC CONN 230V	230V models only
1	0057674000	**CORD PWR W/IEC CONN 230V ARG	230V ARG model only
1	0047249000	**CORD PWR W/IEC CONN 230V UK	230V UK model only
1	0047250000	**CORD PWR W/IEC CONN 250V	240V AUS model only
1	0047248000	**CORD PWR W/IEC CONN DOM	110V/120V models only
.004rl	*	CORROSEAL 50# (12"X 250' ROLL)	
1	*	DECAL SPEAKER GLOBE ROUND	
0	0057418000	MANUAL OWNERS PRINCETON 65 DSP	
1	0029906000	NAMEPLATE FENDER GENERIC SMALL	
4	0026577000	SCRW M 10-32x1 PHP BLX	
6	0036199000	SCRW M 8-32x1-3/16 OHP BLX CP	
2	0018113000	SCRW SMA 4x1/2 OHP BLX	
2	0011678000	SCRW SMA 8x1-1/2 OHP BLX	
1	0025923000	SPKR 12" 8 OHM 75W(099-4812-005)	
0	0057419000	SVC DIAG COMB PRINCETON 65 DSP	
8	0029527000	WSHR FNSH 8-5/8 FLNGD BLX WX	

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY on page 4.

Unique Fender® part. Order directly from the Fender® dealer Customer Service Department.

** Safety Requirement part. Replacement must match *Safety Agency*...–*Value*, if specified –*Type*, if specified –*Approval Mark(s)* if on part.

** Both a unique Fender® part and a Safety Requirement part as defined above.



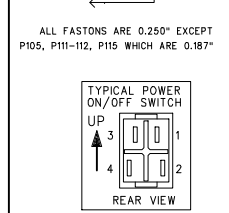
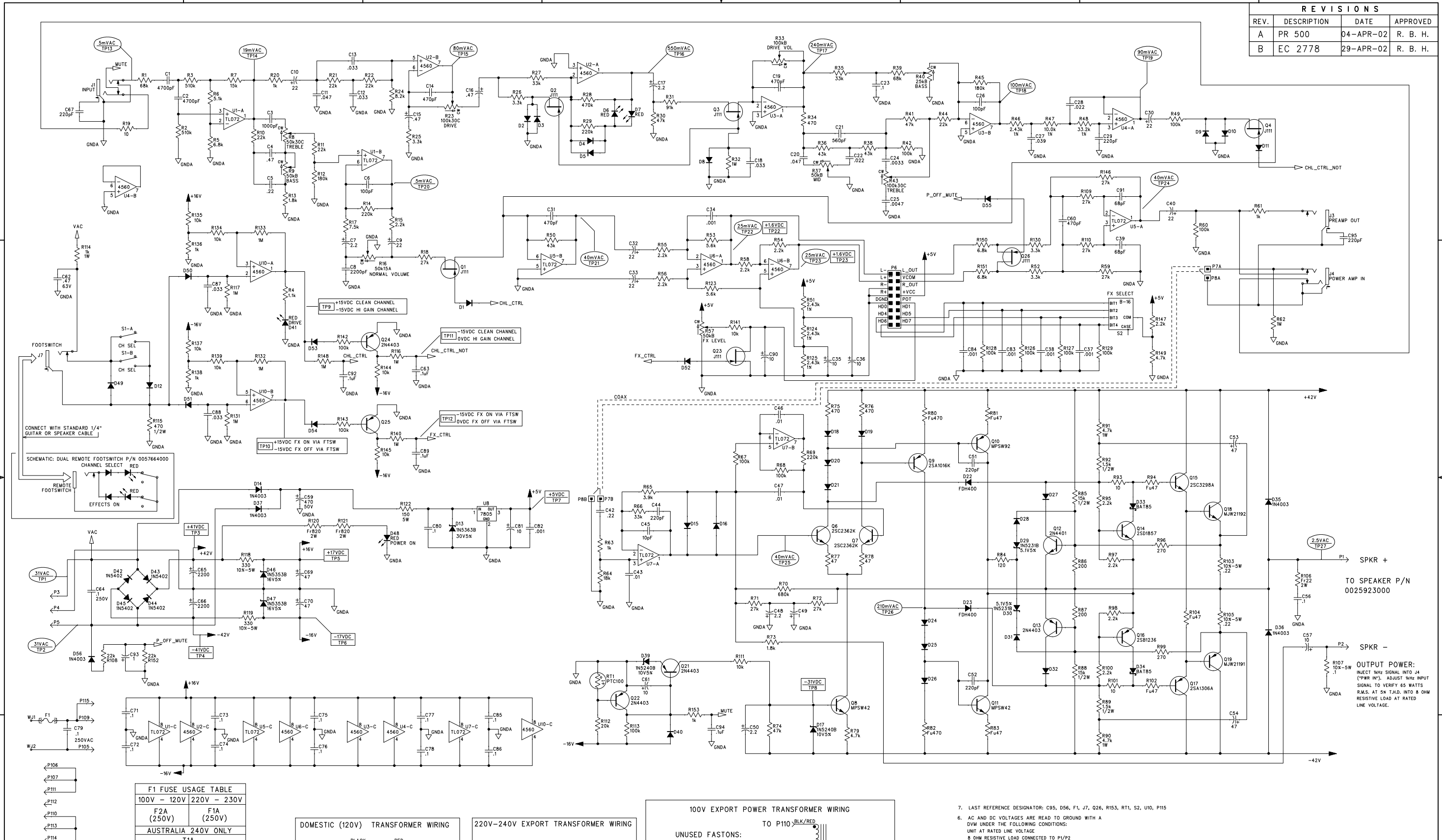
PRINCETON® 65 DSP

