

(This is the model name for warranty claims)

p/n 2232200000 (120V)

# SERVICE MANUAL



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**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 CR = Ceramic Radial

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 MOX = Metal Oxide
RES WW = Wire Wound

#### HARDWARE CODES

BLX Black Oxide CR = Chrome Plated HWH = Hex Washer Head = Machine Screw M = Nickel Plated NΙ 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



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## **SPECIFICATIONS**

Model Name: Blues Deluxe Reissue

Release Number: PR 658

(Not a model number)

Part Numbers (120V, 60Hz) US: 2232200000

(110V, 60Hz) TW: 2232201000 (240V, 50Hz) AUS: 2232203000 (230V, 50Hz) UK: 2232204000 (230V, 50Hz) ARG: 2232205000 (230V, 50Hz) EUR: 2232206000 (100V, 50Hz) JPN: 2232207000 (220V, 60Hz) ROK: 2232209000

Power Requirement: 180 W

Power Output: 40 W RMS into 8 or 4 ohms @ 5 %THD

Power Amp Sensitivity: 230mV for 40W into 8 or 4 ohms @ 5 %THD

Impedances Input (Pre-Amp): INPUT1: 34k ohms, INPUT2: 68kOhms

Pre Amp Out: 1.5k ohms
Pwr Amp In: 2.7k ohms

**Speaker Complement:** Eminence 12", 8 ohm,

(P/N 0994812002)

**Dimensions** Height: 18.75 in (47.6 cm)

**Width:** 23.5 in (59.7 cm) **Depth:** 10.5 in (26.7 cm)

**Weight:** 49.5 lbs (22.7 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 each cabinet side panel and two (2) screws from the top of the cabinet. Disconnect the ½" speaker plug(s) from the speaker jack(s) and then slide the chassis toward the rear of the cabinet.
- 2. BLUES DELUXE REISSUE MAIN PCB RE-MOVAL is accomplished by removing the following items: All Vacuum tubes, all knobs including washers and nuts (8), four (4) jacks, nuts and washers. Disconnect the transformer and primary leads at P1-P12, P15-18. Remove
- (1) chassis ground screw, six (6) screws at the standoffs attached from the bottom of the chassis.
- 3. BLUES DELUXE REISSUE BREAKAWAY PCB REMOVAL is accomplished by disconnecting wires from P13-14 and P19-20 then removing thirteen (13) screws which attach the vacuum tube PCB to the chassis from the bottom. Also unsolder gray wire from the external speaker jack and green wires at pilot lamp.

### 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.



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### CIRCUIT DESCRIPTION

#### PRE-AMPLIFIER

The guitar signal is input to J1 for high gain and J2 for lower gain. When both inputs are used, both signals receive low gain. V1-A and V1-B provide two gain stages while R6 provides clean volume control. The tone stack, composed of R13,14,15 and associated components provide treble, bass and middle tone control respectively. V2-A provides gain lost in the tone stack. When the channel select switch is depressed, relays K1 and K2 are energized. This has the effect of disconnecting the volume control, thereby increasing the gain of the first stage while removing the short across R7, drive control, allowing it to control the amount that V2-A is overdriven. R26 is now in the circuit and is used to control the volume of the overdriven signal. The clean or distorted signals are input to opamp U1-A. employed as a unity gain buffer to develop the PREAMP out signal at J3. Opamps U2-A and U2-B function as reverb tank drive and recovery respectively. When an external signal is plugged into J4, POWER AMP IN, the internal pre-amp signal is diverted from the power amp and the external signal instead is fed to the reverb drive and the power amp.

#### **POWER AMPLIFIER**

R40 and R38 sum the signals from the preamp and the reverb tank and feed them into the power amplifier. V3-A and V3-B serve as phase splitters which produce two out of phase signals for the purpose of driving V4 and V5 which act as a push-pull pair in a class A-B power amplifier. T1 matches the 6L6 plate impedance to the speaker load.

