Bassman® 500

(This is the model name for warranty claims)
p/n 2249600000 120V

SERVICE MANUAL

ATTENTION:

WARRANTY SERVICE PROCEDURES

The Bassman 500 amplifier is considered to be field serviceable to the component level except for the SMPS PCB Assembly and the Class D Power Amp module. These PCB Assemblies should be replaced as a unit. All other Stuffed PCB Assemblies are not readily available for this unit. We do however understand that some circumstances may require PCB Replacement. Any Fender Authorized Service Center in need of a warranty replacement PCB Assembly for this unit should contact FMIC Tech Support by phone (866) 345-3642 or email: sevice@fender.com

Fender Musical Instruments Corporation, 17600 N Perimeter Dr Suite 100 Scottsdale, AZ 85255
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IMPORTANT NOTICE

- 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 FU	=	Fusible
RES MF	=	Metal Film
RES MOX	=	Metal Oxide
RES WW	=	Wire Wound

HARDWARE CODES

BLX	=	Black Oxide
CAP	=	Cap Screw
CR	=	Chrome Plated
FLHP	=	Fillister Head Phillips
FHP	=	Flat Head Phillips
HSH	=	Hex Socket Head
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
SMAB	=	Sheet Metal "AB" Point
SMB	=	Sheet Metal "B" Point
SS	=	Stainless Steel
TF	=	Thread Forming
THP	=	Truss Head Phillips
ZI	=	Zinc Plated

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SPECIFICATIONS

MODEL NAME:		**BASSMAN 500**
PART NUMBERS:	**(120V, 60Hz) US:**	22-49600-000
	(240V, 50Hz) AUS:	22-49603-000
	(230V, 50Hz) UK:	22-49604-000
	(220V, 50Hz) AUS:	22-49605-000
	(230V, 50Hz) EUR:	22-49606-000
	(100V, 50/60Hz) JPN:	22-49607-000
TYPE:		PR 2809
POWER REQUIREMENT:		950W
PRE AMP	**INPUT IMPEDANCE:**	>820kΩ (Input 1); 136kΩ (Input 2, -6dB)
	OUTPUT IMPEDANCE:	220Ω balanced (@ PRE AMP OUTPUT jack)
	SENSITIVITY:	12mV @ 100/1000Hz for 1.0V RMS at Pre Amp Output (Input 1, Vintage Volume: 10, Bass: 10, Mid: 10, Treble: 10, Deep/Bright OFF, Master Volume: 10)
TONE CONTROLS		
VINTAGE CHANNEL	**BASS:**	10dB range @ 40Hz (Mid: 5, Treble: 5)
	MID:	15dB range @ 400Hz (Bass: 5, Treble: 5)
	TREBLE:	9dB range @ 4kHz (Bass: 5, Mid: 5)
OVERDRIVE CHANNEL	**BASS:**	±15dB @ 80Hz (DEEP: -18dB @ 640Hz)
	MID LEVEL / FREQ:	±18dB @ 200Hz – 3.3kHz
	TREBLE:	±15dB @ 4kHz (BRIGHT: +10dB @ 6kHz)
XLR LINE OUTPUT	**IMPEDANCE:**	50Ω balanced
	MAXIMUM OUTPUT:	+15dBu, 600Ω
POWER AMP	**INPUT IMPEDANCE:**	20kΩ balanced (@ Power Amp Input Jack)
	INPUT SENSITIVITY:	1.0V RMS (0dBV) for full power
POWER OUTPUT:		500W into 4Ω 350W into 8Ω
TUBE COMPLEMENT:	**Preamp**	2x 12AX7 (0013341000)
FOOTSWITCH:		1-Button Vintage (0057172000)
DIMENSIONS	**HEIGHT:**	8.6 in (21.7 cm)
	WIDTH:	22.7 in (57.6 cm)
	DEPTH:	10.5 in (26.7 cm)
WEIGHT*:*		17 lb (7.7 kg)

Product specifications are subject to change without notice

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SERVICE NOTES

1. **REAR GRILLE REMOVAL** is accomplished by removing six (6) screws with washers.

2. **CHASSIS REMOVAL** is accomplished by removing four (4) chassis mounting screws and chassis straps at the cabinet top and removing four (4) wood screws on the underside at the back of the chassis. The chassis can now slide backward and be removed from the cabinet.

3. **PREAMP CONTROL PCB REMOVAL** is accomplished by first removing twelve (12) knobs, nuts, and washers on the controls (first use a small flat screwdriver to loosen the set screw on the knob); removing twelve (12) nuts and washers at the controls; disconnect the three ribbon cables at P102A-104A from the tube PCB; cut the cable tie to the Power jewel LED wires and remove the LED from the jewel. Slowly pull the PCB back from the chassis holes angling the PCB upwards to clear the headers on the tube PCB, and finally disconnect the component side ribbon cable P109 (connected to channel select switch).

4. **PREAMP TUBE PCB REMOVAL** is accomplished by first removing the two (2) preamp tubes and shields; disconnecting the coax cable at P101B and ribbon cables at P105A and P106A; removing six (6) PCB mounting screws. This PCB will now lift out of the chassis.

5. **INPUT PCB REMOVAL** is accomplished by removing two (2) nuts and washers from the input jacks. Slide the PCB backwards and disconnect the coax cable at P101A.

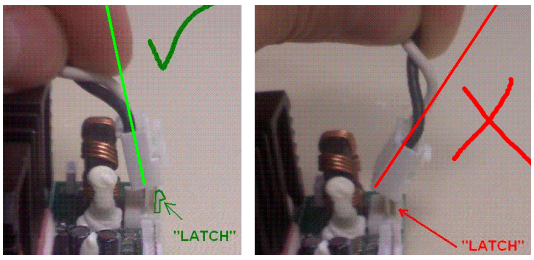
6. **INTERFACE PCB ASSEMBLY REMOVAL** first requires disconnecting the ribbon cables at P301B, P102A, P105B, P106B, P107A, P108A, P110A, and P111A cutting any cable ties. Then remove the four (4) PCB mounting screws.

7. **SMPS (POWER SUPPLY) PCB ASSEMBLY REMOVAL** first requires disconnecting the ribbon cable at PW301 and black/white primary wires at P300. Then remove the four (4) mounting screws from the outside of the chassis. The PCB should now slide out from the under the LED PCB (towards the fan) and lift out of the chassis.

8. **SPEAKER PCB REMOVAL** is accomplished by first disconnecting the fan wires at P109, the ribbon cables at P103A, P110B, and disconnect the speaker wire connector from the power module at header P100. Then remove the four (4) screws holding the Speakon® with 1/4in combo connectors and slide the PCB towards the center of the chassis and lift up to remove it.

9. **POWER PCB REMOVAL** is accomplished by first removing the polycarbonate air tunnel (baffle) by removing five (5) sheet metal screws; removing six (6) PCB mounting screws; disconnect wires/ribbon cables at headers P100 and P101-103. Slowly lift the PCB out of the chassis.

   NOTE: When removing and re-installing the larger connector on the ICEpower PCB, hold it at an angle leaning towards the center of the ICEpower PCB (away from the plastic latch) as shown here in this photo:



   This is very important. Installing the connector incorrectly, at an angle towards the latch (shown above-right), will cause permanent damage to the connector contacts. In the event of contact damage (intermittent or failed connection), the connector will require service (contact replacement) or replacement (new wire-set with connector).

11. **FAN REMOVAL** is accomplished by first removing the six (6) bracket mounting screws from the bottom of the chassis. Then remove

the four (4) long screws securing the fan to the bracket.

12. REAR I/O PCB REMOVAL is accomplished by removing four (4) nuts and washers from the rear panel jacks (including one (1) insulated washer at PREAMP OUTPUT); removing the knob and nut and washer at the LEVEL control; removing two (2) screws at the XLR jack; disconnecting two (2) ribbon cables at P107B and P108B. Slide the PCB back out of the mounting holes and angle up towards the open chassis to remove. The PREAMP OUTPUT jack has a flanged insulating washer on the inside.

PCB EXCHANGE POLICY

Parts marked with a single asterisk (*****) in the Part Lists are not field replaceable. If a failure due to one of these components is detected, please contact the FMIC Customer Service Department to order the complete PCB Assembly.

CIRCUIT DESCRIPTION

This section provides concise information about new or unusual circuitry designs incorporated into this amplifier model. The purpose is to aid the service technician by providing insight into the design areas most likely to become obstacles in troubleshooting. Information is focused for its effective use while maintaining the security of Fender® proprietary information wherever possible.

PRE-AMPLIFIER

Refer to Combined Service Diagrams 0090764000 (preamp), 770723700 (interface), and 77072400 (SMPS).