(This is the model name for warranty claims)

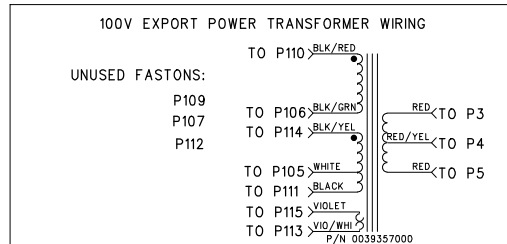
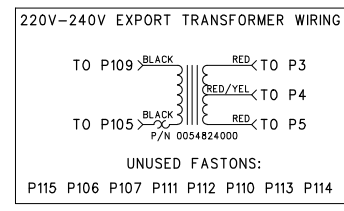
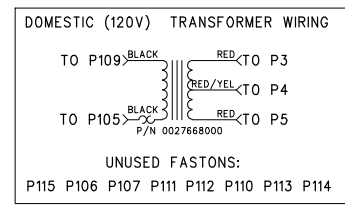
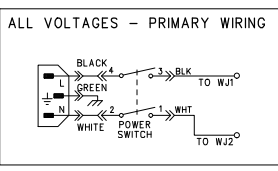
Schematics and Drawings

Service Diagram (Schematic)	Princeton 65 DSP
Service Diagram (PCB Assy)	Princeton 65 DSP
Service Diagram (Schematic)	Micro DSP
Service Diagram (PCB Assy)	Micro DSP
Chassis Assy	Princeton 65 DSP
End Item Assy	Princeton 65 DSP

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 500	04-APR-02	R. B. H.
B	EC 2778	29-APR-02	R. B. H.



F1 FUSE USAGE TABLE	
100V - 120V	220V - 230V
F2A (250V)	F1A (250V)
AUSTRALIA 240V ONLY	
T1A (250V)	



7. LAST REFERENCE DESIGNATOR: C95, D56, F1, J7, Q26, R153, R11, S2, U10, P115
6. AC AND DC VOLTAGES ARE READ TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
 UNIT AT RATED LINE VOLTAGE
 8 OHM RESISTIVE LOAD CONNECTED TO P1/P2
 NO FOOTSWITCH CONNECTED
 CH SEL SWITCH PUSHED IN (RED LED ON)
 FX LEVEL CONTROL AT FULL CCW, DRIVE CONTROL AT "3"
 ALL OTHER CONTROLS AT "5 1/2"
 JACK INSERTED AT J1
 NO INPUT SIGNAL (TP1-12)
 ADDITIONAL CONDITIONS (TP13-27):
 5W 1/4W SNEEVAVE INPUT TO J1
5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0057424000 AND PCB ASSEMBLY P/N 0057423000.
4. ALL POLARIZED CAPACITORS IN uF; 20% 50V MINIMUM.
 2. ALL UNPOLARIZED CAPACITORS IN uF; 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
1. 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.

Fender MUSICAL INSTRUMENTS
Corona, CA USA

CHECKED BY: _____ DATE: _____
 TITLE: SERVICE DIAGRAM, COMBINED (schematic)
PRINCETON 65 DSP

APPROVED BY: _____ DATE: _____
 SIZE: **D** DRAWING NUMBER: **0057419000** REV: **B**

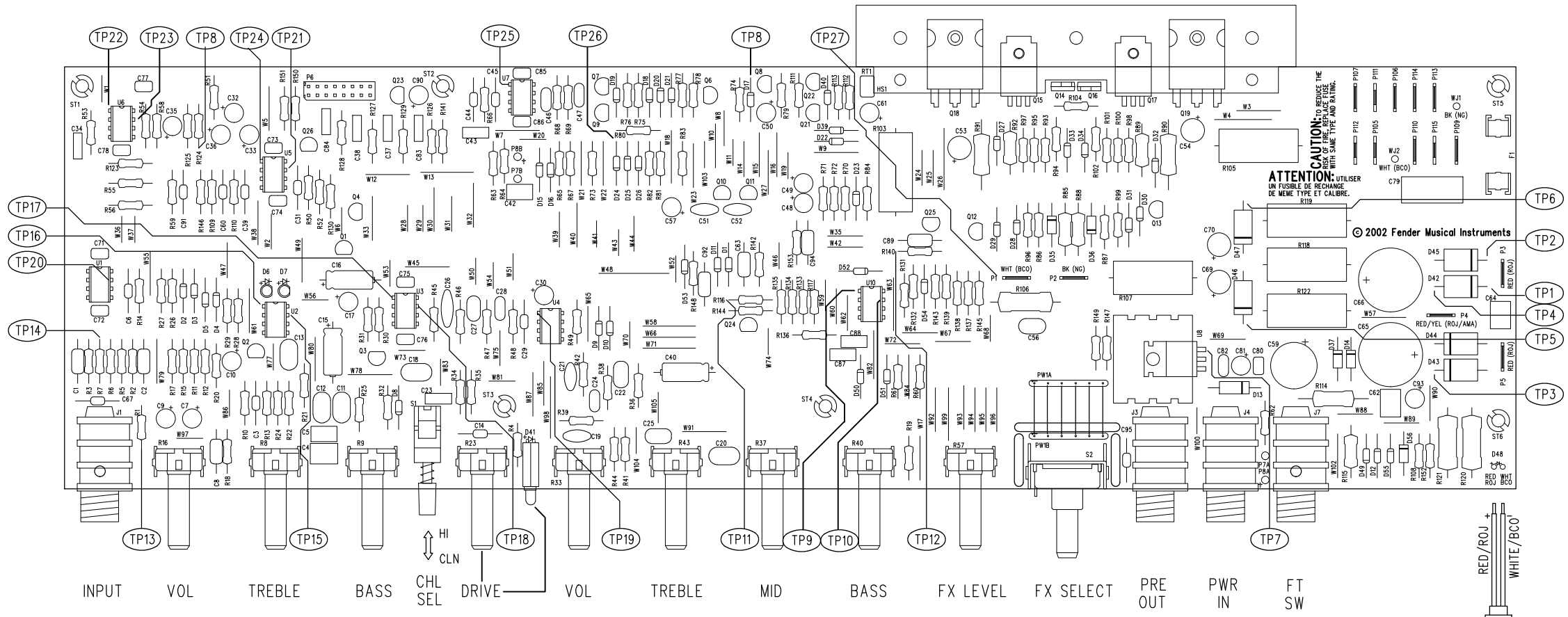
DRAWN: R. HAACK ENGR: R. HAACK
 DATABASE FILE: Z500S.SCH RELEASE DATE: 04-APR-02 SHEET: 1 OF 2

