



'64 VIBROVERB™ CUSTOM

(This is the model name for warranty claims)

p/n 8140000000 (120V)

SERVICE MANUAL



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September, 2002

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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

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SPECIFICATIONS

Model Name:	'64 Vibroverb Custom	
Release Number: (Not a model number)	PR 532	
Part Numbers	(120V, 60Hz) US:	8140000000
	(110V, 60Hz) TW:	-----
	(240V, 50Hz) AUS:	8140002000
	(230V, 50Hz) UK:	8140004000
	(230V, 50Hz) ARG:	-----
	(230V, 50Hz) EUR:	8140006000
	(100V, 50/60Hz) JPN:	8140007000
	(220V, 60Hz) ROK:	-----
Power Requirement:	154W	
Power Output:	40 W RMS into 8 ohms @ 5 %THD	
Impedances	Input 1 (Pre-Amp):	1 M ohms
	Input 2 (Pre-Amp):	200k ohms
Speaker Complement:	One (38.3cm) 15", 8 ohm, Special Design Eminence (P/N 059660)	
Dimensions	Height:	20.5 in (52.1 cm)
	Width:	25 in (63.5 cm)
	Depth:	10 in (25.4 cm)
Weight:	52 lbs (23.9 kg)	

Product specifications are subject to change without notice



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SERVICE NOTES

1. CHASSIS REMOVAL is accomplished by first removing the power cord then removing two (2) screws from each side on the top of the cabinet. Disconnect the 1/4" speaker plug from the speaker jack and the two RCA plugs from the reverb jacks. Remove two wood screws on each side of the upper back panel. After removing the upper back panel, slide the chassis toward the rear of the cabinet and out.

2. POWER TUBE BIAS is accomplished by adjusting the chassis mounted potentiometer R58 until the voltage across R72-73 reads approximately 38mv. This is done with no signal and the RECTIFIER switch in the TUBE position. The bias need only be done when changing output tubes. Please note that you won't have to re-bias if you replace the output tubes with the same brand and grade as the original which is recommended.

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 con-

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



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CIRCUIT DESCRIPTION

PRE-AMPLIFIER

The Normal pre-amplifier is comprised of V1-A and V1-B and associated circuitry. The Vibrato pre-amplifier is comprised of V2-A and V2-B and associated circuitry. V1-A and V2-A present a high impedance input and provide gain before the tone controls. V1-B and V2-B recover gain lost in the tone controls so as to fully drive the power amp.

POWER AMPLIFIER

V6 receives the single ended signal from the pre-amps and generates two out-of-phase signals which are necessary to drive the push-pull output stage comprised of V7, V8 and T3.

POWER SUPPLY

T2 steps up the AC line voltage to the high voltage necessary to power the tube circuitry. D6-7 are in series with V9, the tube rectifier and rectify the secondary AC voltage which is then filtered by a series of capacitors and dropping resistors to achieve the proper voltages necessary to power the different stages. The rectifier switch bypasses V9 in DIODE Rectifier mode and automatically adjusts the bias for V7-8.

REVERB CIRCUITRY

The signal from V2 is fed to V3 which drives T1 and matches the impedance of V3 to the reverb tank. V4-A recovers the reverberated signal which is mixed with the original at V4-B.

TREMOLO (VIBRATO) CIRCUITRY

The output of the Vibrato channel is amplitude modulated by the combination of R48 and OP1, an assembly made up of a neon bulb and a light dependent resistor. A variable low frequency oscillator comprised of V5 and associated circuitry drives the bulb which modulates the resistance in parallel with R48.

The MOD SWITCH

The MOD switch changes the bias points of V2-A/B and disconnects the Normal channel and R48 from the output of the Vibrato pre-amp. This results in the disabling of the Normal channel and the Vibrato function. This also gives the Vibrato channel more gain and distortion.



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PARTS LIST: MAIN – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0059658000	**PCB FAB MAIN COMPONENT BOARD	
1	0036954003	**CAP AE RDL 22uF 63V 20%	C15
8	0009512001	CAP AE AX 22uF 25V 20%	C1 C6 C16 C23-24 C38-39
1	0038691001	CAP AE AX 4.7uF 50V 20%	C19
1	0026502000	CAP AE AX 100uF 100V 20%	C36
1	0020883000	CAP CD 10pF 1000V 10%	C13
2	0020917000	CAP CD 250pF 1000V 10%	C2 C7
1	0020842000	CAP CD 500pF 1000V 10%	C14
2	0024823000	CAP MPF RDL .01uF 400V 10%	C20-21
4	0024833000	CAP MPF RDL .022uF 400V 10%	C4 C9 C12 C22
1	0024845000	CAP MPF RDL .047uF 400V 10%	C5
1	0024876000	CAP MPF RDL .68uF 250V 10%	C11
1	0024853000	CAP MPF RDL .1uF 250V 10%	C26
3	0024854000	CAP MPF RDL .1uF 400V 10%	C3 C8 C18
2	0024855000	CAP MPF RDL .1uF 630V 10%	C27-28
1	0053860000	**CAP MPF RDL .1uF 250VAC 20%	C30
1	0037040002	CAP PFF RDL .0033uF 400V 10%	C17
1	0037666002	CAP PFF .001uF 400V 10%	C25
1	0064089001	DIODE 1N4003	D1
2	0026730001	DIODE 1N4006 800V 1A	D4-5
1	0037836000	OPTO-ISOLATOR ASSY 65 TWIN	OP1
9	0025116001	RES CF 1/2W 5% 100k LL	R4 R11 R16 R23 R29 R34 R46-47 R55
1	0037663001	RES CF 1/2W 5% 10M LL	R45
1	0025117001	RES CF 1/2W 5% 220k LL	R43
1	0025115001	RES CF 1/2W 5% 82k LL	R54
2	0024969001	RES CF 1/4W 5% 1.5k LL	R5 R74
1	0024981001	RES CF 1/4W 5% 10k LL	R36
6	0024997001	RES CF 1/4W 5% 100k LL	R6 R18 R1 R2 R13 R14
1	0024952001	RES CF 1/4W 5% 100ohm LL	R53
5	0025069001	RES CF 1/4W 5% 1M LL	R26 R39 R40 R49 R52
1	0025075001	RES CF 1/4W 5% 2.2M LL	R38
1	0029455001	RES CF 1/4W 5% 2.4k LL	R79
3	0024972001	RES CF 1/4W 5% 2.7k LL	R44 R17 R24
2	0024973001	RES CF 1/4W 5% 3.3k LL	R75 R76
5	0025059001	RES CF 1/4W 5% 220k LL	R12 R33 R35 R56-57
1	0025077001	RES CF 1/4W 5% 3.3M LL	R25
1	0025063001	RES CF 1/4W 5% 390k LL	R37
1	0025065001	RES CF 1/4W 5% 470k LL	R32
1	0024961001	RES CF 1/4W 5% 470ohm LL	R51
2	0024964001	RES CF 1/4W 5% 820ohm LL	R30 R64
1	0027347001	RES FILM 1W 5% 2.2k LL	R27
1	0027350001	RES FILM 1W 5% 22k LL	R50
1	0028740001	RES FILM 1W 5% 470ohm LL	R69
2	0033095001	RES MOX FP 1W 5% 1ohm LL	R72-73
1	0028503000	**THERMISTOR 10ohm 5A C60-11	RT1
2	0025084001	RES CF 1/4W 5% 10M LL	R77-78
107	0041296000	EYELET G.S. 4-4	
1	0059833000	**WIRE SET MAIN COMP BOARD 64 VI-BROVERB	

* 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.

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PARTS LIST: FILTER CAP – PCB ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	0054213001	**RES MOX 2W 5% 100K LL	R65-66, R81-82
1	0059659000	**PCB FABRICATION FILTER CAP PCB	
1	0037354001	**RES FILM 1W 5% 4.7k K LL	R68
1	0029722001	**RES FILM 1W 5% 1K LL	R67
2	0013638000	CAP AE AX 220uF 285V +100%-10%	C31-32
2	0024819000	CAP AE AX 22uF 500V +50%-10%	C34-35
2	0024820000	CAP AE AX 47uF 350V +50% -10%	C33,C40