The instrument signal flows from the input jacks 1 or 2 (-6dB) directly to the first tube stage V1-B which presents a high-impedance to the instrument. V1-B drives buffer amplifiers U2-A to provide a Tuner Output without loading down the tube output. V1-B also drives a classic Fender tone stack EQ circuit, made up of potentiometers R9-11 and passive components C2-4 and R8. The switch section of potentiometer R9 connects C4 and R7 to change the tone stack response and provide additional bass boost when the Bass knob is pulled out. Pulling out the Treble knob activates a fixed high frequency boost by connecting capacitor C6 which provides a high-frequency bypass for cathode resistor R16. Tube stage V1-A provides necessary buffering and recovery gain following the Volume and passive “cut only” tone controls.

V1-B plate signal is attenuated and drives U4-A in order to provide a Pre-EQ signal (for the XLR Line Output) and a ‘clean’ tube path for the Overdrive channel (via Blend control). This attenuated signal is also presented to the Overdrive channel gain section (V2 and associated components) via passive variable high pass filter components C16, R38, R39 with Gain control R39. JFET Q3 shunts this signal to ground when Overdrive channel is disabled. Front panel channel select switch (or the 1-button footswitch) controls JFETs Q1, Q3-7 to select the desired signal path - Vintage channel (Q1, Q3, Q5 and Q7 on) or an Overdrive channel (Q4 and Q6 on). U3-A and U4-B are gain recovery stages connecting high-impedance large voltage swing tube circuitry to subsequent lower impedance lower voltage swing solid-state circuitry. U3-B is a differrential buffer amplifier to break any ground loops before passing the Vintage channel signal to the channel select stage.

U5-A is a 3rd order low pass filter for high frequency band limiting of the tube overdrive signal with post distortion bass recovery. The Blend and OD Volume controls are buffered by U5-B, which has pre-emphasis at 1.5kHz. This is followed by differential buffer amp U6-A to break ground loops. U7-A is a

tone shaping circuit, activated by pull Deep switch on the Bass control, and pull Bright on the Treble control. Next are the active Bass and Treble tone controls at amplifier U7-B, along with the gyrator (simulated inductor) of U6-B for the Bass control. The Mid Level and Freq controls are isolated on amplifier U9-A, with U8-B buffering the tunable band-pass filter of U8-A. The Overdrive channel signal is then passed to the channel select stage at U10-A, with de-emphasis to reduce system noise above 1.5kHz.

The output of U10-A drives the Master volume gain stage at U10-B and a speaker emulator EQ stage of U1-B for Post-EQ signal (for the XLR Line Output). The output of U10-A drives a 2nd order high pass filter at U1-A.

The Preamp Output (J5) is ground isolated and buffered by U11-A and feeds the Power Amp Input jack (J6). Differential gain stage U11-B buffers the Power Amp Input to drive the power amplifier section. This output is feeds inverting buffer amplifier U402-A which is the control stage for the limiter. The ICEpower module has a differential input driven by U402-A (+) and inverter U402-C (-).

Both Pre and Post-EQ signals are presented to rear panel switch S1 for selection of the XLR Line Output signal source. Post-EQ signal passes thru a mid passive mid cut buffered by U402-D. The selected signal is buffered by U12-A which drives the Line Out Level control R137. Buffer U12-B drives the input of Line Driver U13-A providing a balanced output at XLR Line Out (J7).

Master volume control R104 has a 'Pull Mute' switch which controls JFETs Q1-Q7 to mute all outputs except the signal buffered by U2-B sent to the Tuner Output (J3). The ICEpower module has an ENABLE pin (low when muted) that mutes the speaker so power on/off transients are minimal.

ICEpower 125ASX2

The ICEpower 125ASX2 is a state of the art integrated digital power amplifier and switch mode power supply (SMPS). The ICEpower module operates at either 115VAC or 230VAC line voltage range depending on a jumper at P200 (115V) or P201 (230V). AC line voltage is applied at P100. Unregulated +/-24VDC are generated and supplied at P103 for external use and protected by F300 (T630mA, 250V) which will blow in the event of a short on the preamp PCBs. The differential analog inputs to the power amplifier are through P102 and the BTL (bridge tied load) power amplifier output is connected to P101.
NOTE: ICEpower modules use switching technology resulting in a high frequency carrier wave (>100kHz) at the output terminals. CAUTION: The amplifier output is not ground referenced!! Do not ground either terminal (i.e. with oscilloscope probe ground lead).
If left at maximum power output for a long time, internal thermal protection will pull the ENABLE (muting the output) and THERMAL pin low (turns off NPN Q405 to activate the PROTECT LED. Additionally, global over current protection (ie output short circuit) will pull the ENABLE (muting the output) and and OVERCURRENT pins low (turns off Q405 to activate the PROTECT LED). The PROTECT LED will remain active until the temperature has reduced to a safe level or the fault is removed and the THERMAL or OVERCURRENT and ENABLE pins go high (un-mutes output).

NOTE: In the event of a blown fuse (F300) on the +/-24VDC supply, the preamp PCBs should be investigated to determine cause of the blown fuse before replacing the ICEpower module, otherwise there is risk of blowing the fuse on the replacement module.

DELTACOMP™ + SOFT CLIP LIMITER

The speaker output at WJ400 is presented to comparator U401-A referenced to the raw +/-24VDC power supply rails provided by the ICEpower 125ASX2. In the presence of output signals below amplifier clipping the output of U401-A remains high (approx. +15VDC), reverse biasing diodes D400-403. The 4-pole attack/release filter (comprised of C403-406 and R411-414) remains discharged to zero volts (ground). At sufficient signal levels (near power amplifier clipping) the output of U401-A is driven low (approx. -15VDC). This allows the 4-pole filter to charge (negatively towards -15VDC) through attack timing resistor R434. As the base voltage of darlington PNP Q400 increases (negatively) above its Vbe, Q400 turns on sourcing current into bias current pin 1 of OTA

U404-A (via U403-D + Q401). The OTA outputs a current of opposite phase, proportional to the bias current in pin 1 and the signal presented to U404-A pin 3 (sampled from the input signal to the power amplifier) which flows into inverting node (pin 2, U402-A) reducing the output level of U402-A until the voltage at the base of Q400 is allowed to discharge to ground (below Vbe of Q400).

As Q400 first turns on it also sources current into bias pin 16 of OTA 404-C which is sampling the power amp input signal. As the input signal is driven harder (further into power amp clipping), the current sourced by U403-D + Q401 is clamped by D404 and the DeltaComp limiting transitions to soft clip limiting. Q400 continues to source bias current into U404-C producing an increasing voltage at U403-C. The outputs of U403-C and half wave rectifier U403-A combine to drive current (via U403-B + Q402) into the bias pin 1 of U404-A to produce a symmetrical soft-knee transfer curve.

Also, when the amplifier output reaches clipping levels, the low (near -15VDC) output of comparator U401-A drives the base of PNP Q404 to active the PEAK LED. The time constant of the PEAK LED is controlled by the charging/discharging of C427 via R444-445. Fast transient peaks won't activate the LED, but longer sustained peaks will increase the intensity of the LED. Flashing of the PEAK LED is normal, but operating with the PEAK LED on continuously for long periods runs the risk of invoking thermal protection at minimum (4ohm) loads.

SMPS POWER SUPPLY

The SMPS (switch mode power supply) is a regulated flyback design with universal mains input 100-240VAC. Full wave bridge rectifier (D300-303 and C301) develops +132 to +335VDC (depending on input AC) input to the transformer primary (pin 1). The other end of the winding (pin 3) is connected to the drain of a MOSFET internal to controller IC U300 (TOP256) which opens and closes the switch at a high frequency (66-132kHz depending on load). This supply is isolated as the primary circuit is not chassis ground referenced. The controller has output short circuit and over/under (input DC) voltage protection.

Current flows through the transformer primary winding when the switch is closed as if charging an inductor. When the switch closes the magnetic field collapses and the energy stored in the primary reverses polarity (or 'flies back') and is transferred to the secondary.

The secondary has 3 rectified DC outputs: +300V = D306, D309 + C314; +18V = D307 + C312; -18V = D308 + C313. The outputs (caps) stay charged up by the repeated current pulses when the switch opens. Output regulation is provided by feedback from the secondary through opto-coupler U301. The output is compared with a resistor divider (R314-315) to a 2.5V reference (U304), which provides a current path through the LED of U301. The bias winding (transformer pins 4-5 rectified by D305 + C306) provides a low DC voltage to supply current to the control pin 3 of controller U300. When output regulation is achieved, opto-LED current provides current into the base of opto-transistor which turns on and provides sufficient current in the control pin to stay biased just below +6VDC.