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR500	04-APR-02	R B H
B	EC2778	29-APR-02	R B H

D
C
B
A

D
C
B
A



CAUTION: TO REPLACE THE FUSE WITH SAME TYPE AND RATING.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE ET CALIBRE.
 © 2002 Fender Musical Instruments

INPUT VOL TREBLE BASS CHL SEL DRIVE VOL TREBLE MID BASS FX LEVEL FX SELECT PRE OUT PWR IN FT SW

RED/ROJ +
WHITE/BCO
POWER ON

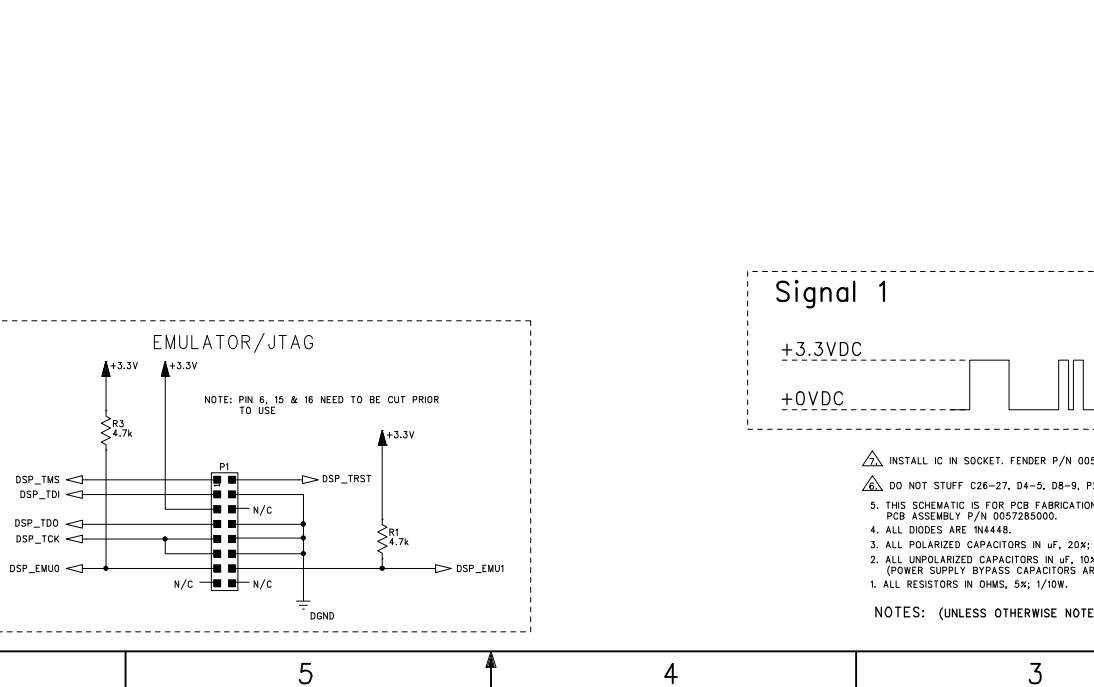
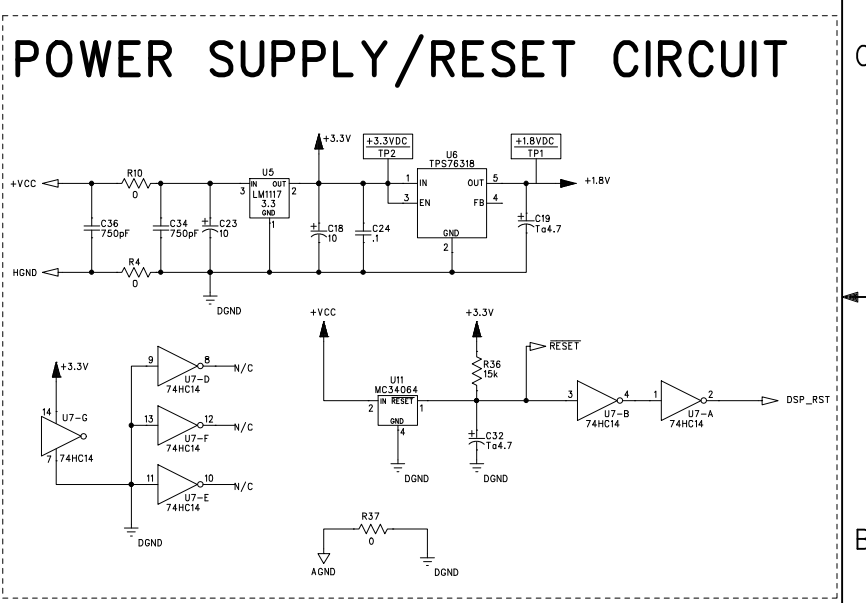
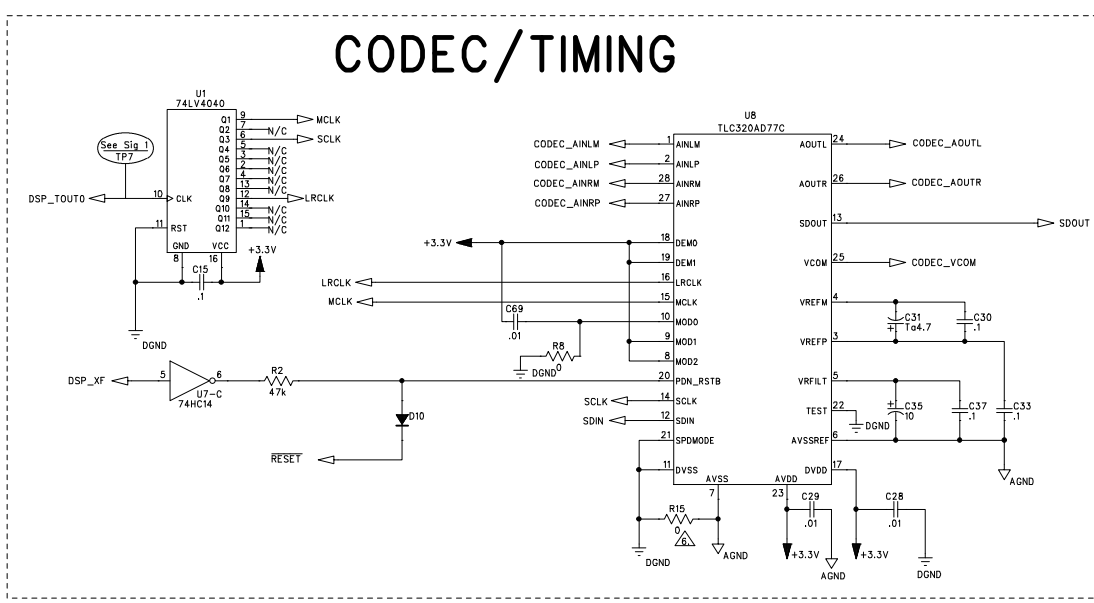