#### **POWER SUPPLY**

The line voltage is fed to T2's primary through the line fuse, F1, and the inrush current limiter, RT1. The input voltage is then stepped up or down as needed, rectified and filtered to produce the high X, Y, Z and B+ voltage for the tubes as well as the +/-16V rails for the opamps. A 6.3VAC secondary powers the power indicator lamp and the tubes' heaters.

#### FOOTSWITCH INTERFACE

A two button footswitch (P/N 0994056000) is included for remote switching of the channels and reverb. When the VAC signal is clamped by either the internal (S2) or external (footswitch) diodes, a positive or a negative level that is being compared to a reference by comparators U3-A/B is changed, causing the comparator outputs to change state. U3-b senses the positive level change and energizes K1 and K2. U3-A senses the negative level change and turns on Q2 which mutes the reverb. U4-A and associated circuitry act as a zero crossing detector which mutes the preamp during channel changes.



PAF	RTS LIS	T: MAIN - PCB ASS	EMBLY
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
	REF	**PCB ASSY BLUES DELUXE REISSUE	
1	36621001	RES FILM 1W 5% 6.8k LL	R56
1	36470001	**RES MOX FP 1W 5% 10k LL	R75
2	36468001	**RES MOX FP 1W 5% 470ohm LL	R61-62
1	36469001	**RES MOX FP 1W 5% 4.7k LL	R74
1	33095001	**RES MOX FP 1W 5% 1ohm LL	R66
1	41269001	RES MOX 2W 5% 1.2kohm LL	R97
1	30936003	CAP PFF RDL .0022uF 50V 5%	C10
2	41256000	RES WW BT 5W 10% 470ohm	R78-79
1	38698001	CAP CA 47pF 100V	C15
1	38701001	CAP CA 470pF 50V LL	C13
5	51406003	CAP CD 220pF 500V 10%	C57-61
1	51458003	CAP CD 470pF 500V 10%	C23
1	20917000	CAP CD 250pF 1000V 10%	C7
1	20909000	CAP CD 47pF 1000V 10%	C28
1	25951000	CAP CD 750pF 1000V 10%	C53
4	25995000	CAP CD 8200pF 1000V 20%	C62-65
2	34788003	CAP CR .1uF 50V 20% .2" LS	C54-55
8	26730001	DIODE 1N4006 800V 1A	D3 D6-9 D11-12 D15
16	6260001	DIODE 1N4448 SIGNAL	D16-17 D19-32
2	29690001	DIODE HV 3kV 200mA	D4-5
2	31019001	DIODE ZEN 1N5245B 15V 5% LL	D1-2
2	28119060	DIODE ZEN 1N5353B 16V 5W 5%	D13-14
6	9512001	CAP AE AX 22uF 25V 20%	C1 C8 C14 C21 C50 C56
4	38689001	CAP AE AX .47uF 100V 20%	C12 C16 C19-20
1	28459003	CAP AE RDL 2.2uF 50V 20%	C47
3	24819000	**CAP AE AX 22uF 500V +50%-10%	C33,C35-36
1	24820000	**CAP AE AX 47uF 350V 20%	34
3	31040000	CAP AE RDL 100uF 100V 20%	C39 C42-43
2	28494000	CAP AE RDL 1000uF 35V 20%	C40-41
2	36954003	CAP AE RDL 22uF 63V 20%	C38 C45
21	25802000	FSTN TAB MALE .250x.032 PCB MT	P1-21
2	26368001	RES CF 1/2W 5% 100ohm LL	R80-81
4	25116001	RES CF 1/2W 5% 100k LL	R4 R11 R16 R58
1	24953001	RES CF 1/4W 5% 120 LL	R24
1	31065001	RES CF 1/2W 5% 91k LL	R57
3	51658000	JACK MONO R/A	J1-2 J5
2	59922000	JACK PHONE PCB STEREO PREMIUM LOW PROFILE	J3-4
1	28039000	LED RED 5x5mm SLB-55VR3	D18
1	27255003	CAP MPF .001uF 100V 10%	C22
1	27278003	CAP MPF .1uF 63V 10%	C29
2	27281003	CAP MPF .22uF 63V 10%	C4 C46
2	27272003	CAP MPF .047uF 63V 10%	C3 C9
2	27286003	CAP MPF .47uF 63V 10%	C17 C48
1	27262003	CAP MPF .0068uF 100V 10%	C52
1	24823000	CAP MPF RDL .01uF 400V 10%	C18
1	24853000	CAP MPF RDL .1uF 250V 10%	C25
2	24833000	CAP MPF RDL .022uF 400V 10%	C6 C24
1	24845000	CAP MPF RDL .022uF 400V 10%  CAP MPF RDL .047uF 400V 10%	C2 C2
1	24854000	CAP MPF RDL .1uF 400V 10%	C5
2	24855000	CAP MPF RDL .1uF 400V 10%	C3 C26-27
1	28503000	**THERMISTOR 10 ohm 5A C60-11	RT1
	20000000	THERMISTOR TO OHILL SA COU-TI	IXLI