R318-319 and 33uF caps C315-316 provide additional filtering for +300VDC for the preamp tube plate supply. R320 helps bleed the caps when power is off. Post filtering for +/-18VDC (L2 + C317 and L3 + C318) removes high frequency ripple and feeds inputs to 3 terminal regulators U302-U303 to provide +/-15VDC supplies for op-amps and preamp tube filaments. U303 has additional heatsinking due to the additional current drawn when the fan is at maximum speed.

FAN SPEED CONTROLLER

At power on Q403 is off and the startup voltage applied to the fan at P109 is set by R437 and clamped by 10V zener D411 at approx +5VDC (minimum speed). Under normal operation, signal sampled from the speaker output charges C410 at the base of Q403. Slowly the base voltage will increase (more negative) turning on Q403 pulling the collector voltage up towards ground and increasing the voltage applied to the fan resulting in increased fan speed. Signals larger than 700mVrms (at TP9) are required for >30sec to reach the maximum fan speed at 12VDC.

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PARTS LIST: PREAMP - PCB ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0097066104	*PCB ASSY BASSMAN 500 PREAMP	**COMPLETE PCB ASSEMBLY**
1	0028458003	CAP AE RDL 1uF 50V 20%	C20
5	0028459003	CAP AE RDL 2.2uF 50V 20%	C13-14, C29, C82, C100
15	0028467003	CAP AE RDL 22uF 50V 20%	C9-10, C15 C28, C31, C37, C42, C46, C49, C53, C58, C61, C67-68, C71
3	0028471003	CAP AE RDL 47uF 50V 20%	C1, C72-73
1	0066025003	CAP CD 10pF 500V 5%	C50
2	0051413003	CAP CD 33pF 500V 5%	C41, C43
3	0051409003	CAP CD 68pF 500V 5%	C12, C69-70
3	0051960003	CAP CD 180pF 500V 10%	C8, C18, C21
10	0051406003	CAP CD 220pF 500V 10%	C59-60, C62-63, C65-66, C74-75, C79-80
1	0020867002	CAP CD 330pF 1000V 10%	C2
2	0051458003	CAP CD 470pF 500V 10%	C23, C81
15	0034788003	CAP CR .1uF 50V 20% .2" LS	C64, C77-78, C83-84, C90-99
2	0027255003	CAP MPF .001uF 100V 10%	C16, C57
1	0027256003	CAP MPF .0015uF 100V 10%	C26
1	0027257003	CAP MPF .0022uF 100V 10%	C56
1	0027261003	CAP MPF .0047uF 100V 10%	C39
2	0027262003	CAP MPF .0068uF 100V 10%	C35, C40
2	0027264003	CAP MPF .01uF 100V 10%	C36, C76
1	0041904003	CAP MPF .012uF 100V 10%	C24
6	0027267003	CAP MPF .022uF 100V 10%	C30, C32-34, C47-48
2	0027270003	CAP MPF .033uF 100V 10%	C25, C27
3	0027272003	CAP MPF .047uF 63V 10%	C85-87
2	0027275003	CAP MPF .068uF 100V 10%	C51-52
1	0027280003	CAP MPF .15uF 63V 10%	C6
1	0027281003	CAP MPF .22uF 63V 10%	C38
4	0027286003	CAP MPF .47uF 63V 10%	C54-55, C88-89
1	0033477003	CAP MPF .68uF 63V 10%	C17
1	0024823000	CAP MPF RDL .01uF 400V 10%	C19
1	0024839000	CAP MPF RDL .033uF 400V 10%	C5
4	0024854000	CAP MPF RDL .1uF 400V 10%	C3-4, C7, C22
1	0024862000	CAP MPF RDL .22uF 400V 10%	C11
1	0030936003	CAP PFF RDL .0022uF 50V 5%	C45
1	0030950003	CAP PFF RDL .022uF 50V 5%	C44
1	0054390000	CONTROL SNAPIN 5k 15A TAPER	R137 **LINE OUT LEVEL**
1	0051681000	CONTROL SNAPIN 25k2B DETENT	R89 **MID LEVEL**
2	0091144000	CONTROL SNAPIN 50k B TAPER	R11, R59 **MID, BLEND**
1	0037600000	CONTROL SNAPIN 100k B TAPER	R60 **O.D. VOLUME**
2	0037596000	CONTROL SNAPIN 1M 30A TAPER	R12, R39 **VOLUME, GAIN**
2	0090769000	CONTROL SNAPIN 50k2B DTNT w/DPDT	R82-83 **O.D. BASS, O.D. TREBLE**
3	0047780000	CONTROL SNAPIN 250k 30A w/DPDT	R9-10, R104 **BASS, TREBLE, MASTER**
1	0091145000	CONTROL SNAPIN 100k 10C DUAL	R94 **MID FREQ**
2	0064089001	DIODE 1N4003	D26-27
28	0006260001	DIODE 1N4448 SIGNAL	D1-25, D29-31
3	0072493000	HDR 2.5mm CTR 2 CKT SQ PIN	P109, P101A, P101B
10	0091148000	HDR 2.5mm CTR 6 CKT SQ PIN	P102A, P102B, P103A, P103B, P104A, P104B, P105A, P106A, P107B, P108B
1	0072486000	IC BAL LINE DRIVER DRV134	U13
2	0031611000	IC OP-AMP DUAL PC4560	U2, U11

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + * Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

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

shaded + ⚠ Both a unique Fender® part and a Safety Critical Part as defined above.

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PARTS LIST: PREAMP - PCB ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
10	0016795000	IC OP-AMP DUAL TL072	U1, U3-10, U12
6	0059889000	JACK STEREO R/A w/METAL BUSH	J1-6 **INPUT 1-2, FTSW, TUNER, PREAMP OUTPUT, PWR AMP INPUT**
1	0030755000	LED GREEN T-1 3mm DIFFUSED	D32 **VINTAGE**
1	0049948000	LED RED LONG LEAD LUMEX	D28 **OVERDRIVE**
2	0036178000	SPACER LED .5X .1 BRN	@ D28,D32
1	0055812000	LED TULIP ASSEMBLY	D33 **POWER**
2	0028861001	RES CF 1/2W 5% 3.3k LL	R148, R155
3	0025116001	RES CF 1/2W 5% 100k LL	R6, R15, R43
1	0039186001	RES CF 1/2W 5% 330k LL	R47
6	0024947001	RES CF 1/4W 5% 47ohm LL	R124, R131-132, R140-141, R163
1	0024952001	RES CF 1/4W 5% 100ohm LL	R145
5	0024956001	RES CF 1/4W 5% 220ohm LL	R122-123, R142-143, R146
2	0024965001	RES CF 1/4W 5% 1k LL	R144, R162
3	0024969001	RES CF 1/4W 5% 1.5k LL	R5, R16, R44
1	0024970001	RES CF 1/4W 5% 1.8k LL	R48
1	0024973001	RES CF 1/4W 5% 3.3k LL	R75
7	0024977001	RES CF 1/4W 5% 4.7k LL	R58, R63, R98-100, R112, R147
4	0024978001	RES CF 1/4W 5% 5.6k LL	R52-55
1	0028948001	RES CF 1/4W 5% 6.2k LL	R73
3	0024979001	RES CF 1/4W 5% 6.8k LL	R85, R95-96
9	0024981001	RES CF 1/4W 5% 10k LL	R4, R42, R64, R77, R84, R101-102, R108, R115
3	0024983001	RES CF 1/4W 5% 12k LL	R20, R50, R111
2	0029539001	RES CF 1/4W 5% 13k LL	R71-72
3	0024986001	RES CF 1/4W 5% 18k LL	R56, R113-114
5	0024987001	RES CF 1/4W 5% 22k LL	R37, R103, R150-151, R157
5	0024989001	RES CF 1/4W 5% 33k LL	R36, R61, R106, R109, R153
17	0024993001	RES CF 1/4W 5% 47k LL	R14, R19, R28-29, R34, R40, R51, R65, R78-80, R86-88, R97, R105, R149
1	0026507001	RES CF 1/4W 5% 62k LL	R7
2	0024995001	RES CF 1/4W 5% 68k LL	R2-3
3	0028153001	RES CF 1/4W 5% 75k LL	R90-91, R107
12	0024997001	RES CF 1/4W 5% 100k LL	R8, R18, R92-93, R110, R116, R121, R125-126, R138-139, R154
3	0025060001	RES CF 1/4W 5% 270k LL	R25, R57, R74
4	0025061001	RES CF 1/4W 5% 330k LL	R26, R35, R70, R81
5	0025065001	RES CF 1/4W 5% 470k LL	R38, R45-46, R49, R76
1	0025066001	RES CF 1/4W 5% 560k LL	R17
7	0025069001	RES CF 1/4W 5% 1M LL	R1, R27, R41, R62, R152, R156, R158
1	0025084001	RES CF 1/4W 5% 10M LL	R13
24	0015582001	RES MF 1/4W 1% 10.0k LL	R21-24, R30-33, R66-69, R117-120, R127-130, R133-136
2	0065392001	RES FILM 1W 5% 16ohm LL	R160-161
1	0028029001	RES FILM 1W 5% 1.5k LL	R159
2	0028091000	SWITCH PUSH SLFLK SHORT STROKE	S1-2
2	0048451000	BUTTON PUSH OFF WHITE	@ S1-2
2	0029167000	TUBE SOCKET 9-PIN PCB MOUNT	V1-2
1	0054261000	XLR CONNECTOR MALE RT ANGLE	J7
7	0041465003	XSTR N-CH JFET J113 TO-92	Q1-7
2	0016739003	XSTR NPN 2N4401 TO-92	Q9-10
1	0016742003	XSTR PNP 2N4403 TO-92	Q8

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + * Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

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

shaded + ⚠ Both a unique Fender® part and a Safety Critical Part as defined above.