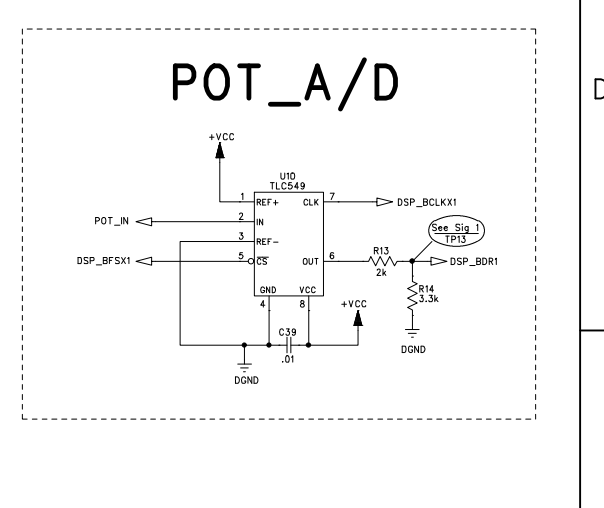
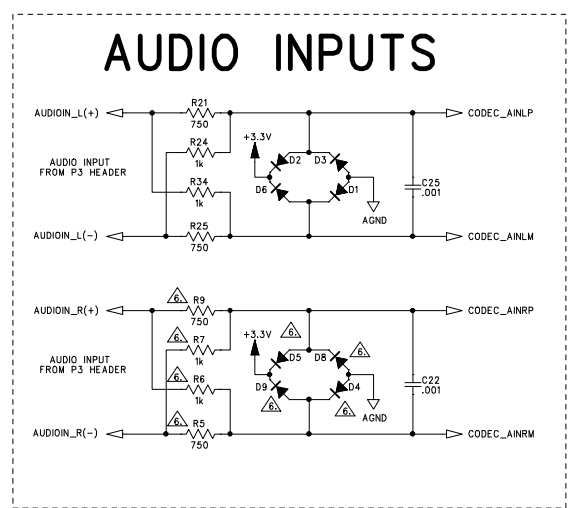
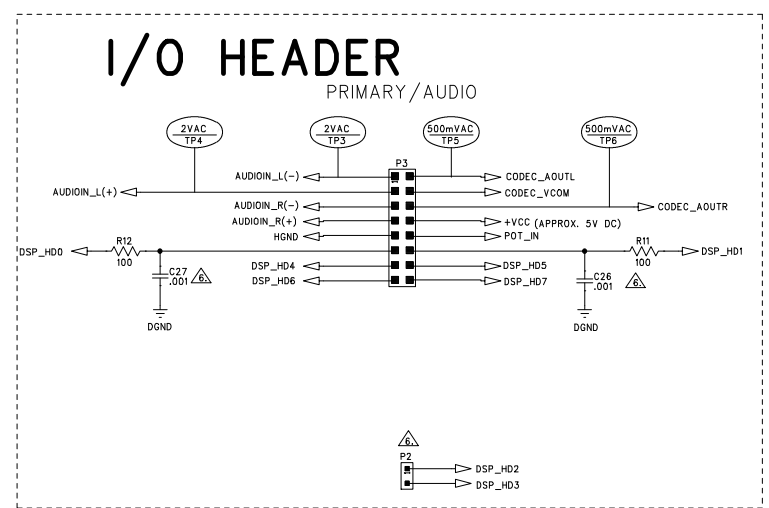
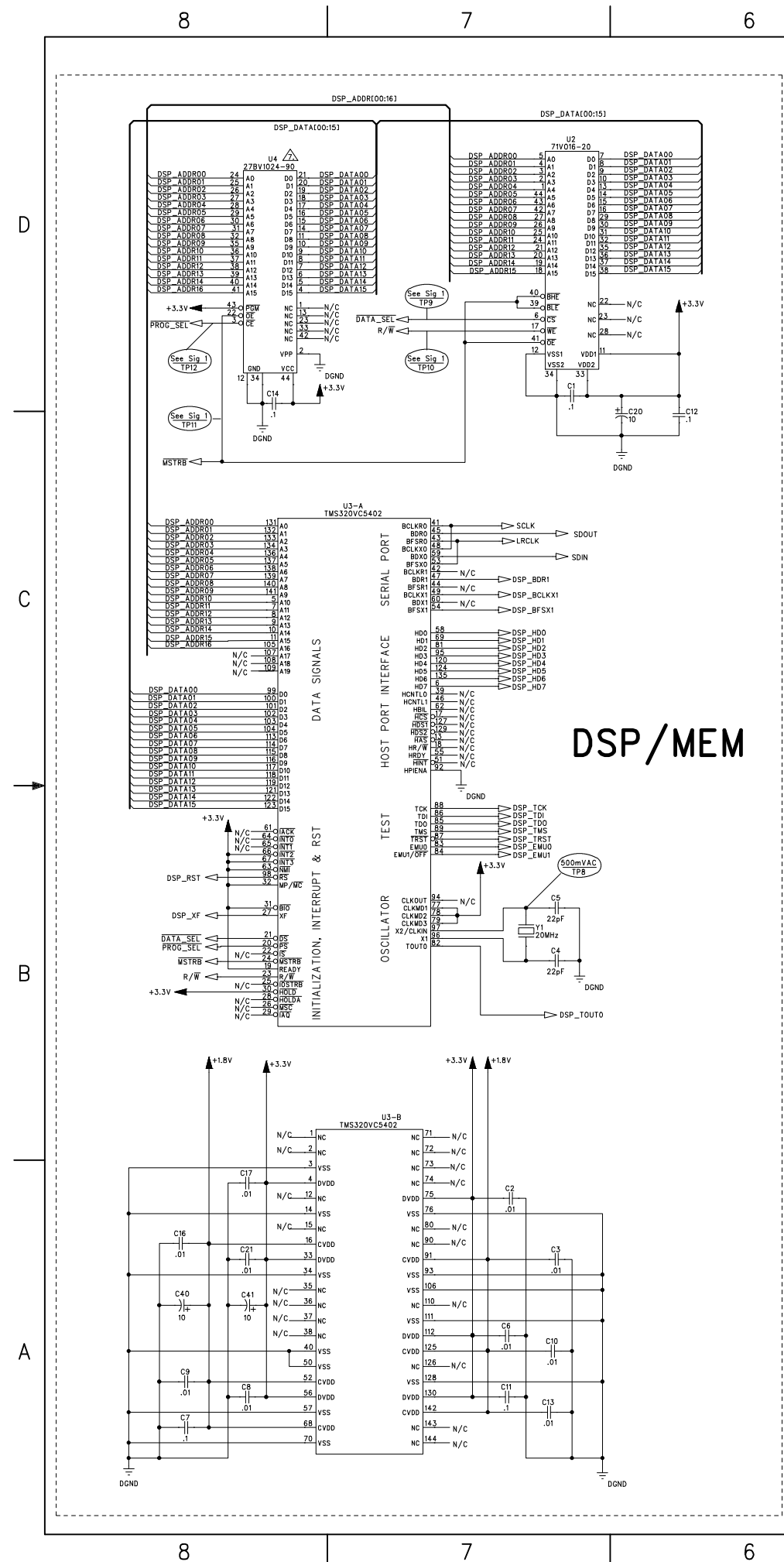
FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z500P.PCB DATE: 29-APR-02