- \* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY above.
  Unique Fender® part. Order directly from the FMIC 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 <u>and</u> a Safety Requirement part as defined above.



PAF	RTS LIS	T: MAIN - PCB AS	SEMBLY
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
1	37600000	CONTROL SNAPIN 100k B TAPER	R26
1	41507000	CONTROL SNAPIN 1M 10A TAPER	R14
2	41510000	CONTROL SNAPIN 25k B TAPER	R15 R39
1	47031000	CONTROL SNAPIN 25k 30C TAPER	R67
2	47540000	CONTROL SNAPIN 250k 15A TAPER	R6-7
1	37597000	CONTROL SNAPIN 250k 30A TAPER	R13
1	27873000	Pot, vertical trimpot, 15mm	R82
1	24937001	RES CF 1/4W 5% 10ohm LL	R63
2	24965001	RES CF 1/4W 5% 1k LL	R41 R85
7	24981001	RES CF 1/4W 5% 10k LL	R27 R43 R46 R90-91 R93-94
5	24997001	RES CF 1/4W 5% 100k LL	R12 R19 R30 R42 R77
9	25069001	RES CF 1/4W 5% 1M LL	R3 R28 R32 R53-54 R86-87 R89 R92
2	25084001	RES CF 1/4W 5% 10M LL	R20-21
1	28955001	RES CF 1/4W 5% 130k LL	R18
8	24969001	RES CF 1/4W 5% 1.5k LL	R5 R10 R17 R31 R64-65 R76 R103
1	24985001	RES CF 1/4W 5% 15k LL	R102
1	24999001	RES CF 1/4W 5% 150k LL	R9
1	24955001	RES CF 1/4W 5% 180ohm LL	R34
6	25059001	RES CF 1/4W 5% 220k LL	R8 R35-36 R40 R59-60
1	29450001	RES CF 1/4W 5% 240k LL	R52
3	24972001	RES CF 1/4W 5% 2.7k LL	R37 R49-50
1	24959001	RES CF 1/4W 5% 330ohm LL	R84
1	24960001	RES CF 1/4W 5% 390ohm LL	R104
1	24991001	RES CF 1/4W 5% 39k LL	R22
1	25828001	RES CF 1/4W 5% 430k LL	R38
1	24947001	RES CF 1/4W 5% 47ohm LL	R99
1	24961001	RES CF 1/4W 5% 470ohm LL	R55
3	24977001	RES CF 1/4W 5% 4.7k LL	R33 R68 R88
4	24993001	RES CF 1/4W 5% 47k LL	R29 R45 R51 R96
1	25065001	RES CF 1/4W 5% 470k LL	R95
2	28990001	RES CF 1/4W 5% 51k LL	R47-48
1	28018001	RES CF 1/4W 5% 510k LL	R44
3	24995001	RES CF 1/4W 5% 68k LL	R1-2 R69
1	26510001	RES CF 1/4W 5% 9.1k LL	R23
2	41465003	XSTR N-CH JFET J113 TO-92	Q1-2
2	REF	CABLE JMPR 2 CKT .156 ROUND	PW4A PW4B
6	REF	CABLE JMPR 6 CKT .156 ROUND	PW1A PW1B PW2A PW2B PW3A PW3B
2	36613000	RELAY DPDT DIP 24VOLT 8.3mA	K1-2
2	28091000	SWITCH PUSH SLFLK SHORT STROKE	S1-2
2	31611000	IC OP-AMP DUAL PC4560	U2-3
2	16795000	IC OP-AMP DUAL TL072	U1 U4
3	0994005000	TUBE 7025/12AX7A (CHINESE) FNDR GT	V1-3
2	0994001XXX	TUBE 6L6GC YL FNDR GT	V4-5