PARTS LIST: CHASSIS ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057992000	CHASSIS '64 VIBROVERB	
1	0057984000	PANEL FRONT '64 VIBROVERB	
1	0057993000	PANEL REAR '64 VIBROVERB	
	0050505000	LABEL VOLTAGE 230V	
	0050506000	LABEL VOLTAGE 240V	
	0050507000	LABEL VOLTAGE 100V	
1	0013020000	LABEL GROUNDING SEMKO	
1	0056919000	**XFMR POWER 120V SUPER REVERB REISSUE	
	0056920000	**XFMR POWER EXPORT 230V/240V SUPER REVERB REISSUE	
	0056929000	**XFMR POWER EXPORT 100V SUPER REVERB REISSUE	
1	0041754000	**XFMR OUTPUT HOTROD/BLUES DVL	
1	0037099000	**XFMR REVERB VIBROLUX/65 DLX	
1	0036486000	CHOKE REISSUE TUBE AMPS	
6	0018022000	BUSHING SNAP 5/16x17/32 BLK	
4	0026553000	SCRW M 8-32x3/8 PHP BLX	AT OUTPUT XFMR
8	0022004000	NUT KEPS #8-32 ZINC	AT OUTPUT/POWER XFMR
1	0059717000	SWITCH TOGGLE 4PDT	"MOD" SWITCH
2	0036570000	**SWITCH TOGGLE DPST W/NUTS	"PWR" and RECTIFIER
1	0037039000	**SWITCH TOGGLE SPST W/NUTS	"STANDBY"
4	0027979000	SCRW M 4-40x1/4 PH BH NI .23HD	AT "BRIGHT" SWITCHES
1	0047213000	**CONNECTOR AC LINE MALE IEC	
2	0057410000	SCRW TF 6-32 3/8" FHP STL BLX	AT IEC
1	0059707000	PCB ASSY FILTER CAP VIBROVERB	
1	0025239000	COVER CAPACITOR CUSTOM AMPS	DOG HOUSE
1	0059706000	MAIN PCB ASSY VIBROVERB	
4	0037783000	STANDOFF NYL PCB SNAP 1/4" NAT	AT FILTER BD
10	0047040000	STANDOFF NYL PCB SNAP 1/2" BLK	AT MAIN COMP BD
3	0003290800	SCRW TF 6-32x3/8 PHP ZI	AT V1, V3, V9 GNDs
3	0069393000	NUT 6-32 HEX EXT LOCK	AT V1, V3, V9 GNDs
4	0028937000	SCRW TF 6-32x5/8 PHP ZI	AT FILTER BD
10	0037353000	SCRW TF 6-32x3/4 PHP ZI	AT MAIN COMP BD
1	0013681000	**FUSE TD 20mmX5mm 250V 5A	5V HEATER
1	0013688000	**FUSE TD 20mmX5mm 250V 10A	6.3V HEATER
1	0057190000	LABEL FUSE HOLDER "T5A 250V"	5V HEATER
1	0059780000	LABEL FUSE HOLDER "T10A 250V"	6.3V HEATER
2	0057183000	**FUSE HOLDER INLINE 5X20MM	AT HEATER WINDINGS
1	0036702000	**FUSE HOLDER 3AG FINGER GRIP	DOMESTIC
1	0077982000	**FUSE QA 1-1/4x1/4 250V 3A	DOMESTIC
26	0038900000	SCRW TF 6-32x1/4 PHP ZI	SKTS/XFMRS/DOG/GND
3	0020424000	TUBE RING UNIVERSAL (227H-2)	AT 8 PIN TUBES

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PARTS LIST:		CHASSIS ASSEMBLY	
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
3	0023580000	TUBE SOCKET 8 PIN (099-0724-000)	AT 8 PIN TUBES
6	0023598000	TUBE SHIELD (099-0723-000)	AT 9 PIN TUBES
6	0023606000	TUBE SOCKET 9 PIN	AT 9 PIN TUBES
2	0023531000	TUBE 12AT7 HIGH MU TWIN TRIODE	V3 V6
1	0041400000	TUBE 5AR4 FULLWAVE RECTIFIER	V9
2	0059778000	VACUUM TUBE 6L6GC GE CLONE	V7-8
1	0023572000	VACUUM TUBE 7025/12AX7WA (CHINESE)	V2
3	0013341000	VACUUM TUBE 7025/12AX7WA (RUSSIAN MADE)	V1 V4-5
1	0417010000	JACK PHONE TRANSFER 13A	EXT SPKR
5	0021550000	JACK PHONE TIP SHUNT L12A	SPKR , INPUTS
2	0056930000	JACK PHONO 2 CND REAR PNL MNT	RVB SND/RTN
9	0024604000	KNOB BLACK W/WHITE STAMP 1-10	
1	0059661000	**WIRESET CHASSIS '64 VIBROVERB	
1	0021642000	PILOT LIGHT #T47	
1	0021741000	HOLDER IDAL LITE ASSY PILOT	
1	0025718000	JEWEL PILOT LITE RED #20	
1	0031625000	NUT HOLDER PILOT LIGHT 1/16-27	
1	0032219000	COLLAR-PILOT LIGHT	
5	0031153000	WASHER FLAT 3/8X.614 NI (049)	SPKR, EXT SPKR & FTSW, RVB IN & OUT
1	0059711000	CONTROL PANEL MNT 100K LINEAR	REVERB
2	0059712000	CONTROL PANEL MNT 1M AUDIO	VOLUME
2	0059713000	CONTROL PANEL MNT 250K J	TREBLE
2	0059714000	CONTROL PANEL MNT 250K A	BASS
1	0059745000	CONTROL PANEL MNT 3M CCW A	SPEED
1	0059715000	CONTROL PANEL MNT 50K LINEAR	INTENSITY
8	0027887000	LUG SOLDER 3/8"	AT CONTROLS
2	0051406003	CAP CD 220pf 500V 10%	AT J7
1	0024846003	CAP MPF RDL .047uF 630V 10%	C37
2	0051405003	CAP CD 120pf 500V 10%	C10 C29
1	0025059001	RES CF 1/4W 5% 220k LL	R28
2	0057351001	DIODE BYD33V	D6-7
2	0029690001	DIODE HV 3kV 200mA	D2-3
2	0026368001	RES CF 1/2W 5% 100ohm LL	R70-71
2	0028740001	RES CF 1W 5% 470ohm LL	R62-63
2	0024969001	RES CF 1/4W 5% 1.5k LL	R60 R61
1	0037665001	RES CF 1/2W 5% 27k LL	R59
2	0024979001	RES CF 1/4W 5% 6.8k LL	R9 R21
2	0025069001	RES CF 1/4W 5% 1M LL	R3 R15
5	0012869000	LUG SOLDER BRASS TINNED W/2 HL	GROUND
1	0024997001	RES CF 1/4W 5% 100k LL	R41
2	0026368001	RES CF 1/2W 5% 100ohm LL	R70-71
2	0037835000	SWITCH SLIDE SPST	BRIGHT

PARTS LIST:		CABINET ASSEMBLY	
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057914001	CABINET LEFT SIDE	3/4" PINE (027579)
1	0057914002	CABINET RIGHT SIDE	3/4" PINE (027579)
1	0057914003	CABINET BOTTOM	3/4" PINE (027579)
1	0057914004	CABINET TOP	3/4" PINE (027579)
1	0057914005	CLEAT 7/8 X1 X 16	3/4" PINE (027579)
1	0057914006	CLEAT 7/8 X1 X 16	3/4" PINE (027579)
1	0057914008	CABINET UPPER BACK	1/4 PLYWOOD (027882)

* 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.

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PARTS LIST:		CABINET ASSEMBLY	
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057914010	CABINET LOWER BACK	1/4 PLYWOOD (027882)
1	0047933000	CABINET BAFFLE	1/2" BALTIC BIRCH (047933)
2	0056910013	GRILLE FRAME STRIP - LEFT/RIGHT SIDES	1/4 PLYWOOD (027882)
2	0056910014	GRILLE FRAME STRIP - UPPER/LOWER	1/4 PLYWOOD (027882)
1	0037788000	CLOTH GRILLE BLACK/SILVER	
A/R	0026570000	TOLEX BLACK	
2	0027579000	PINE #3 COMMON 1x10x96	CLEATS
A/R	0032793000	TAPE ALUM 7-1/2"x60 YDS	
12	0021972000	NUT T 10-32x3/4 STR 3 PRNG	SPEAKER/HANDLE NUTS
2	0025395000	HANDLE CAP 1 HOLE NI	
1	0032524000	INSERT HANDLE	
1	0037790000	HANDLE 9.25" BLACK RIBBED	
2	0022244000	SCRW M 10-32x1-1/8 OHP NI	AT HANDLE
4	0022483000	INSERT GLIDE CUSHION 1.02 DIA	
4	0024653000	GLIDE CABINET NI PLATE	
4	0026625000	SCRW WOOD 8x1 FH	AT GLIDES
2	0024695000	CORNER 2 HOLE W/TAB NI CSK	FRONT OF CABINET
2	0029071000	CORNER NOTCHED NICKEL	REAR OF CABINET
4	0037543000	SCRW SMAB 8x3/4 OHP NI	AT CORNERS
6	0017441000	SCRW M 10-32x1-1/2 OHP BLX	AT BAFFLE
6	0029527000	WSHR FNSH 8-5/8 FLNGD BLX	AT BAFFLE

PARTS LIST:		END ITEM ASSEMBLY	
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0057914000	CABINET ASSY '64 VIBROVERB CUSTOM	
1	0059740000	CHASSIS ASSY '64 VIBROVERB CUSTOM 120V	
1	0059660000	SPEAKER 15" 8 OHM EMINENCE	
1	0037983000	LABEL SPEAKER HR/BLUES/TWIN	ON SPEAKER MAGNET
8	0047821000	SCRW M 10-32 3/4 THP STL BLX	AT SPEAKER
1	0064063000	REVERB UNIT 4 SPRING 4AB3C1B	
1	0031849000	REVERB BAG	
1	0028453000	PAD CARDBOARD REVERB	
1	0056931000	CABLE REVERB 48" RIGHT ANGLE	
2	0022491000	CLAMP CABLE NYL SCRW MNT	AT RVB AND SPKR CABLE
1	0028044000	CABLE ASSY SPKR RT ANG 33"	SPEAKER CABLE
2	0024752000	STRAP CHASSIS 4-1/2" NI	CHASSIS MOUNT
4	0022236000	SCRW M 8-32x3-1/4 OHP NI CONE	CHASSIS MOUNT
1	0037211000	FTSW VIB/REV (099-4058-000)	
2	0024828000	LEG AMP TILT 16"	
2	0021998000	NUT FLEX LOCK 10-32 W/NYLON INSERT	AT LEG
2	0022277000	SCRW M 10-32x1-1/2 OHP NI	AT LEG
2	0022285000	WSHR SP LOCK 1/4x.493 ZI	AT LEG
6	0022319000	WSHR FLAT 1/4x9/16 NI	AT LEG
2	0031344000	SCRW SMA 10x3/4 OHP NI	AT LEG STOP
2	0024646000	WASHER LEG STOP TN	AT LEG STOP
2	0022327000	WSHR FLAT 8x7/16 NI	AT REVERB BAG
5	0029828000	SCRW PB 8x3/4 PHP ZI	AT REVERB BAG/CHASSIS
2	0030866000	SCRW SMA 8x1/2 PHP NI	AT CLAMPS
1	0023192000	NAMEPLATE FENDER 65 TWIN	TOP, LEFT OF GRILL
3	0037985000	SCRW SMA 2x3/8 PHP BLX	AT NAMEPLATE
8	0037952000	SCRW SMA 6x1 OHP NI	AT CABINET BACKS
8	0037215000	WSHR C'SNK #6 NI	AT CABINET BACKS