Bassman® 500

(This is the model name for warranty claims)

PARTS LIST: INTERFACE - PCB ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	7707236004	*PCB ASSEMBLY BASSMAN 500 INTERFACE	**COMPLETE PCB ASSEMBLY**
5	0028458003	CAP AE RDL 1uF 50V 20%	C403-406, C427
1	0028467003	CAP AE RDL 22uF 50V 20%	C407
4	0028479003	CAP AE RDL 220uF 25V 20%	C410, C412, C429-430
1	0028485003	CAP AE RDL 470uF 16V 20%	C431
1	0028492000	CAP AE RDL 1000uF 16V 20%	C411
1	0051457003	CAP CD 100pF 500V 5%	C400
1	0051458003	CAP CD 470pF 500V 10%	C409
9	0034788003	CAP CD .1uF 50V 20% .20"	C419-426, C428
1	0027272003	CAP MPF .047uF 63V 10%	C401
1	0027280003	CAP MPF .15uF 63V 10%	C402
18	0006260001	DIODE 1N4448 SIGNAL	D400-410, D412-416, D420-421
1	0027329001	DIODE ZEN 1N5228B 3.9V 5% LL	D417
1	0031635001	DIODE ZEN 1N5240B 10V 5% LL	D411
1	7707315000	HDR 2.5mm CTR 2 CKT EH	P109
4	0091148000	HDR 2.5mm CTR 6 CKT SQ PIN	P105B, P106B, P107A, P108A
3	0076662000	HDR 2MM CTR 3 CKT	P111A, P103A, P111B
2	7707316000	HDR 2MM CTR 4 CKT	P110A, P110B
1	7707317000	HDR 2MM CTR 6 CKT	P301B
1	0077623000	HDR 2mm CTR 8 CKT SQ PIN	P102A
1	0016795000	IC OP-AMP DUAL TL072	U401
2	0081372000	IC OP-AMP QUAD TL074	U402-403
1	0069312000	IC OTA LM13700M SMT PDIP	U404
2	7707318000	CONNECTOR SPEAKON 1/4IN COMBO PCB	J200-201
1	0070997000	LED 3mm T-1 SUPER BRIGHT YELLOW	D418 **PEAK**
1	0049948000	LED RED LONG LEAD LUMEX	D419 **PROTECT**
2	0036178000	SPACER LED .5X .1 BRN	@ D418-419
3	0024947001	RES CF 1/4W 5% 47ohm LL	R436, R438-439
2	0024952001	RES CF 1/4W 5% 100ohm LL	R403, R410
4	0024973001	RES CF 1/4W 5% 3.3k LL	R406-407, R442, R447
1	0024975001	RES CF 1/4W 5% 3.9k LL	R434
2	0024977001	RES CF 1/4W 5% 4.7k LL	R415, R421
2	0024979001	RES CF 1/4W 5% 6.8k LL	R417-418
1	0025942001	RES CF 1/4W 5% 7.5k LL	R428
1	0024981001	RES CF 1/4W 5% 10k LL	R441
1	0024987001	RES CF 1/4W 5% 22k LL	R422
3	0024993001	RES CF 1/4W 5% 47k LL	R408-409, R444
1	0024995001	RES CF 1/4W 5% 68k LL	R448
4	0024997001	RES CF 1/4W 5% 100k LL	R416, R419-420, R435
3	0025069001	RES CF 1/4W 5% 1M LL	R445, R450-451
8	0015582001	RES MF 1/4W 1% 10.0k LL	R402, R404-405, R423-427
2	0023504001	RES MF 1/4W 1% 30.1k LL	R432-433
8	0016971001	RES MF 1/4W 1% 33.2k LL	R400-401, R411-414, R430-431
1	0016739003	XSTR NPN 2N4401 TO-92	Q405
1	0016742003	XSTR PNP 2N4403 TO-92	Q404
4	0014408003	XSTR PNP DARLNGTN MPSA63 TO-92	Q400-403
1	7707248000	CABLE ASSY VH 4CKT 2 COND 6"	@ WJ400 (WHT), WJ401 (BLK)
1	7707319000	RES MF 1/4W 1% 11.5k LL	R429
1	0027344001	RES FILM 1W 5% 270ohm LL	R437

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + * Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

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

shaded + ⚠ Both a unique Fender® part and a Safety Critical Part as defined above.

Bassman® 500

(This is the model name for warranty claims)

PARTS LIST: SMPS - PCB ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	7707239000	*PCB ASSEMBLY SMPS 300V+/-15V 100-240VAC	**COMPLETE PCB ASSEMBLY**
4	REF	CAP 0805 CER .1uF 25V 5%	C319-322
2	REF	CAP AE RDL 100uF 25V (11 mm x 6.3 mm)	C317-318
3	REF	CAP AE RDL 10uF 50V 20%	C306, C323-324
1	REF	CAP AE RDL 220uF 25V (11.5 mm x 8 mm)	C312
1	REF	CAP AE RDL 470uF 25V (20 mm x 8 mm)	C313
1	REF	CAP AE RDL 47uF 10V (11 mm x 5 mm)	C303
1	REF	CAP AE RDL 47uF 50V 20%	C310
1	REF	CAP AE RDL 47uF 400V (25 mm x 16 mm)	C301
2	REF	CAP AE RDL 33uF 350V (20 mm x 12.5 mm)	C315-316
1	REF	CAP AE RDL 10uF 350V (20 mm x 10 mm)	C314
1	REF	CAP CD 68pF 1000V 10%	C307
2	REF	CAP CD 68pF 500V 5%	C308-309
3	REF	CAP CD 2.2nF 250VAC Y5U Y-Class	C305, C328-329
1	REF	CAP MPF .068uF 100V 10%	C325
2	REF	CAP MPF .33uF 275VAC X2 10%	C300, C327
1	REF	CAP SF .1uF 100V 10%	C304
4	REF	DIODE 1N4006 800V 1A DO-41	D300-303
1	REF	DIODE 1N4934 100V 1.00A Fast Recovery, 200ns	D305
2	REF	DIODE MUR110 100V 1A Ultrafast Recovery, 30ns	D307-308
3	REF	DIODE MUR180E 800V 1A	D304 D306 D309
1	REF	DIODE P6KE200A 200V 5W	D318
6	REF	DIODE SMT 1N4448 SIGNAL	D311-315, D317
1	REF	FUSE AXIAL 215 SERIES T1A H 250V	F1
1	REF	HDR .156 CTR 3 CKT 2 PIN	P300
1	REF	HDR 2MM CTR 6 CKT SQ PIN	PW301
1	REF	IC CONTROLLER TOP256EG, eSIP-7C	U300
1	REF	IC REGULATOR +15V MC7815CT	U302
1	REF	IC REGULATOR -15V MC7915CT	U303
1	REF	IC TL431 2.495V Shunt Regulator 2% TO-92	U304
1	REF	IC LTV817A Optocoupler 35V CTR 80 - 160 %	U301
1	REF	INDUCTOR 6mH, 1.6 A	L1
2	REF	INDUCTOR 3.3µH, 2.66 A	L2-3
3	REF	RES 0805 METAL FILM 1/8W 1% 10.7k	R315, R317, R322
1	REF	RES 0805 METAL FILM 1/8W 1% 24.3ohm	R312
1	REF	RES 0805 METAL FILM 1/8W 1% 66.5k	R314
3	REF	RES 0805 METAL FILM 1/8W 1% 10.7k	R315, R317, R322
1	REF	RES 0805 METAL FILM 1/8W 1% 24.3ohm	R312
1	REF	RES 0805 METAL FILM 1/8W 1% 66.5k	R314
1	REF	RES 0805 THICK FILM 1/8W 5% 1k	R313
1	REF	RES 0805 THICK FILM 1/8W 5% 6.8ohm	R307
2	REF	RES 1206 THICK FILM 1/4W 5% 160ohm	R309-310
2	REF	RES 1206 THICK FILM 1/4W 5% 2M	R302-303
2	REF	RES 1206 THICK FILM 1/4W 5% 1.5M	R300-301
1	REF	RES 2010 THICK FILM 1/2W 5% 330k	R320
1	REF	RES 2010 THICK FILM 1/2W 5% 680ohm	R308
2	REF	RES MOX FP 1/4W 5% 470ohm LL	R318-319
1	REF	XFMR POWER SWITCHMODE 300V +/-15V	T1
1	REF	HEATSINK TO-220 VERT W/TABS	@ U300
1	REF	CLIP HTSNK PLASTIC ESIP	@ U300

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

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shaded + ⚠ Both a unique Fender® part and a Safety Critical Part as defined above.