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PARTS LIST: CHASSIS ASSEMBLY			
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
	REF	CHASSIS ASSY BLUES DLX REISSUE	
0.09	REF	TUBING SHRINK 3/16 BLACK	FT
1	REF	LABEL GROUNDING SEMKO	EA
2	16352000	NUT HEX 3/8-32x3/32 TK NI(049)	EA
6	16440000	STNDOFF RND AL 6-32x1x1/4	EA
6	16444000	WASHER LOCK EXTERNAL #6 THIN C	EA
4	16473000	SCRW M 8-32x1/2 PHP ZI	EA
2	20424000	TUBE RING UNIVERSAL (277H-2)	EA
1	21550000	JACK PHONE TIP SHUNT 12A	EA
1	21642000	PILOT LIGHT #T47	EA
1	21741000	HOLDER IDAL LITE ASSY PIL	EA
8	22004000	NUT KEPS #8-32 ZINC	EA
1	22707000	CHOKE FILTER	EA
1	25718000	JEWEL PILOT LITE RED #20	EA
1	26038000	BUSHING SR .625x.062x37/64 BLK	EA
1	26116000	BUSHING SR .500x.063x7/16 BLK	EA
1	26541000	**CORD PWR ASSY W/.250 TAB 120V	EA
1	28069000	BUSHING SNAP 3/4x1-1/8 WHT	EA
21	31184000	SCRW M6-32x1/4 PHPS BLX ITLW	EA
1	31625000	NUT HOLDER PILOT LIGHT 1/	EA
1	32219000	COLLAR-PILOT LIGHT	EA
1	36570000	SWITCH TOGGLE DPST W/NUTS	EA
8	36620000	KNOB CHICKEN HEAD 1/4 SHFT (BLAC	EA
1	36702000	**FUSE HOLDER 3AG FINGER GRIP	EA
1	36958000	**XFMR PWR 120v HR DLX/VIBVB	EA
1	50438000	**XFMR AUDIO OUTPUT 40W	EA
1	37039000	SWITCH TOGGLE SPST W/NUTS	EA
4	38900000	SCRW TF 6-32X1/4 PHP ZI	EA
1	41701000	JACK PHONE TRANSFER 13A	EA
1	48356000	SHIELD SNAP-IN TUBE	EA
1	REF	WIRE SET CHS H/R DVL/DLX	EA
3	53479000	NUT HEX 7/16 20X1/8 NI	EA
1	65557000	PANEL TOP CHRM BLUES REISSUE	
3	53480000	WASHER FLAT .442 X.692 NI	EA

PARTS LIST: CABINET ASSEMBLY			
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
	041989000	CABINET ASSY BLUES DELUXE	
1	036618000	SCREW M 6-32 X 1/12 OHP BRONZE	
6	049563000	WASHER C'SINK #6 ANTQ BRONZE	
6	022327000	WASHER FLAT 8 X 7/16 NI	
	0041989003	GRILLE ASSY BLUES DELUXE	
5	036618000	SCREW BAFFLE	
6	069393000	NUT 6-32 HEX EXT LOCK	
2	041987000	STRIP BOTTOM BLUES DELUXE	
AR	036343000	TWEED COVERING	
AR	REF	TAPE ALUMINUM 7" X 60 TDS	
7"	REF	VELCRO STRIP HOOK 1.5" wd BLACK	
7"	REF	VELCRO STRIP LOOP 1.5" wd BLACK	