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PARTS LIST: END ITEM ASSEMBLY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0047248000	**CORD PWR w/IEC CONN DOM	
1	0059737000	MANUAL OWNERS '64 VIBROVERB CUSTOM	
1	0059708000	SERVICE DIAGRAM (COMB) '64 VIBROVERB CUSTOM	
1	0059753000	COVER, '64 VIBROVERB CUSTOM	

PARTS LIST: FOOTSWITCH ASSY			
QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0037211000	FTSW VIB/REV (099-4058-000)	
1	0016063000	DECAL VIB/REV	
2	0022293000	WASHER FLAT	
1	0021691000	BUSHING STRAIN RELIEF	
2	0024042000	SWITCH	
1	0013172000	PLUG 3 CONDUCTOR	
1	0022665000	COVER	
1	0024638000	CUP, FOOTSWITCH	

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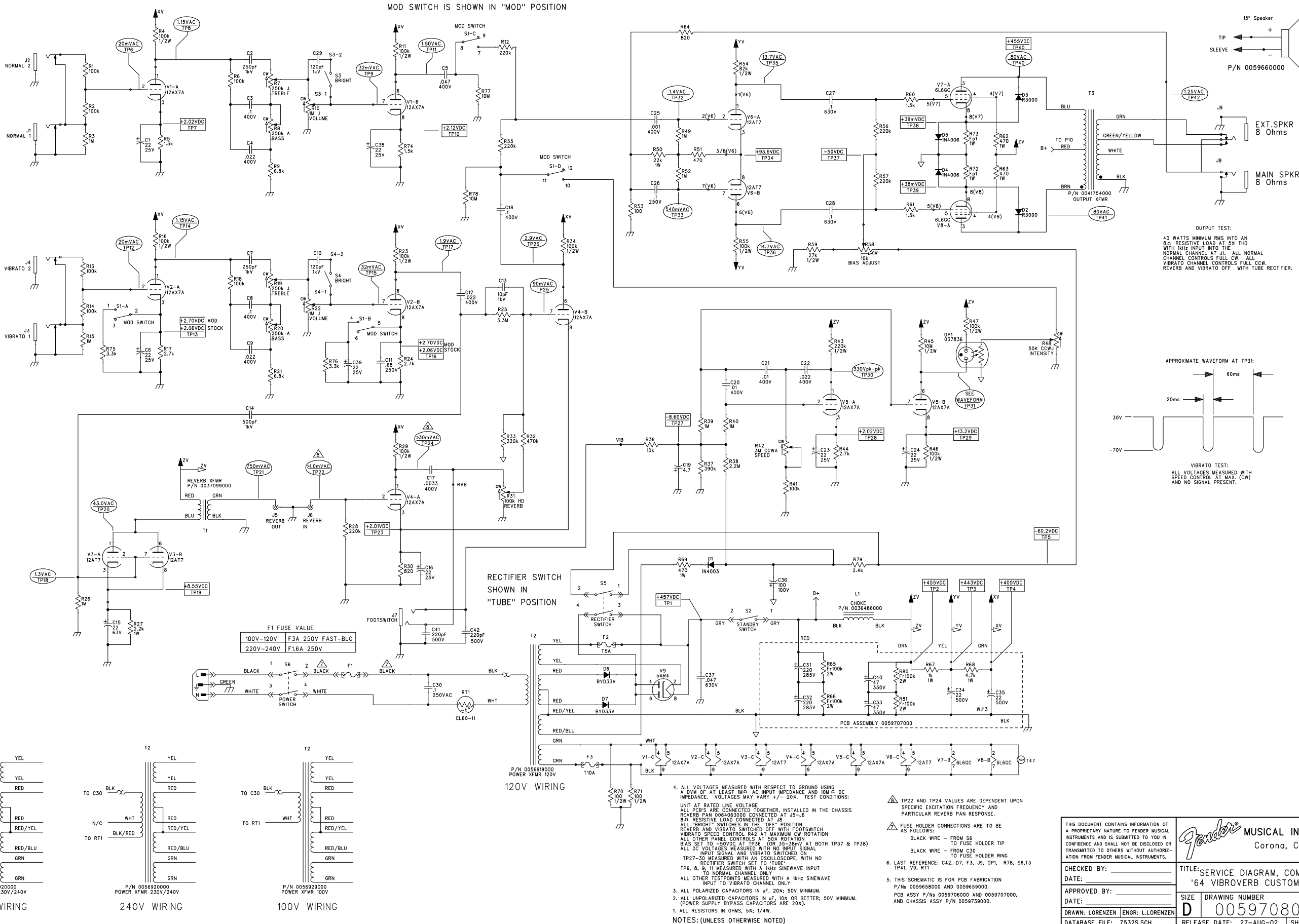
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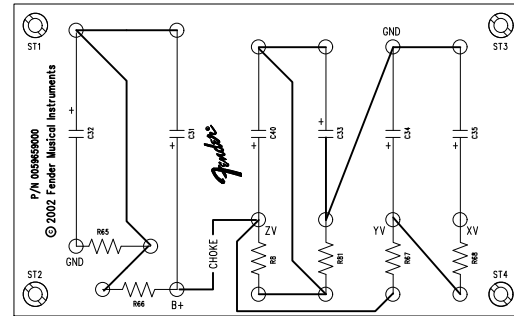
Service Diagram List

Service Diagram (Schematic)	'64 Vibroverb Custom
Service Diagram (PCB Assembly)	'64 Vibroverb Custom
Chassis Assembly	'64 Vibroverb Custom
End Item Assembly	'64 Vibroverb Custom
Assembly	2-Button Footswitch

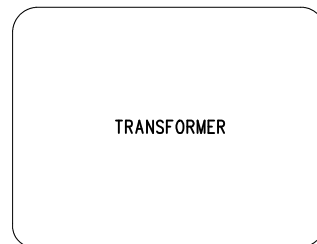
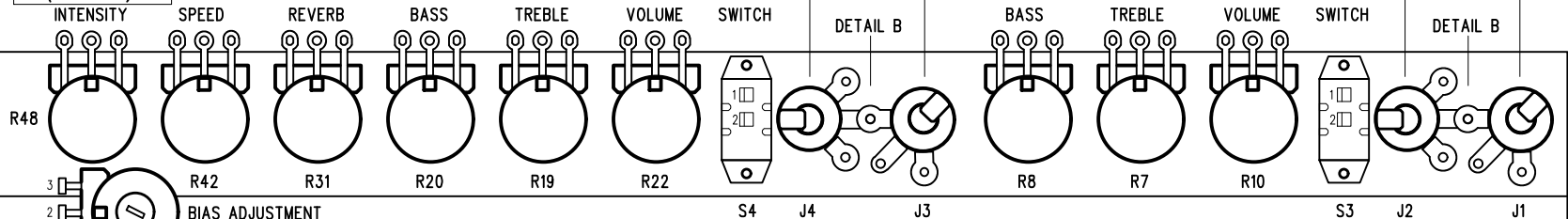
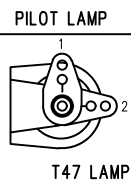
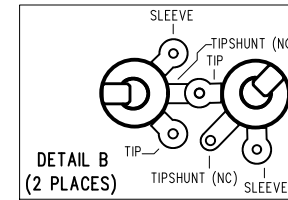
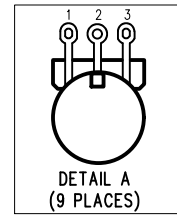
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR532	27-AUG-02	L E L