Bassman® 500

(This is the model name for warranty claims)

PARTS LIST: **PREAMP - PCB ASSEMBLY**			
QTY.	**PART #**	**DESCRIPTION**	**REFERENCE DESIGNATION**
1	REF	SCRW M 6-32x1/4 PHP BLX	@U300
1	REF	NUT 6-32 HEX EXT LOCK	@U300
1	REF	HEATSINK TO-220 W/TAB .375"	@U303
1	REF	SCRW M 4-40x3/8 PHP BLX	@U303
1	REF	NUT HEX 4-40 EX LOCK	@U303
1	REF	WSHR SHLDR NYL 1/8x1/4	@U303
1	REF	INSULATOR SILICONE TO-220 NARROW	@U303

PARTS LIST: **CHASSIS ASSEMBLY**			
QTY.	**PART #**	**DESCRIPTION**	**REFERENCE DESIGNATION**
2	5550112406	TUBE 7025/12AX7WC 12AX7WC GT-12AX7-R	**PREAMP TUBES V1-2**
2	0023598000	TUBE SHIELD	@ PREAMP TUBES
2	0064512000	COLLAR TUBE SHIELD 9PIN	@ PREAMP TUBES
1	0054798000	JEWEL ASSY LED	**POWER JEWEL**
1	0031625000	NUT HOLDER PILOT LIGHT 11/16-27	@ POWER JEWEL
12	0024604000	Knob blk w/wht stamp 1-10	@ CONTROLS
1	0037835000	SWITCH SLIDE SPST	**CH SELECT SWITCH**
2	0027979000	SCRW M 4-40X1/4 PH BH NI	@ CH SEL SWITCH
6	0016352000	NUT HEX 3/8-32x3/32 TK NI	@ INPUT JACKS/REAR JACKS
6	0031153000	WSHR FLAT 3/8x.614 NI	@ INPUT JACKS/REAR JACKS
1	0026401000	WSHR SHLDR FIBER 3/8x5/8	@ INSULATED JACK (PRE OUT)
1	0027520000	WSHR FLAT .380x.630 FIBER	@ INSULATED JACK (PRE OUT)
1	0054419000	KNOB ROTARY 180 SS W/CHR	@ **REAR CONTROL (LINE LVL)**
1	7707232000	BRACKET FAN BASSMAN 500	@ FAN
1	7707234001	BRACKET AIR BAFFLE BASSMAN 500 LFT	@ BRACKET (PRIMARY/FAN WIRES)
1	7707234002	BRACKET AIR BAFFLE BASSMAN 500 RT	@ BRACKET
1	0071275000	SCRW TF 6-32X1.25 PHP ZI	@ FAN/BRACKET
1	0021568000	SCRW M 6-32X3/16 PHP NI	@ CHS GND
1	0091149000	CABLE ASSY XH 2-CKT COAX 5"	@ P101A-B
1	0091150000	CABLE ASSY XH 2-CKT 3" UNTERMINATED	@ CH SEL SWITCH (SOLDERED) TO P109
3	0091151000	CABLE ASSY XH 6-CKT 2"	@ P102A-B, P103A-B, P104A-B
1	7705025000	⚠SWITCH PWR (SS-120-BEL3BB81V)	**POWER SWITCH**
6	0051155000	SCRW SMB #4X3/8 PHP BLX	@ XLR, SPEAKONS
2	0091889000	CABLE ASSY XH 6-CKT 8"	@ P105A-B, P106A-B
1	0077128000	CABLE ASSY VH 3-CKT 2mm 10"	@ P103A TO P103 (PWR MODULE)
1	7707312000	CABLE ASSY PH 3-CKT 2mm 18.5"	@ P111A TO P111B (LED PCB)
1	7707313000	CABLE ASSY PH 4-CKT 2mm 8"	@ P110A TO P110B (SPKR PCB)
1	7707314000	CABLE ASSY PH 6-CKT 2mm 16"	@ P301B TO PW301 (SMPS PCB)
1	7707249000	⚠CABLE ASSY VH 3CKT 2 COND DUAL	PRIMARY WIRES SW TO PWR/SMPS
1	0077624000	CABLE RIBBON VH 8 CKT 10"	@ INTERFACE TO PWR MODULE

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + * Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

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shaded + ⚠ Both a unique Fender® part and a Safety Critical Part as defined above.

Bassman® 500

(This is the model name for warranty claims)

PARTS LIST:	CHASSIS ASSEMBLY		
QTY.	**PART #**	**DESCRIPTION**	**REFERENCE DESIGNATION**
1	7707230000	*PANEL FRONT BASSMAN 500	
1	0077199000	⚠PWR AMP MODULE ICE POWER 125ASX2	**POWER SUPPLY/AMPLIFIER MODULE**
1	7707246000	⚠FAN ASSY 12VDC 60X60X25MM LOW CFM	**FAN**
1	7707233000	BAFFLE AIR BASSMAN 500	**COVERS FAN AND POWER MODULE**
10	0025804000	STANDOFF 6-32x1/2x1/4 AL RND	@ PCBS
30	0041595000	SCRW 6-32x3/16 PHP STL ZI SEMS	PCB MOUNTING SCREWS
20	0038900000	SCRW TF 6-32X1/4 PHP ZI	@ TUBE COLLAR/FAN BRKT/BAFFLE

PARTS LIST:	END ITEM ASSEMBLY		
QTY.	**PART #**	**DESCRIPTION**	**REFERENCE DESIGNATION**
1	0057172000	FTSW 1BTN VINT UNSHLD	
1	0069133000	⚠CORD PWR W/IEC CONN DOM 15A	**110/120V UNITS ONLY**
-	0047249000	⚠CORD PWR W/IEC CONN 230V UK	230V UK UNITS ONLY
-	0047250000	⚠CORD PWR W/IEC CONN 250V	240V UNITS ONLY
-	0047251000	⚠CORD PWR W/IEC CONN 230V	230V EUR/220V ROK UNITS ONLY
-	0069142000	⚠CORD PWR W/IEC CONN 100V 15A	100V UNITS ONLY
-	0057674000	⚠CORD PWR W/IEC CONN 230V ARG	220V ARG UNITS
1	0065990000	CABLE ASSY SPEAKON TO SPEAKON2	
4	0024752000	STRAP CHASSIS 4-1/2" NICKEL	@ CHASSIS
4	0037247000	SCRW M 8-32x1 OHP NI	@ CHASSIS
6	0037215000	WSHR C/SUNK NICKEL #6	@ REAR GRILLE
6	0037952000	SCRW SMA #6x1 OHP NI	@ REAR GRILLE
1	0023192000	NAMEPLATE FNDR 65 TWIN	
3	0022152000	SCRW SMA 3x1/2 OHP BLX	@ NAMEPLATE
4	9904101110	SCRW PB 8x5/8 PHP BLX	@ CHASSIS REAR
1	7707250000	COVER BASSMAN 500	

PARTS LIST:	CABINET ASSEMBLY		
QTY.	**PART #**	**DESCRIPTION**	**REFERENCE DESIGNATION**
1	7707226000	*CABINET ASSEMBLY BASSMAN 500	**COMPLETE CABINET ASSEMBLY**
4	0029071000	CORNER NOTCHED NICKEL 1/2" RADIUS	
4	0026571000	SCRW SMAB 8x5/8 THP NI	@ CORNERS
4	0051049000	FOOT RUBBER 1.5 DIA	@ CAB BOTTOM
4	0033380000	SCRW SMAB 8x1 THP BLX	@ FEET
1	0049094000	HANDLE MLD BLK	@ CAB TOP
4	7704305000	SCRW M 8-32x3/4 OHP NI	@ HANDLE
4	0064162000	NUT T 8-32x1/2 STR 3 PRNG BLX	@ HANDLE

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + * Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

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shaded + ⚠ Both a unique Fender® part and a Safety Critical Part as defined above.