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PARTS LIST: CABINET ASSEMBLY		MBLY	
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
4	026625000	SCREW WOOD 8 X 1 FH	
4	024653000	GLIDE CABINET NICKEL PLATED	
4	022483000	INSERT GLIDE CUSHION 1.02 DIA	
4	064162000	NUT T 8-32 X 1/2 STR 3 PRNG BLX	
4	037247000	SCREW M 8 -32 X 1 OHP NI	
1	036784000	HANDLE, MOLDED	

PARTS LIST: END ITEM ASSEMBLY			
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
1	2232200000	BLUES DELUXE REISSUE	
1	12582000	CLAMP CABLE NYL SCRW MNT 1/4	
6	15990000	SCRW M 10-32x3/4 THP NI	
2	26459000	WSHR FLAT 6x3/8 ZI	
1	28453000	PAD CARDBOARD REVERB #12FN86	
1	50394000	REVERB UNIT 4 SPRING 4EB3C1B	
1	31849000	REVERB BAG	
3	29828000	SCRW PB 8x3/4 PHP ZI	
6	36619000	SCREW M 10-32x1-1/2 THP NI	
0.002	36650000	PIN ESCUTCHEON #18x3/8 NI	
1	0994812002	SPKR 12" 80hm 50W	
1	38566000	CABLE ASSY SPKR RT ANG 13-1/2"	
1	41989000	CAB ASSY HR /BLUES DLX TWEED	
1	47485000	COVER, BROWN BLUES/HR DLX	
4	47821000	SCRW M 10-32 3/4 THP STL BLX	
1	REF	LABEL TUBE BLUES DLX REISSUE	
1	65562000	MANUAL OWNERS BLUES DLX REISSUE	
1	0994056000	FTSW 2 BTN CH/RVB	
1	REF	LABEL CSA C/US	
1	REF	LABEL SERIAL B BLK ON CHRM	
1	REF	NAMEPLATE TWEED AMPS	
1	65558000	PANEL REAR BLUES DLX REISSUE	
4.5	REF	FOAM TAPE 1/4" 1/16 3M4516	
1	REF	TAG WARRANTY 5 YR FENDER-	
1	REF	HANG TAG GROOVE TUBE	
1	REF	REGISTRATION CARD	
1	59718000	STABILIZER TUBE HOT ROD	
1	REF	CHS ASSY BLUES DLX REISSUE 120V	
1	9906900590	CLAMP CABLE NYL ADHESIVE	

PAI	PARTS LIST: FOOTSWITCH ASSY		
QTY.	PART#	DESCRIPTION	REFERENCE DESIGNATION
1	0994056000	FTSW 2 BTN CH/RVB	
1	*	NUT HEX 12mm X 1mm NI	
2	*	WSHR NYL 0.485 X 0.775 X 0.150 TK	
1	*	CABLE ASSY FTSW RT ANG 12' (N.S.)	
8	*	SCRW SMB 6 X 3/8 PH PHS BLX	
1	*	HSG END CUP RIGHT FTSW	
1	*	HSG END CUP LEFT FTSW	
1	*	TOP PLATE	
1	*	HSG FTSW 2 BUTTON	
1	*	PCB ASSSY FT SW 2 BUTTON	

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## Service Diagram List

Service Diagram (0065561000)	Blues Deluxe Re	eissue
PCB Assembly (0065560000)	Blues Deluxe Re	eissue
Chassis Assembly (0065552000)	Blues Deluxe Re	eissue
End Item Assembly (2232200000)	Blues Deluxe Re	eissue