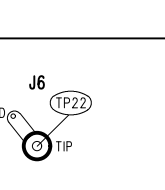
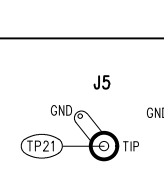
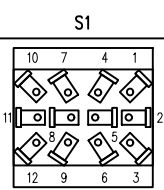
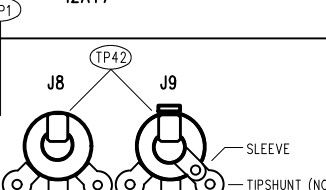
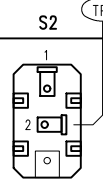
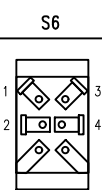
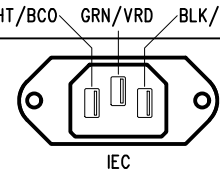
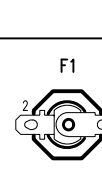
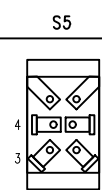
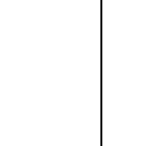
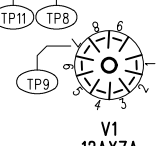
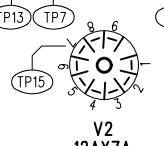
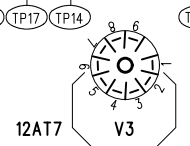
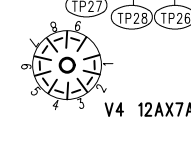
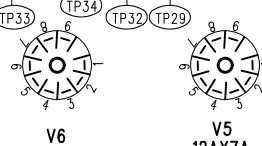
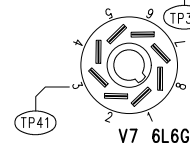
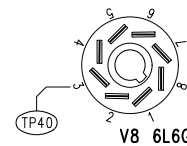
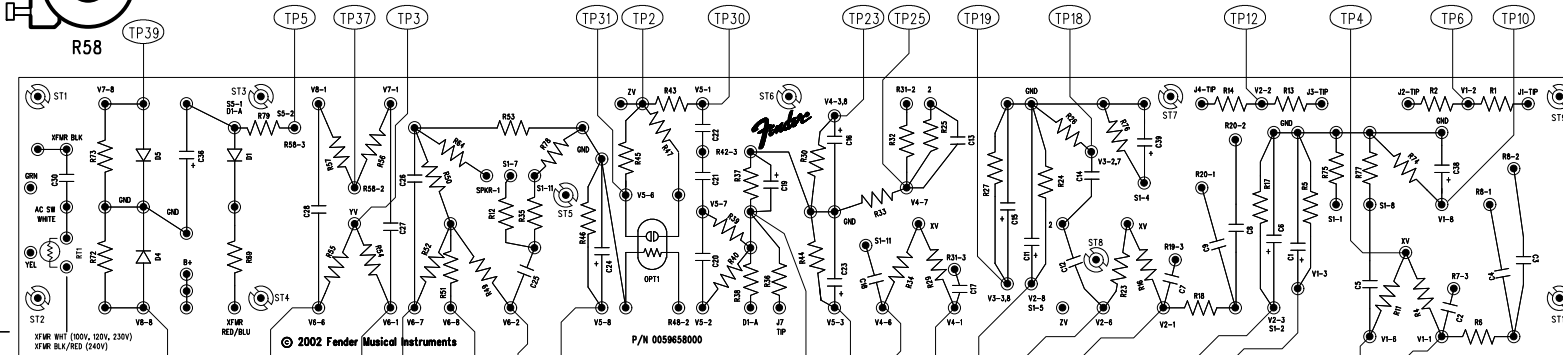
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR532	27-AUG-02	L E L



FILTER CAPACITOR PCB DETAIL
ASSEMBLY P/N 0059707000



MAIN PCB DETAIL
ASSEMBLY P/N 0059706000

RECTIFIER
SWITCH

FUSE

POWER CORD CONNECTION

POWER
SWITCH

STANDBY
SWITCH

TIP SLEEVE TIP
TIPSHUNT (NC) TIPSHUNT (NC)
MAIN **EXTERNAL**
SPEAKER **SPEAKER**

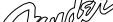
FILM/DWG:	SERVICE DIAGRAM
DATABASE:	7532R1 PCB DATE: 27-AUG


 RING
 SLEEVE
 FOOTSWITCH

MOD
SWITCHREVERB
OUT

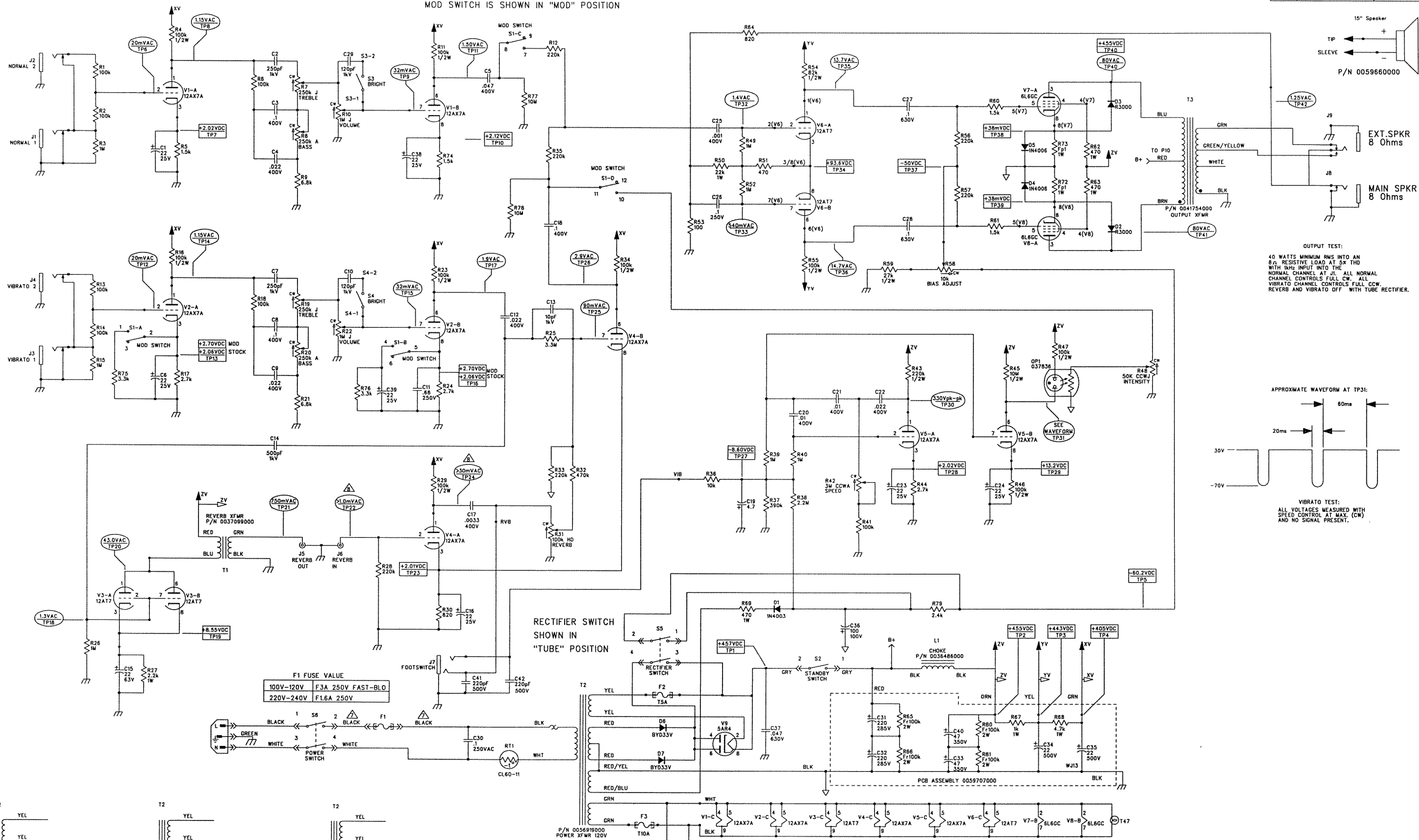
REVERB

1. WIRES NOT SHOWN FOR CLARITY.
NOTES: (UNLESS OTHERWISE NOTED)

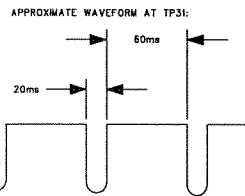
THIS DOCUMENT CONTAINS INFORMATION OF A PROPRIETARY NATURE TO FENDER MUSICAL INSTRUMENTS AND IS SUBMITTED TO YOU IN CONFIDENCE AND SHALL NOT BE REPRODUCED OR TRANSMITTED TO OTHERS WITHOUT AUTHORIZATION FROM FENDER MUSICAL INSTRUMENTS.		 MUSICAL INSTRUMENTS Corona, CA U.S.A.	
CHECKED BY: _____ DATE: _____		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) '64 VIBROVERB MAIN PCB	
APPROVED BY: _____ DATE: _____		SIZE D	DRAWING NUMBER 0059708000
DRAWING D. FOX ENGR. L. LORENZEN		RELEASE DATE: 27-AUG-02	REV. A SHEET 2 OF 2
DATABASE FILE: Z532PLPCB			

		MUSICAL INSTRUMENTS	
		Corona, CA U.S.A.	
TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)			
'64 VIBROVERB			
MAIN PCB			
SIZE	DRAWING NUMBER	REV.	
D	0059708000	A	
RELEASE DATE: 27-AUG-02		SHEET 2 OF 2	

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR532	27-AUG-02	L E L
B	EC 2869	21-JAN-03	L E L



OUTPUT TEST:
40 WATTS MINIMUM RMS INTO AN 8Ω RESISTIVE LOAD AT 6X THD WITH 1kHz INPUT INTO THE NORMAL CHANNEL AT J1. ALL NORMAL CHANNEL CONTROLS FULL CW. ALL VIBRATO CHANNEL CONTROLS FULL CCW. REVERB AND VIBRATO OFF WITH TUBE RECTIFIER.