2. MICRO-DSP ASSEMBLY P/N 0057801008 MUST BE CONNECTED TO P6 FOR TEST.
 1. SEE SHEET 1 FOR PRIMARY WIRING, TEST CONDITIONS AND TESTPOINT VALUES.
 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 Corona, CA U.S.A	
CHECKED BY: _____ DATE: _____		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) PRINCETON 65 DSP MAIN PCB	
APPROVED BY: _____ DATE: _____		SIZE C	DRAWING NUMBER 0057419000
DRAWN: ROB HAACK	ENGR: ROB HAACK	RELEASE DATE: 04-APR-02	REV. B
DATABASE FILE: Z500P.PCB		SHEET 2 OF 2	

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR480	29-NOV-01	J T L
B	EC 2743	07-MAR-02	J T L



Signal 1

INSTALL IC IN SOCKET. FENDER P/N 0056585005

DO NOT STUFF C26-27, D4-5, D8-9, P2, R5-7, R9, R15.

THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0057284000 AND PCB ASSEMBLY P/N 0057285000.

ALL DIODES ARE 1N4448.

ALL POLARIZED CAPACITORS IN μ F, 20X; 15V MINIMUM.

ALL UNPOLARIZED CAPACITORS IN μ F, 10X OR BETTER; 16V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20X).

ALL RESISTORS IN OHMS, 5%; 1/10W.

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.

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

CHECKED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

DRAWN: J. Jimenez ENGR: J. Lamb DATABASE FILE: Z481S.SCH

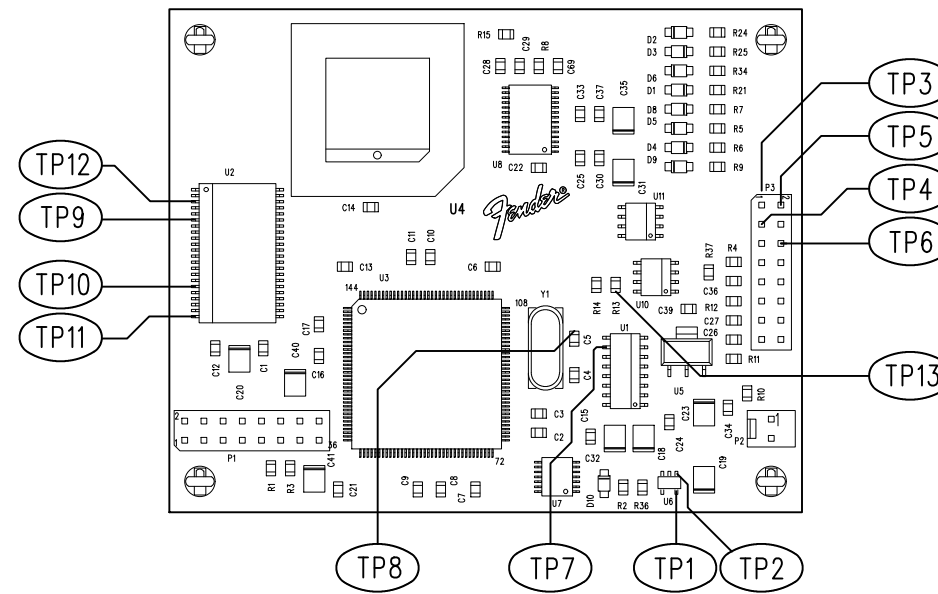
TITLE: SERVICE DIAGRAM, COMBINED (schematic) MICRO DSP