Service Diagram List

Service Diagram (Schematic)……..……..Bassman 500 Preamp PCB
Service Diagram (PCB Assembly)……Bassman 500 Preamp PCB
Service Diagram (Schematic)……..Bassman 500 Interface PCB
Service Diagram (PCB Assembly)……..Bassman 500 Interface PCB
Service Diagram (Schematic)……...SMPS +300V, +/-15V 100-240VAC Input PCB
Service Diagram (PCB Assembly)……SMPS +300V, +/-15V 100-240VAC Input PCB

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR1160	13-JUN-11	dBL
B	PR2809	14-OCT-14	dBL

COMPONENTS ON TUBE PCB

INPUT PCB

PARTS ON BREAKAWAY REAR I/O PCB

COMPONENTS ON TUBE PCB

TO POWER AMP ASSY

PARTS ON BREAKAWAY REAR I/O PCB

*BASSMAN 500
R129-130 = 10.0k 1%

NOTES: (UNLESS OTHERWISE NOTED)

1. ALL RESISTORS IN OHMS, 5%, 1/4W.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
3. ALL POLARIZED CAPACITORS IN uF, 20%; 50V MINIMUM.
4. ALL DIODES ARE IN4448.
5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0090765000 AND PCB ASSEMBLIES P/N 0090766000 (SB/100T) AND P/N 0090766100 (500).
6. AC AND DC VOLTAGES ARE READ WITH RESPECT TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
   UNIT AT RATED LINE VOLTAGE.
   ALL PCBS INTERCONNECTED AND INSTALLED IN CHASSIS, ALONG WITH CONNECTION TO SUPER BASSMAN POWER AMP CHASSIS.
   NO INPUT FOR TESTPOINTS TP1-13.
   FOR TESTPOINTS TP14-46, CONNECT A 20mVrms 1kHz SIGNAL TO INPUT 1 (J1). SELECT VINTAGE FOR TP14-22 AND TP37-46.
   VINTAGE VOLUME AND TONE CONTROLS AT 10 (FULL CW).
   GAIN AT 1, OVERDRIVE VOLUME AT 10 (FULL CW)
   ALL OTHER CONTROLS AT 5-1/2 (50% ROTATION).
   FOR TESTPOINTS TP23-36, SELECT OVERDRIVE,
   VOLTAGES MAY VARY BY +/-20%.
7. LAST REFERENCE DESIGNATORS: C100, D33, J7, P109, Q10, R163, S2, TP46, U13, V2.
   NOT USED: P1-100

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

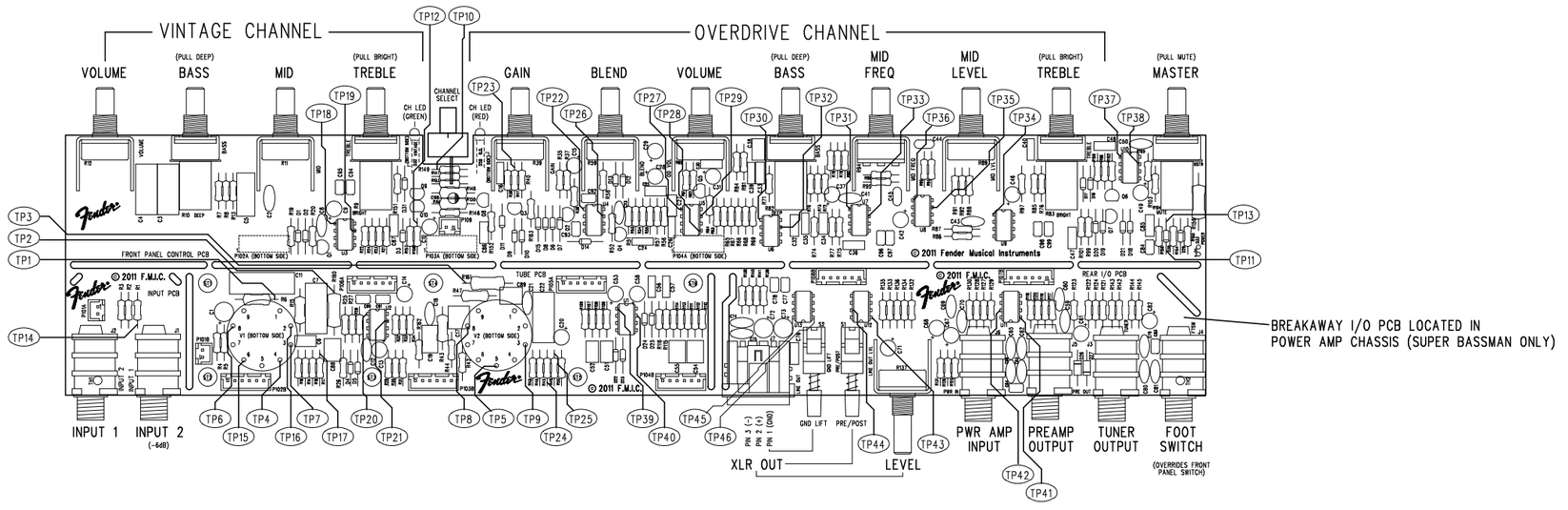
CHECKED BY: _____
DATE: _____
APPROVED BY: _____
DATE: _____
DRAWN: D. LEWIS ENGR: D. LEWIS
DATABASE FILE: Z1160S1.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
SUPER BASSMAN / BASSMAN 100T
PREAMP PCB

SIZE	DRAWING NUMBER	REV.
D	0090764000	B

RELEASE DATE: 13-JUN-11 SHEET: 1 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR1160	13-JUN-11	dBL
B	PR2809	14-OCT-14	dBL



FILM/DWG:	SERVICE DIAGRAM
DATABASE: Z1160P1.PCB	DATE: 13-JUN-11

2. THE FOLLOWING PCB INTERCONNECTS ARE REQUIRED:
   COAX CABLE CONNECTED FROM P101A – P101B.
   6CKT RIBBON CABLES CONNECTED FROM P102A – P102B, P103A – P103B, P104A – P104B.
   2X6CKT RIBBON CABLE CONNECTED AT P105A AND P106A TO POWER CHASSIS (SUPER BASSMAN ONLY).
   6CKT RIBBON CABLES CONNECTED FROM P105A – P105B, P106A – P106B (BASSMAN 100T AND BASSMAN 500)
   6CKT RIBBON CABLES CONNECTED FROM P107A – P107B, P108A – P108B (NOTE: INSIDE POWER CHASSIS ON SUPER BASSMAN).
1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

DRAWN: D. LEWIS | ENGR: D. LEWIS

DATABASE FILE: Z1160P1.PCB

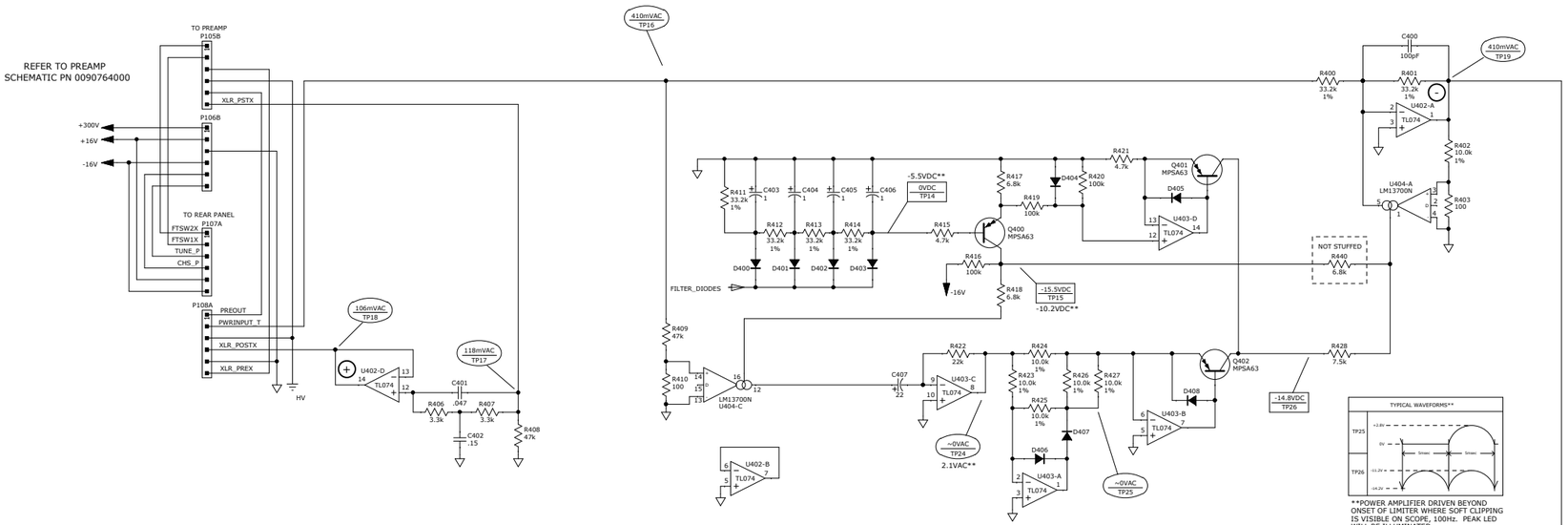
Fender® MUSICAL INSTRUMENTS
Corona, CA U.S.A.