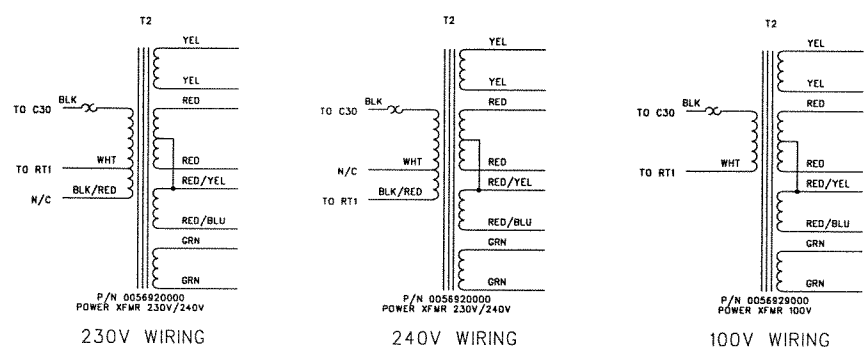


VIBRATO TEST:
ALL VOLTAGES MEASURED WITH SPEED CONTROL AT MAX. (CW) AND NO SIGNAL PRESENT.

RECTIFIER SWITCH SHOWN IN "TUBE" POSITION

F1 FUSE VALUE	
100V-120V	F3A 250V FAST-BLO
220V-240V	F1.6A 250V

120V WIRING

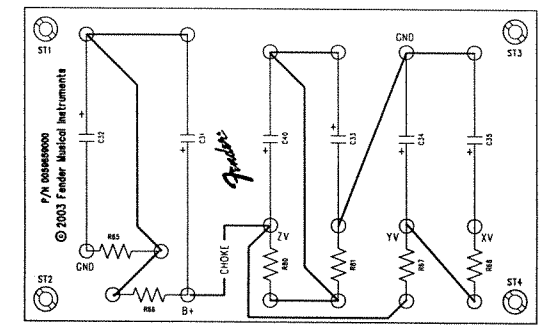


- ALL VOLTAGES MEASURED WITH RESPECT TO GROUND USING A DVM OF AT LEAST 1MΩ AC INPUT IMPEDANCE AND 10MΩ DC IMPEDANCE. VOLTAGES MAY VARY +/- 20%. TEST CONDITIONS: UNIT AT RATED LINE VOLTAGE. ALL PCB'S ARE CONNECTED TOGETHER, INSTALLED IN THE CHASSIS. REVERB PAN 0064063000 CONNECTED AT J5-J6. 8Ω RESISTIVE LOAD CONNECTED AT J8. ALL "BRIGHT" SWITCHES IN THE "OFF" POSITION. REVERB AND VIBRATO SWITCHED OFF WITH FOOTSWITCH. VIBRATO SPEED CONTROL R42 AT MAXIMUM CW ROTATION. ALL OTHER PANEL CONTROLS AT 50% ROTATION. INPUT SIGNAL AND VIBRATO SWITCHED ON. RECTIFIER SWITCH SET TO TUBE. TP27-30 MEASURED WITH A 1kHz SINEWAVE INPUT TO NORMAL CHANNEL ONLY. ALL OTHER TESTPOINTS MEASURED WITH A 1kHz SINEWAVE INPUT TO VIBRATO CHANNEL ONLY.
- ALL POLARIZED CAPACITORS IN μF, 20% 50V MINIMUM.
- ALL UNPOLARIZED CAPACITORS IN μF, 10% OR BETTER, 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
- ALL RESISTORS IN OHMS, 5%; 1/4W.

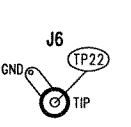
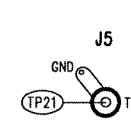
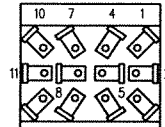
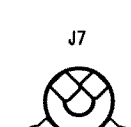
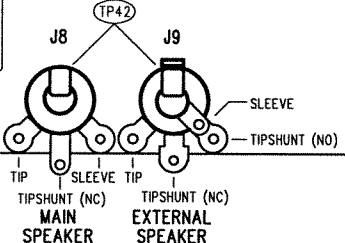
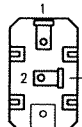
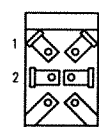
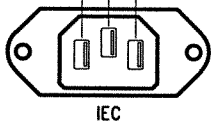
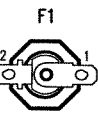
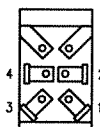
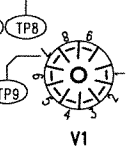
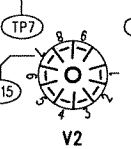
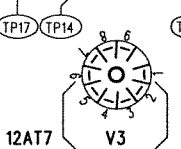
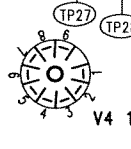
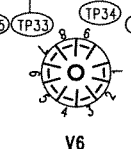
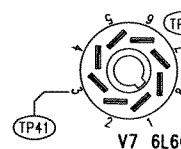
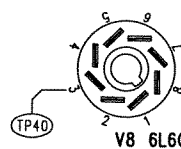
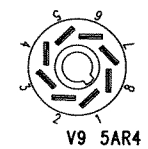
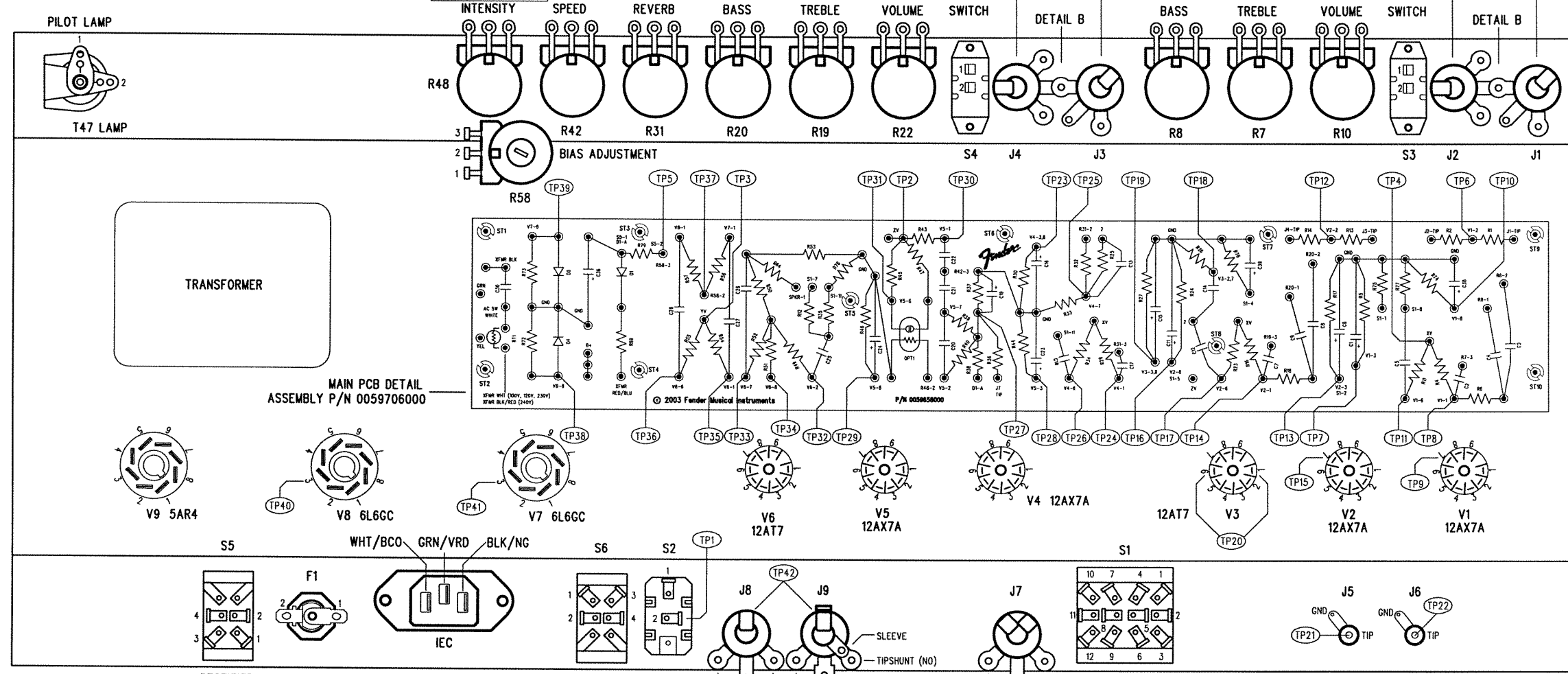
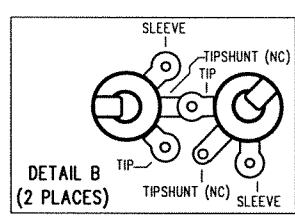
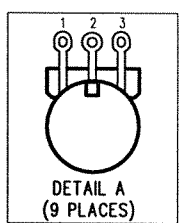
- TP22 AND TP24 VALUES ARE DEPENDENT UPON SPECIFIC EXCITATION FREQUENCY AND PARTICULAR REVERB PAN RESPONSE.
- FUSE HOLDER CONNECTIONS ARE TO BE AS FOLLOWS:
BLACK WIRE - FROM S6 TO FUSE HOLDER TIP
BLACK WIRE - FROM C30 TO FUSE HOLDER RING
6. LAST REFERENCE: C42, D7, F3, J9, Q1, R78, 56T3 TP41, VS, RT1
- THIS SCHEMATIC IS FOR PCB FABRICATION
P/Ns 0059658000 AND 0059659000,
PCB ASSY P/Ns 0059706000 AND 0059707000,
AND CHASSIS ASSY P/N 0059738000.