SIZE: D DRAWING NUMBER: 0057283000 REV: B

RELEASE DATE: 29-NOV-01 SHEET: 1 OF 2

REVISIONS


REV.	DESCRIPTION	DATE	APPROVED
A	PR480	30-NOV-01	J T L
B	EC 2743	07-MAR-02	J T L

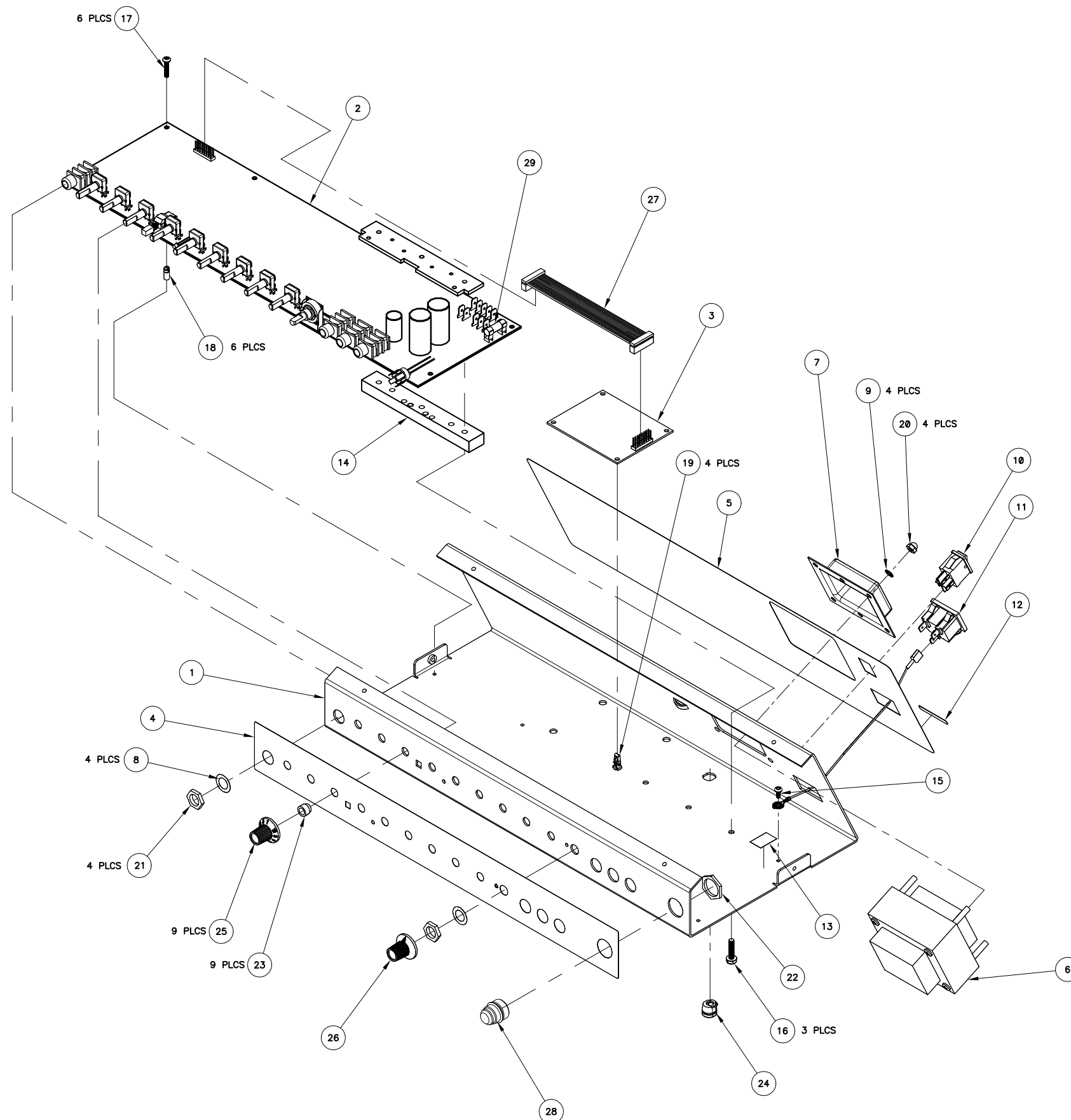


FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z481P.PCB DATE: 07-MAR-02

1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.

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 Corona, CA U.S.A.	
CHECKED BY: _____ DATE: _____		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) uDSP SERIES	
APPROVED BY: _____ DATE: _____		SIZE B	REV. B
DRAWN: J. Jimenez ENGR: J. Lamb		DRAWING NUMBER 0057283000	
DATABASE FILE: Z481P.PCB		RELEASE DATE: 30-NOV-01	SHEET 2 OF 2



(N.S.) = NOT SHOWN

ITEM	QTY	DESCRIPTION
30	1	WIRE SET CHS PRINCETON 65 (N.S.)
29	1	FUSE 20mm x 5mm
28	1	JEWEL ASSY LED
27	1	CABLE RIBBON 2x8 7"
26	1	KNOB ROTARY ARROW W/CHRM INSRT
25	9	KNOB ROTARY 180 SS W/CHR INS
24	1	BUSHING SR .437x.062x13/32 BLK
23	9	BUSHING KNOB SPACER
22	1	NUT HOLDER PILOT LIGHT 1/16-27
21	4	NUT HEX 7/16 20X1/8 NI
20	4	NUT ACORN 8-32
19	4	STANDOFF NYLON BLK .250"
18	6	STANDOFF NYL PCB SNAP 3/8" NAT
17	6	SCRW TF 6-32x5/8 PHP ZI TAPTYT
16	3	SCRW TF 8-32x3/4 HWH SLTD Z1
15	1	SCRW TF 6-32x1/4 PHP ZI
14	1	HEATSINK BAR PRNCETON 65/DLX 90
13	1	LABEL GROUNDING SEMKO
12	1	LABEL VOLTAGE
11	1	CONNECTOR IEC SNAP IN
10	1	SWITCH DPST .187 TAB GLOBAL
9	4	WSHR LCK INTL 8x.330x.02 ZI
8	4	WASHER FLAT .442 X.692 NI
7	1	END BELL XFMR 85w
6	1	XFMR PWR
5	1	PANEL REAR PRINCETON 65 DSP
4	1	PANEL FRONT PRINCETON 65 DSP
3	1	PCB ASSY MICRO DSP
2	1	PCB ASSY PRINCETON 65 DSP
1	1	CHASSIS PRINCETON 65 DSP

		Fender FENDER MUSICAL INSTRUMENTS CORP. CORONA, CALIFORNIA U.S.A.	
DATE 3/14/2001		TITLE CHASSIS ASSEMBLY PRINCETON 65 DSP	
DFT.	ENG.	ENG.	
DATE	DATE	DATE	
APPROVED		SHEET 1/1	SIZE D
DATE		SCALE NONE	DRAWING NUMBER 0057413000
			REV. A
		MASTER/ASSEMBLY	

8

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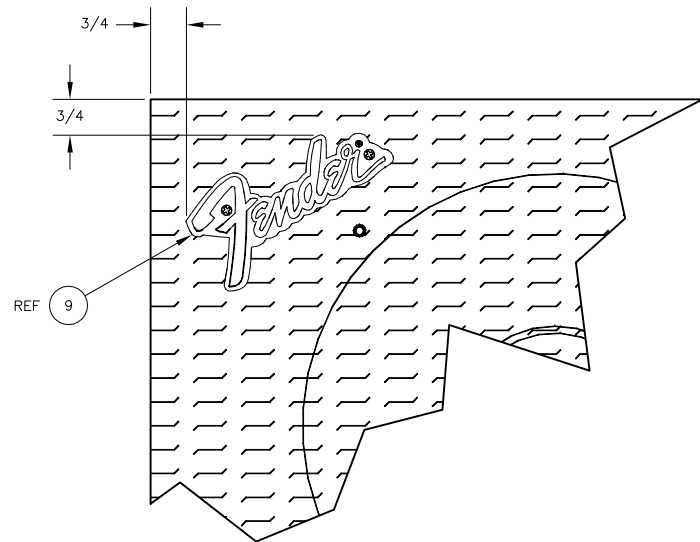
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D