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
SUPER BASSMAN / BASSMAN 100T
PREAMP

SIZE	DRAWING NUMBER	REV.
D	0090764000	B

RELEASE DATE: 13-JUN-11 | SHEET 2 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2809	01-OCT-14	dBL



⚠7 CAUTION: OUTPUT IS NOT GROUND REFERENCED! DO NOT GROUND EITHER TERMINAL (I.E. WITH OSCILLOSCOPE PROBE GROUND LEAD) OR UNIT WILL BE DAMAGED. VIEW OUTPUT WITH 'SCOPE IN DIFFERENTIAL MODE (RECOMMENDED) OR FLOAT 'SCOPE FROM EARTH GND.

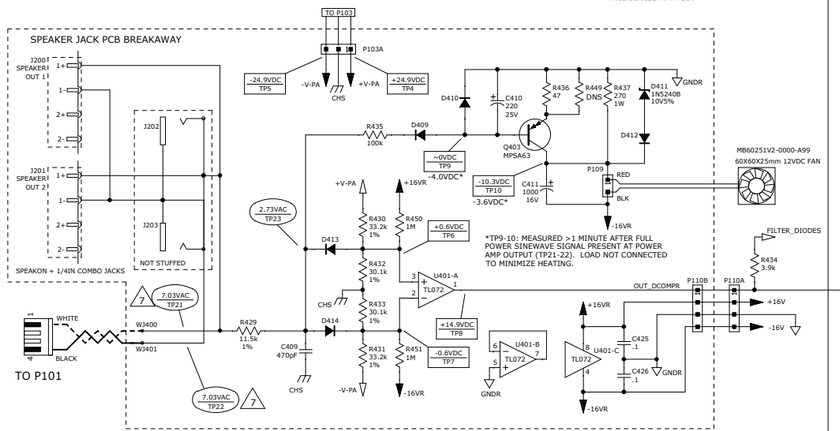
TP21-22: AC VOLTAGES SHOWN ARE FOR MEASUREMENTS TAKEN BETWEEN TP AND CHASSIS GROUND. THE VALUES WILL BE TWICE AS LARGE IF MEASURED WITH THE VOLMETER BETWEEN DIRECTLY ACROSS THE AMPLIFIER OUTPUT (BETWEEN TP 21-TP22).

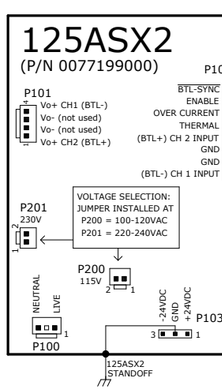
NOTE: POWER MODULE USES SWITCHING TECHNOLOGY RESULTING IN HIGH FREQUENCY NOISE (>100kHz) AT THE OUTPUT. RECOMMEND USING A LOW-PASS FILTER (SUCH AS THE AP AUX-0025 SWITCHING AMPLIFIER MEASUREMENT FILTER) FOR OPTIMUM VIEWING AND MEASURMENT OF OUTPUT SIGNALS.

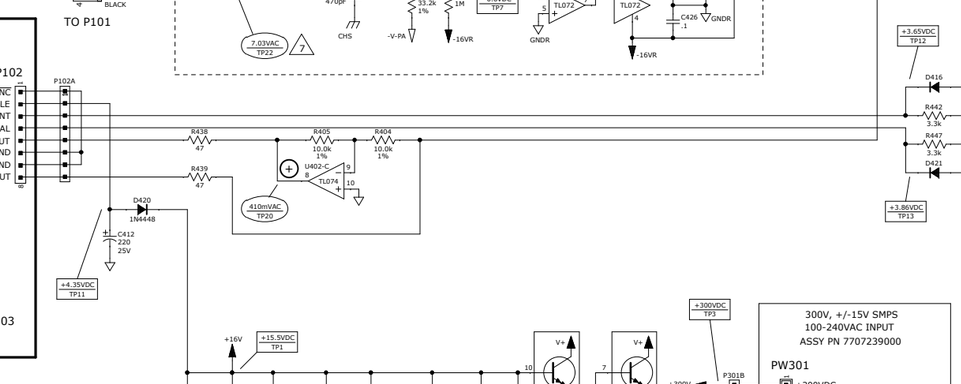
OUTPUT POWER TEST: ⚠2

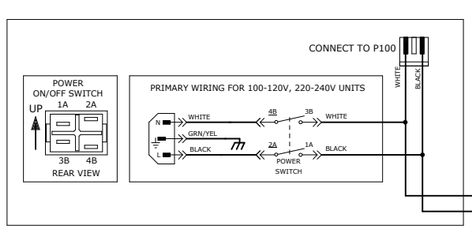
RESISTIVE LOAD CONNECTED AT J200 OR J201 (SPEAKON OR 1/4 IN)
RATED LINE VOLTAGE SUPPLIED TO UNIT
SINEWAVE INPUT SIGNAL APPLIED TO PWR AMP IN JACK
OUTPUT VOLTAGE MEASURED WITH A DVM ACROSS RESISTIVE LOAD
OSCILLOSCOPE PROBE MAY BE CONNECTED EITHER SIDE OF LOAD, BUT **DO NOT GROUND EITHER (+ OR -) CONNECTION TO THE LOAD!**
UNDER THESE CONDITIONS, ADJUST INPUT TO VERIFY THE FOLLOWING:

LOAD	FREQ = 100Hz	FREQ = 1kHz
8 OHM (ONSET OF LIMITER)	221W (42.0Vrms) < 0.1% THD	222W (42.2Vrms) < 0.1% THD
4 OHM (ONSET OF LIMITER)	400W (40.0Vrms) < 0.1% THD	400W (40.0Vrms) < 0.1% THD









⚠2 SEE OUTPUT POWER TEST

6. AC AND DC VOLTAGES ARE READ WITH RESPECT TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
   UNIT AT RATED LINE VOLTAGE.
   ALL PCBS INTERCONNECTED AND INSTALLED IN CHASSIS
   ALL CONTROLS SET PER PREAMP SCHEMATIC 0090764000.
   TP1-15, TP26 ARE MEASURED WITH NO INPUT SIGNAL DC VOLTAGES MAY VARY BY +/-10%.
   TP16-25 ARE MEASURED WITH THE FOLLOWING SIGNAL: 20mVrms, 100Hz, SINE WAVE APPLIED TO INPUT JACK (J1) AC VOLTAGES MAY VARY BY +/-20%.
5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 7707235000 AND PCB ASSEMBLY P/N 7707236000.
4. ALL DIODES ARE 1N4448.
3. ALL POLARIZED CAPACITORS IN uF, 20%; 25V MINIMUM.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
1. ALL RESISTORS IN OHMS, 5%; 1/10W.