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CHECKED BY: <i>M. Willy</i> DATE: <i>1/27/2003</i>		TITLE: SERVICE DIAGRAM, COMBINED (schematic) '64 VIBROVERB CUSTOM AMPLIFIER	
APPROVED BY: <i>[Signature]</i> DATE: <i>1/27/2003</i>		SIZE: D DRAWING NUMBER: 0059708000	
DRAWN: LORENZEN ENGR: LLORENZEN DATABASE FILE: Z532S.SCH		RELEASE DATE: 27-AUG-02 SHEET: 1 OF 2	

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR532	27-AUG-02	L E L
B	EC 2869	24-JAN-03	L E L



FILTER CAPACITOR PCB DETAIL
ASSEMBLY P/N 0059707000



FILE/DWG: SERVICE DIAGRAM
DATABASE: Z532P1.PCB DATE: 24-JAN-03

1. WIRES NOT SHOWN FOR CLARITY.
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CHECKED BY: *M. Williams*
DATE: 1/27/2003
APPROVED BY: *[Signature]*
DATE: 1/27/2003
DRAWN: D. FOX
ENGR: L. LORENZEN
DATABASE FILE: Z532P1.PCB

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

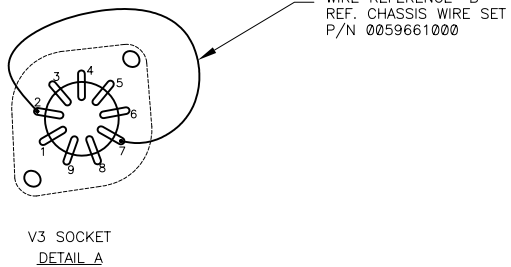
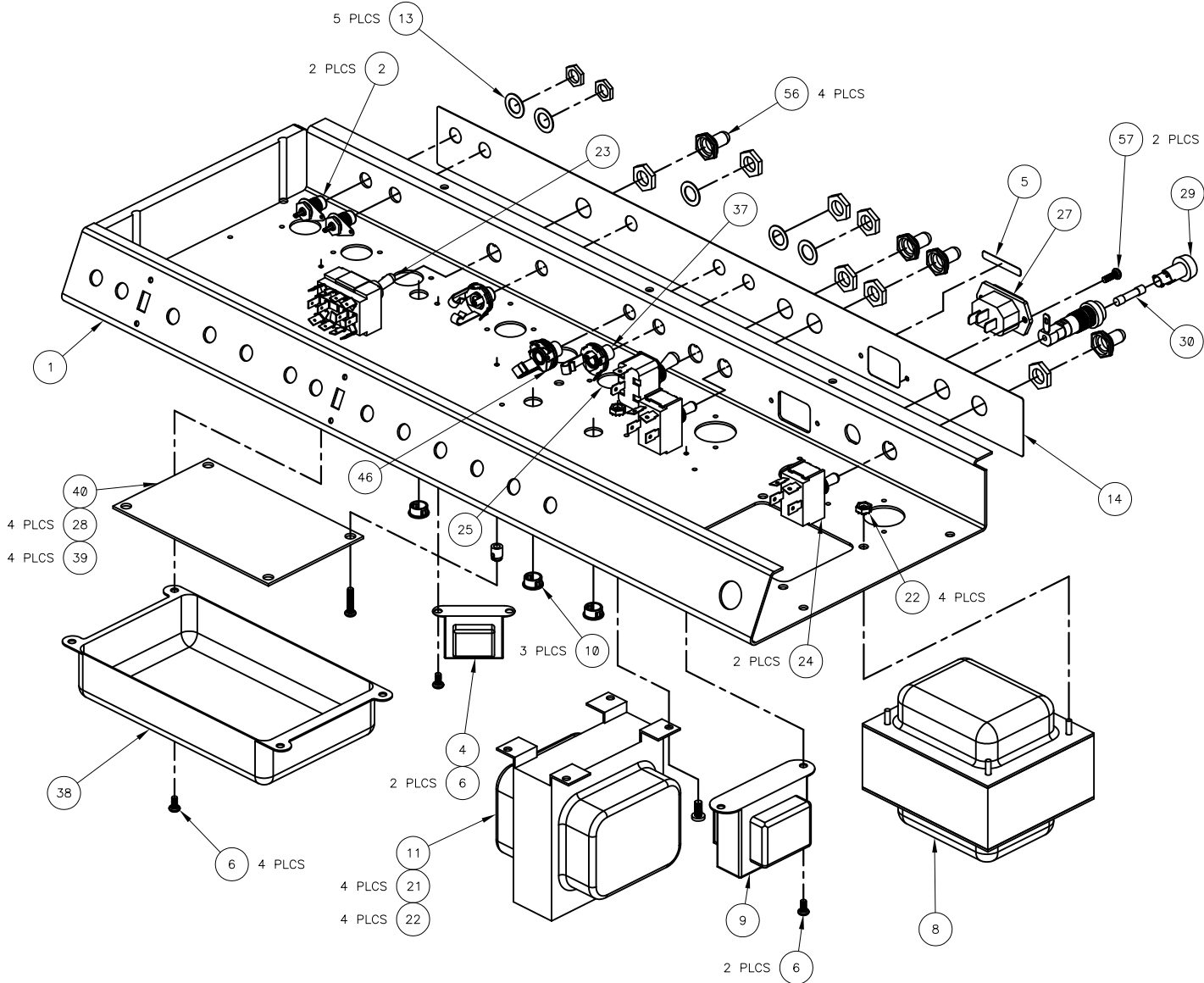
TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
'64 VIBROVERB
MAIN PCB

SIZE: D
DRAWING NUMBER: 0059708000
RELEASE DATE: 27-AUG-02
SHEET 2 OF 2

REV. B

COMPONENT WIRING LIST

ITEM	REF DES	FROM	TO	REFERENCE
A	R70	V1-4	GND LUG	AT TUBE SOCKET
B	R71	V1-9	GND LUG	AT TUBE SOCKET
C	R28	J6 TIP	GND LUG	AT J6
D	R9	R8-1	GND LUG	AT R8
E	R21	R20-1	GND LUG	AT R20
F	C29	R10-3	S3-2	
G	C10	R22-3	S4-2	
H	C41	J7-TIP	J7-GND	
J	C42	J7-SHAFT	J7-GND	
K	R60	V7-1	V7-5	
L	R61	V8-1	V8-5	
M	D2	V7-7 ANODE	V7-3 CATHODE	AT V7
N	D3	V8-7 ANODE	V8-3 CATHODE	AT V8
P	D6	V9-3 ANODE	V9-4 CATHODE	AT V9
R	D7	V9-5 ANODE	V9-6 CATHODE	AT V9
S	R62	V7-6	V7-4	
T	R63	V8-6	V8-4	
U	R59	R58-1	GND LUG	AT R58
V	R41	R42-2	GND LUG	AT R42
W	R3	J1 TIP	GND TAB	AT J1
X	R15	J3 TIP	GND TAB	AT J3
Y	F2 ASSY	YEL	V9-8	PCB TO TUBE SOCKET
Z	F3 ASSY	GRN	V8-7	PCB TO TUBE SOCKET
AA	C37	V9-8	GND LUG	AT V9
AB	T1	T1 RED	ZV	ON PCB
AC	T1	T1 BLU	V3-6	SHORT
AD	T1	T1 GRN	J5 TIP	
AE	T1	T1 BLK	GND LUG	AT V3
AF	T3	T3 WHT	N/C	SHRINK WRAP
AG	T3	T3 GRN	J9 NORM CLOSED	
AH	T3	T3 GRN/YEL	J9 NORM OPEN	
AJ	T3	T3 BLK	J8 GND	
AK	T3	T3 BLU	V7-3	
AL	T3	T3 BRN	V8-3	
AM	T3	T3 RED	B+	ON PCB
AN	T2	T2 GRN	V8-2	
AP	T2	T2 YEL	V9-2	
AR	T2	T2 RED	V9-3	
AS	T2	T2 RED	V9-5	
AT	T2	T2 RED/YEL	GND	AT R73
AU	T2	T2 RED/BLU	XFR RED/BLU	ON PCB
AV	T2	T2 GRN	GRN	ON PCB
AW	T2	T2 YEL	YEL	ON PCB
AX	T2	T2 BLK	XFR BLK	ON PCB, ALL VOLTAGES
AY	T2	T2 WHT	XFR WHT	ON PCB, 100V, 120V AND 230V
AZ	T2	T2 WHT	N/C	ON 240V
BA	T2	T2 BLK/RED	XFR WHT	ON PCB, 240V
BB	T2	T2 BLK/RED	N/C	ON 230V
BC	L1	L1 BLK	B+	ON PCB
BD	L1	L1 BLK	ZV	ON PCB