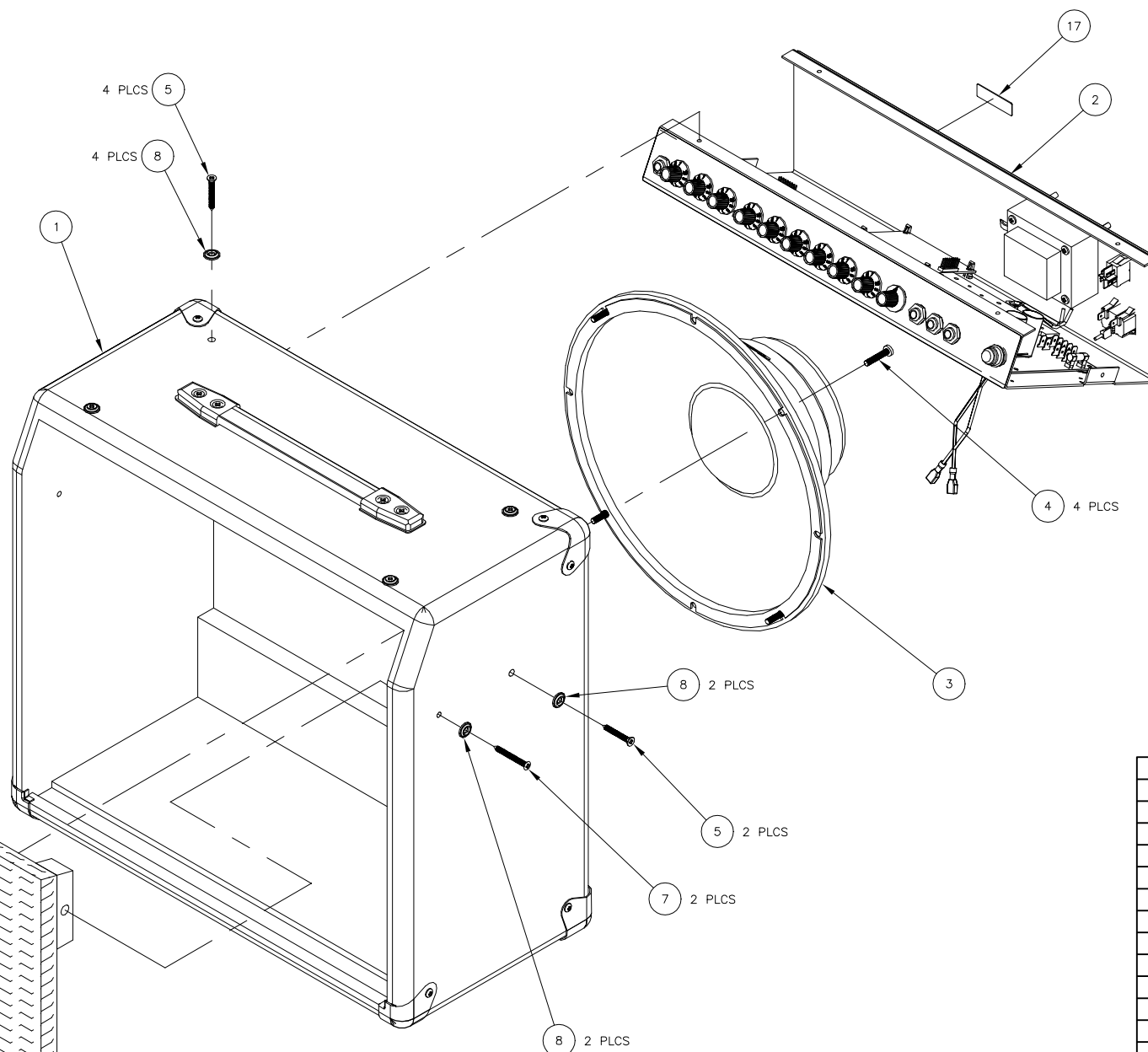
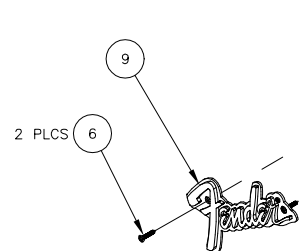
C

B

A



LOGO LOCATION DETAIL
SCALE: 1/2



(N.S.) = NOT SHOWN

22	1	
21	1	
20	1	
19	1	
18	1	
17	1	LABEL SERIAL MEXICO
16	8	
15	1	
14	1	
13	1	
12	1	
11	AR	
10	1	CORD PWR W/IEC CONN (N.S.)
9	1	NAMEPLATE FENDER GENERIC SMALL
8	8	WSHR FN5H 8-5/8 FLNGD BLX WX
7	2	SCRW SMA 8x1-1/2 OHP BLX
6	2	SCRW SMA 4x1/2 OHP BLX
5	6	SCRW M 8-32x1-3/16 OHP BLX CP
4	4	SCRW M 10-32x1 PHP BLX
3	1	SPKR 12"8OHM 75W(099-4812-005)
2	1	CHASSIS ASSEMBLY PRINCETON 65 DSP
1	1	CAB ASSY PRINCETON 112/65
ITEM	QTY	DESCRIPTION

MATERIAL	N/A	DATE		2/19/2002		Fender® FENDER MUSICAL INSTRUMENTS CORP. CORONA, CALIFORNIA U.S.A.	
FINISH	N/A	DFT.	ENG.	ENG.	TITLE		
TOL. UNLESS NOTED		DATE	DATE	DATE	END ITEM		
FRACT. ----- +- 1/32		APPROVED		DATE		PRINCETON 65 DSP	
.X ----- +- 0.050		SHEET		SIZE		DRAWING NUMBER	
.XX ----- +- 0.010		1/1		D		2267400030	
.XXX ----- +- 0.010		SCALE		NONE		REV.	
ANGLES ----- +- 0.5 DEGREES		DATE				A	
HOLE DIA. ----- +0.005 - 0.001							
UNMARKED ANGLES ARE 90 DEGREES.							

8

7

6

5

4

3

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1

D

C

B

A