NOTES: (UNLESS OTHERWISE NOTED)

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

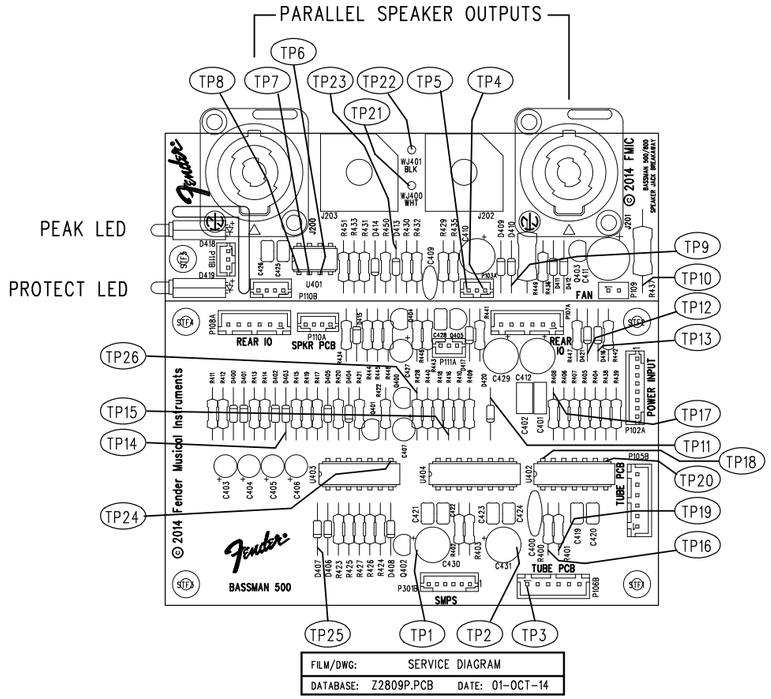
CHECKED BY: _____
DATE: _____
APPROVED BY: _____
DATE: _____
DRAWN: D. LEWIS | ENGR: D. LEWIS
DATABASE FILE: Z2809S.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
BASSMAN 500
INTERFACE PCB

SIZE	DRAWING NUMBER	REV.
D	7707237000	A

RELEASE DATE: 01-OCT-14 | SHEET: 1 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2809	01-OCT-14	dBL



FILM/DWG:	SERVICE DIAGRAM
DATABASE: Z2809P.PCB	DATE: 01-OCT-14

1. SEE SHEET 1 FOR PROPER CONNECTION, TEST CONDITIONS, AND TEST POINT VALUES.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____

DRAWN: D. LEWIS ENGR: D. LEWIS

DATABASE FILE: Z2809P.PCB

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

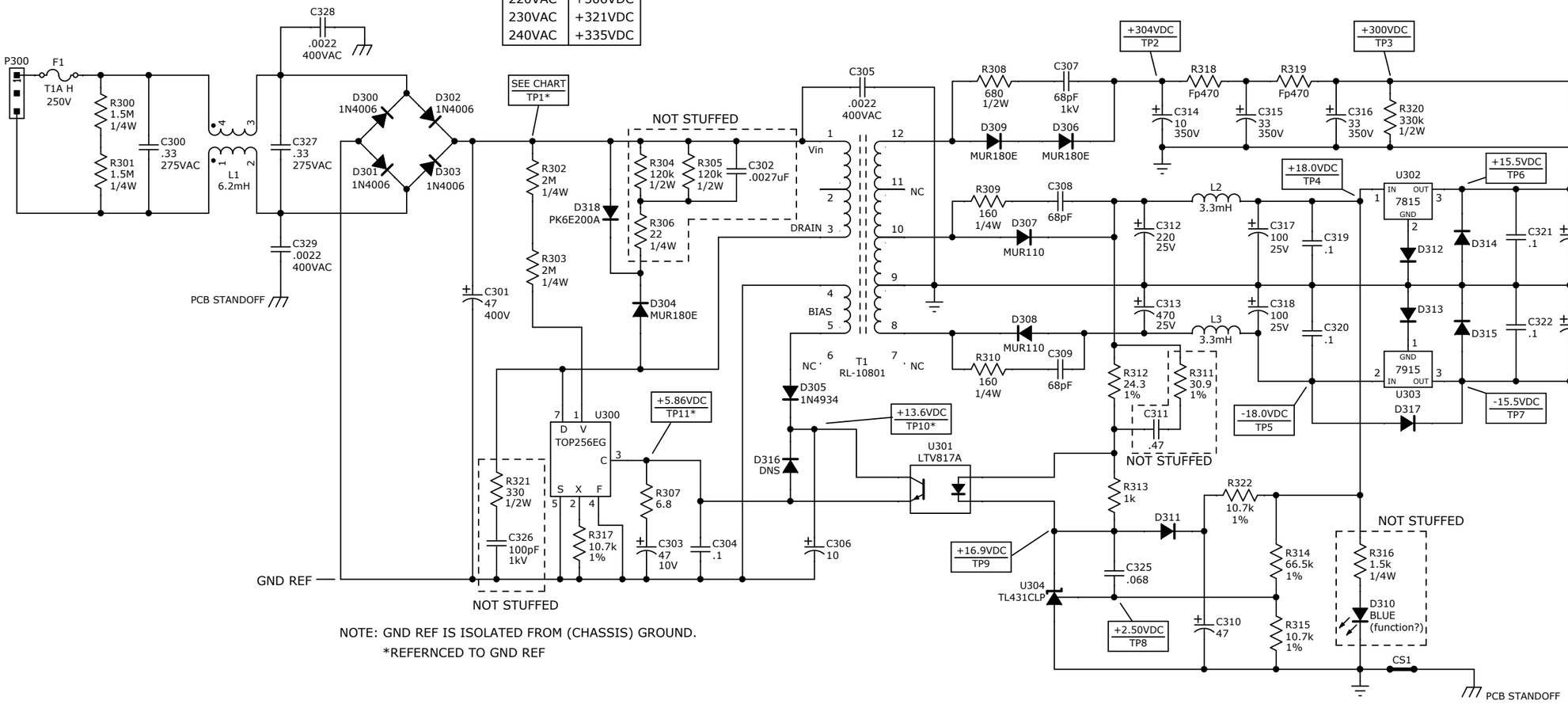
TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
BASSMAN 500
INTERFACE PCB

SIZE	DRAWING NUMBER	REV.
C	7707237000	A

RELEASE DATE: 01-OCT-14 SHEET 2 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2809	25-SEP-14	dBL

TP 1 (BULK DC)	
100VAC	+132VDC
120VAC	+162VDC
220VAC	+306VDC
230VAC	+321VDC
240VAC	+335VDC



NOTE: GND REF IS ISOLATED FROM (CHASSIS) GROUND.
*REFERNCED TO GND REF

NOTES: (UNLESS OTHERWISE NOTED)

1. ALL RESISTORS IN OHMS, 5%; 1/4W.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
3. ALL POLARIZED CAPACITORS IN uF, 20%; 50V MINIMUM.
4. ALL DIODES ARE 1N4448.
5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 7707238000 AND PCB ASSEMBLY P/N 7707239000.
6. DC TEST POINT VALUES TP2-8 TAKEN WITH RESPECT TO (CHASSIS) GROUND. DC TEST POINT VALUES TP1 AND TP10-11 TAKEN WITH RESPECT TO GND REF. PCA CONNECTED IN PRODUCT WITH CONNECTIONS AT PW301.

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

CHECKED BY: _____
DATE: _____

APPROVED BY: _____
DATE: _____

DRAWN: D. LEWIS | ENGR: D. LEWIS

DATABASE FILE: Z2810P.SCH

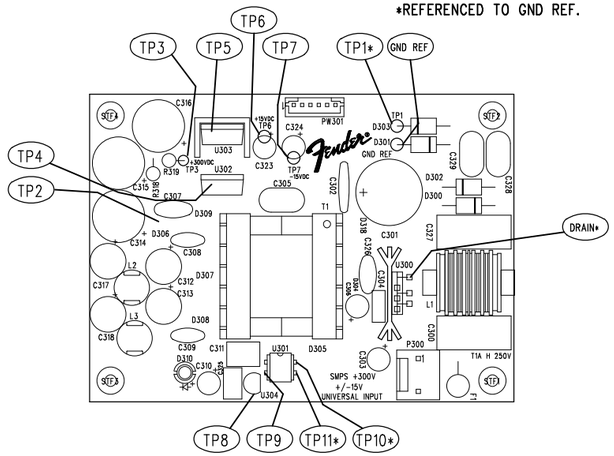
TITLE: SERVICE DIAGRAM, COMBINED (schematic)
SMPS +300V, +/-15V
100-240VAC UNIVERSAL INPUT

SIZE	DRAWING NUMBER	REV.
B	7707240000	A

RELEASE DATE: 24-SEP-14 | SHEET: 1 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2809	25-SEP-14	dBL

*REFERENCED TO GND REF.



FILM/DWG:	SERVICE DIAGRAM
DATABASE: Z2810P.PCB	DATE: 20-JAN-15

1. SEE SHEET 1 FOR PRIMARY WIRING, COMPONENT STUFFING OPTIONS, TEST CONDITIONS, AND TEST POINT VALUES.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____
DATE: _____

APPROVED BY: _____
DATE: _____

DRAWN: D. LEWIS | ENGR: D. LEWIS

DATABASE FILE: Z2810P.PCB

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
SMPS +300V, +/-15V
100-240VAC UNIVERSAL INPUT

SIZE	DRAWING NUMBER	REV.
C	7707240000	A

RELEASE DATE: 25-SEP-14 | SHEET 2 OF 2