V3 SOCKET
DETAIL A

56	4	SWITCH TOGGLE BOOT	
55	1	JEWEL PILOT LITE RED #20	
54	1	COLLAR-PILOT LIGHT	
53	1	HOLDER IDAL LITE ASSY PILOT	
52	1	TUBE 5AR4 FULLWAVE RECTIFIER	
51	1	PILOT LIGHT #T47	
50	2	TUBE 6L6GC GE CLONE	
49	10	SCRW TF 6-32x3/4 PHP Z1	
48	2	TUBE 12AT7 HIGH MU TWIN TRIODE	
47	1	TUBE 7025/12AX7A CHINESE	
46	1	JACK PHONE TRANSFER 13A	
45	3	TUBE 7025/12AX7WA RUSSIAN MADE	
44	6	TUBE SOCKET 9 PIN	
43	6	TUBE SHIELD (099-0723-000)	
42	3	TUBE RING UNIVERSAL (277H-2)	
41	10	STANDOFF NYL PCB SNAP 1/2" BLK	
40	1	FILTER BOARD ASSY VIBROVERB	
39	4	STANDOFF NYL PCB SNAP 1/4" NAT	
38	1	COVER CAPACITOR CUSTOM AMPS	
37	5	JACK PHONE TIP SHUNT 12A	J1,J2,J3,J4,J8
36	9	KNOB BLACK W/WHITE STAMP 1-10	
35	2	FUSE HOLDER INLINE 5X20 MM (N.S.)	F2,F3
34	3	TUBE SCKT 8 PN (099-0724-000)	
33	3	SCRW TF 6-32x3/8 PHP Z1	
32	1	NUT HOLDER PILOT LIGHT 1/16-27	
31	1	LABEL FUSE W ON B F1.6A 250V (N.S.)	
30	1	FUSE	
29	1	FUSE HOLDER	
28	4	SCRW TF 6-32x5/8 PHP Z1 TAPTYT	
27	1	CONNECTOR AC LINE MALE IEC	
26	4	SCRW M4-40x1/4 PH BH NI .23HD	
25	1	SWITCH TOGGLE SPST W/NUTS	
24	2	SWITCH TOGGLE DPST W/NUTS	
23	1	SWITCH TOGGLE 4PDT	
22	8	NUT KEPS #8-32 ZINC	
21	4	SCRW M 8-32x3/8 PHP BLX	
20	1	CONTROL PANEL MNT 3M CCW A (N.S.)	R42
19	1	CONTROL PANEL MNT 50K LINEAR (N.S.)	R48
18	2	CONTROL PANEL MNT 250K A (N.S.)	R8,R20
17	2	CONTROL PANEL MNT 250K J	R7,R19
16	2	CONTROL PANEL MNT 1M AUDIO	R10,R22
15	1	CONTROL PANEL MNT 100K LINEAR (N.S.)	R31

81	1	RES CF 1/4W 5% 100k LL (N.S.)	R41	14	1	PANEL REAR '64 VIBROVERB	
80	2	RES CF 1/4W 5% 1M LL (N.S.)	R3,R15	13	5	WASHER FLAT .482x.709 NI	
79	2	RES CF 1/4W 5% 6.8k LL (N.S.)	R9,R21	12	1	PANEL FRONT '64 VIBROVERB	
78	1	RES CF 1/2W 5% 27k LL (N.S.)	R59	11	1	XFMR OUTPUT HOTROD/BLUES DVL	T3
77	2	RES CF 1/4W 5% 1.5k LL (N.S.)	R60,R61	10	6	BUSHING SNAP 5/16x17/32 BLK	
76	2	RES CF 1W 5% 470ohm LL (N.S.)	R62,R63	9	1	CHOKE RE-ISSUE TUBE AMPS	
75	2	RES CF 1/2W 5% 100ohm LL (N.S.)	R70,R71	8	1	XFMR PWR SUPER RVB	T2
74	2	DIODE HV 3kV 200mA (N.S.)	D2,D3	7	1	LABEL GROUNDING SEMKO	
73	2	DIODE BYD33V (N.S.)	D6,D7	6	26	SCRW TF 6-32x1/4 PHP Z1	
72	1	RES CF 1/4W 5% 220k LL (N.S.)	R28	5	1	LABEL VOLTAGE	
71	2	CAP CD 120pf 500V 10% (N.S.)	C29,C10	4	1	XFMR REVERB VIBROVERB/65 DLX	T1
70	1	CAP MPF RDL .047uF 630V 10% (N.S.)	C37	3	8	LUG SOLDER 3/8	
69	2	CAP CD 220pf 500V 10% (N.S.)	C41,C42	2	2	JACK PHONO 2CND REAR PNL MNT	J5,J6
68	1	LABEL FUSE HOLDER "T10A 250V" (N.S.)		1	1	CHASSIS '64 VIBROVERB	
67	1	LABEL FUSE HOLDER "T5A 250V" (N.S.)		ITEM	QTY	DESCRIPTION	REFERENCE
66	1	FUSE TD 20mmx5mm 250v 10A (N.S.)	F3				
65	1	FUSE TD 20mmx5mm 250v 5A (N.S.)	F2				
64	2	SWITCH SLIDE SPST	S3,S4				
63	AR	TUBING SHRINK 3/16 BLACK (N.S.)					
62	1	WIRESET CHASSIS '64 VIBROVERB (N.S.)					
61	1	FISH PAPER BARRIER SUPER RVRB					
60	1	MAIN COMPONENT BOARD ASSY VIBROVERB					
59	3	NUT 6-32 HEX EXT LOCK					
58	5	LUG SOLDER BRASS TINNED W/2 HL					
57	2	SCREW TF 6-32 3/8" FHP STL BLX					
ITEM	QTY	DESCRIPTION	REFERENCE				


DATE
7/29/2002

DFT. ENG. ENG.

DATE DATE DATE

APPROVED

DATE



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

TITLE
CHASSIS ASSEMBLY
'64 VIBROVERB CUSTOM

SHEET
1/2

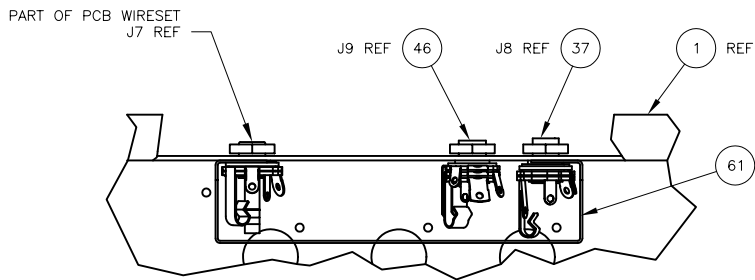
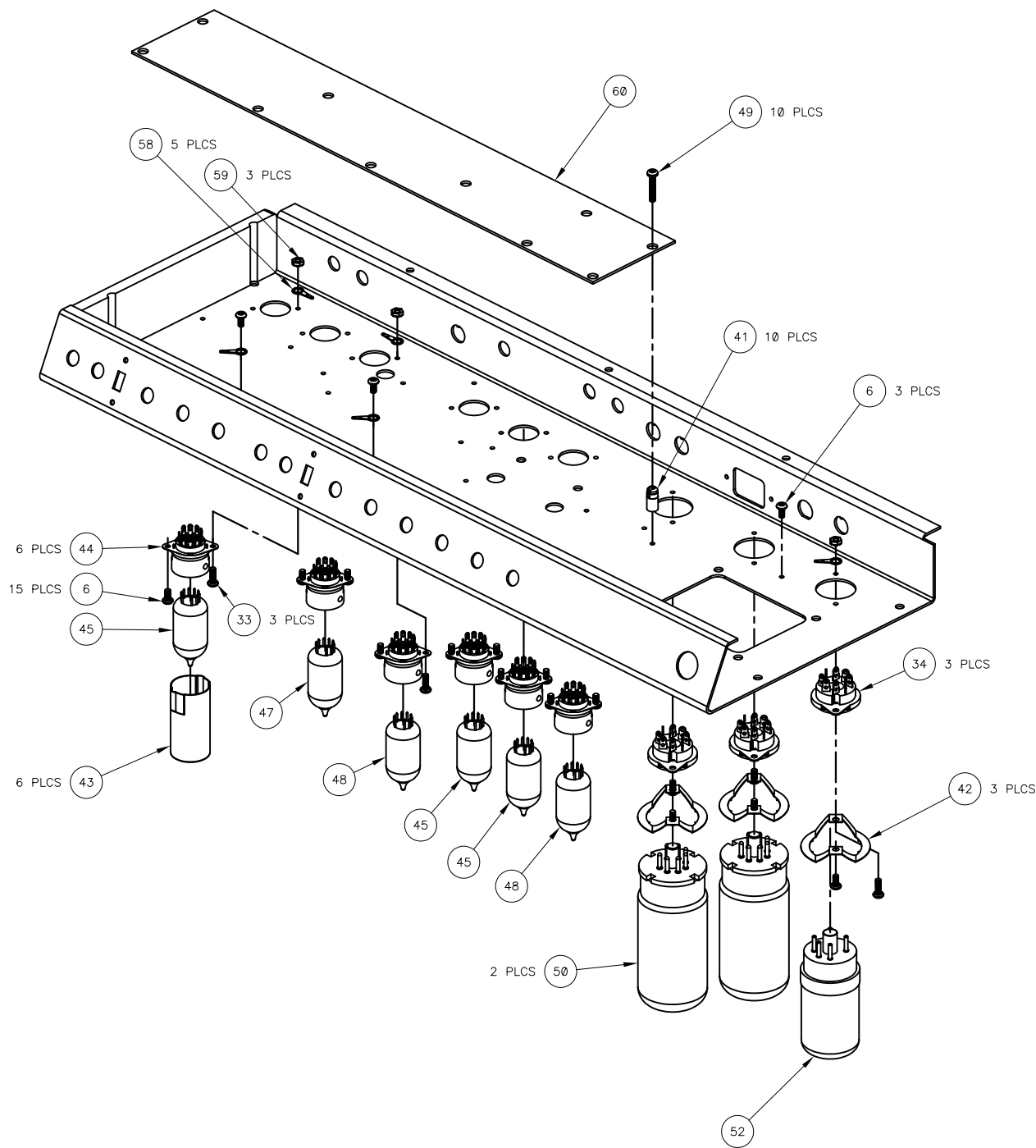
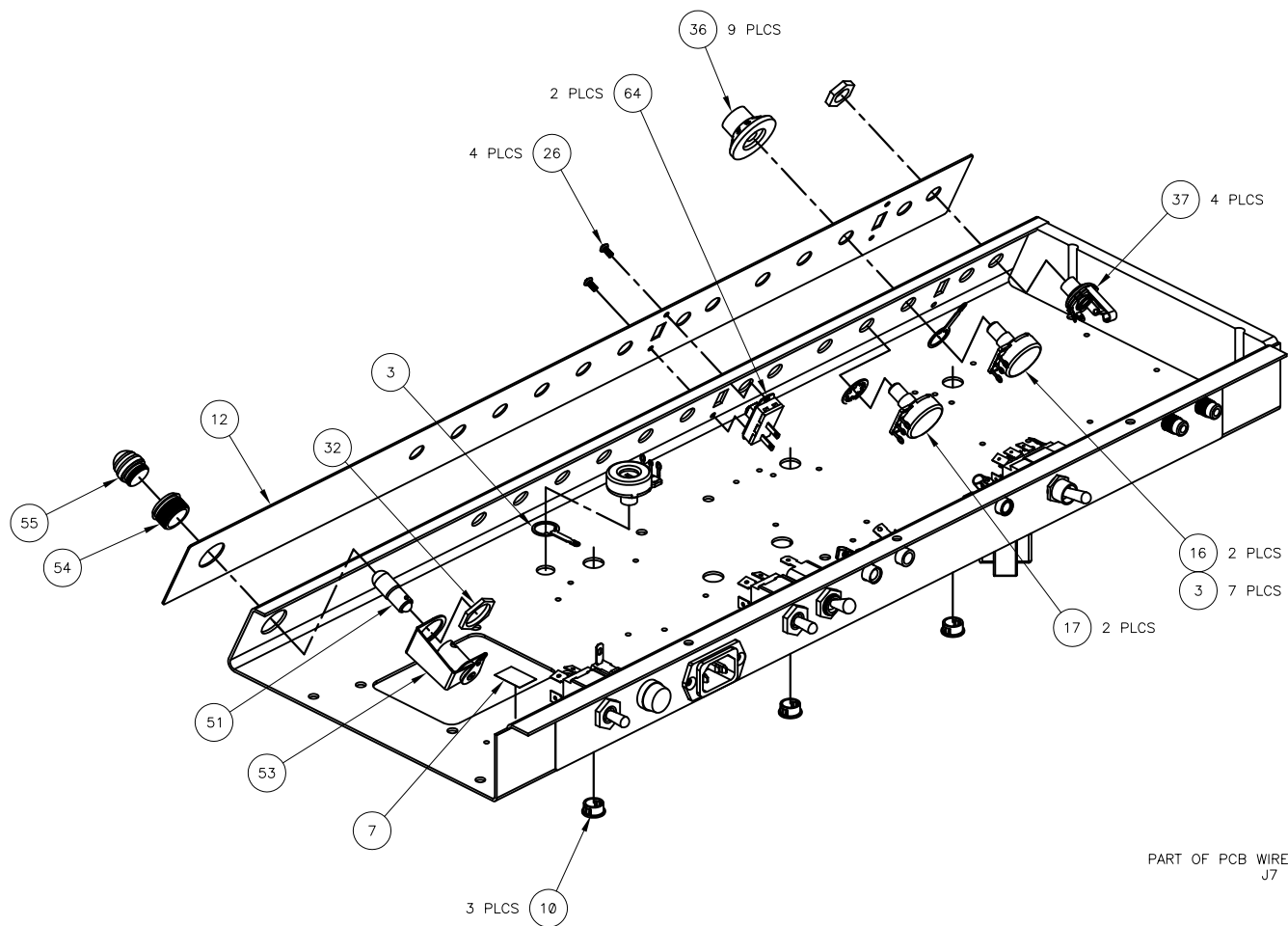
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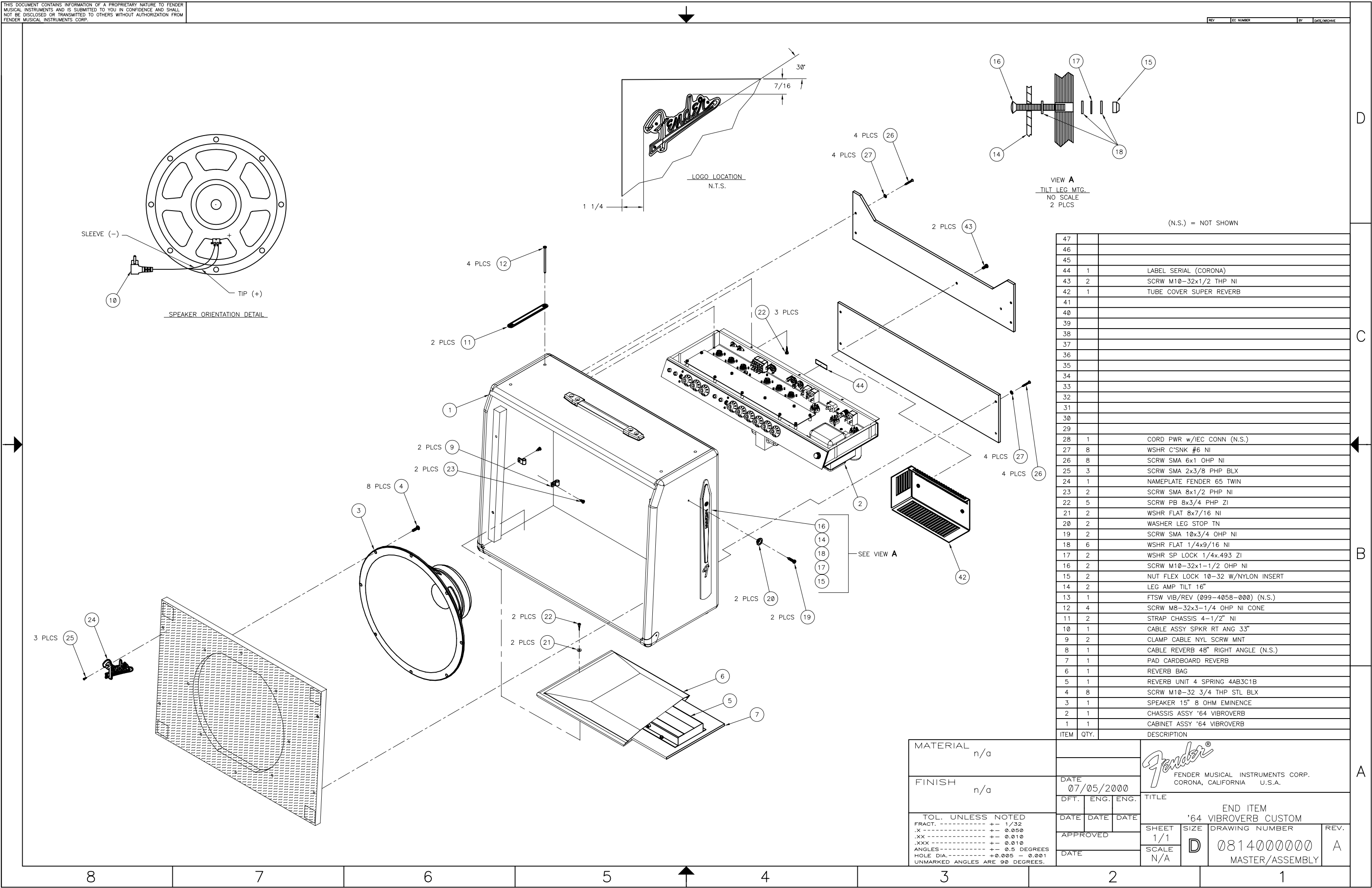
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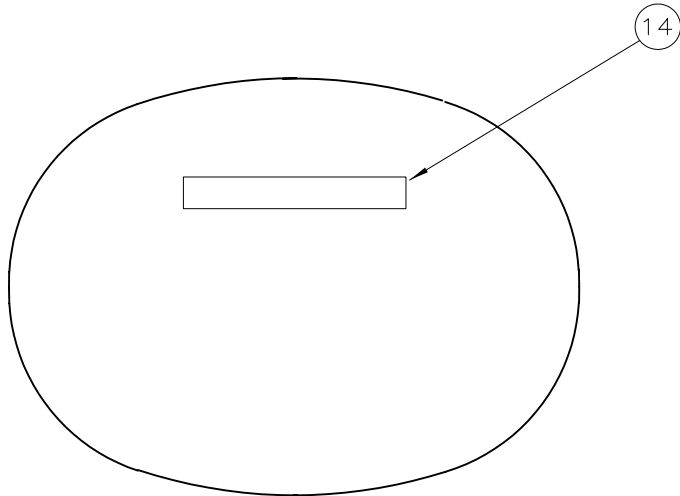
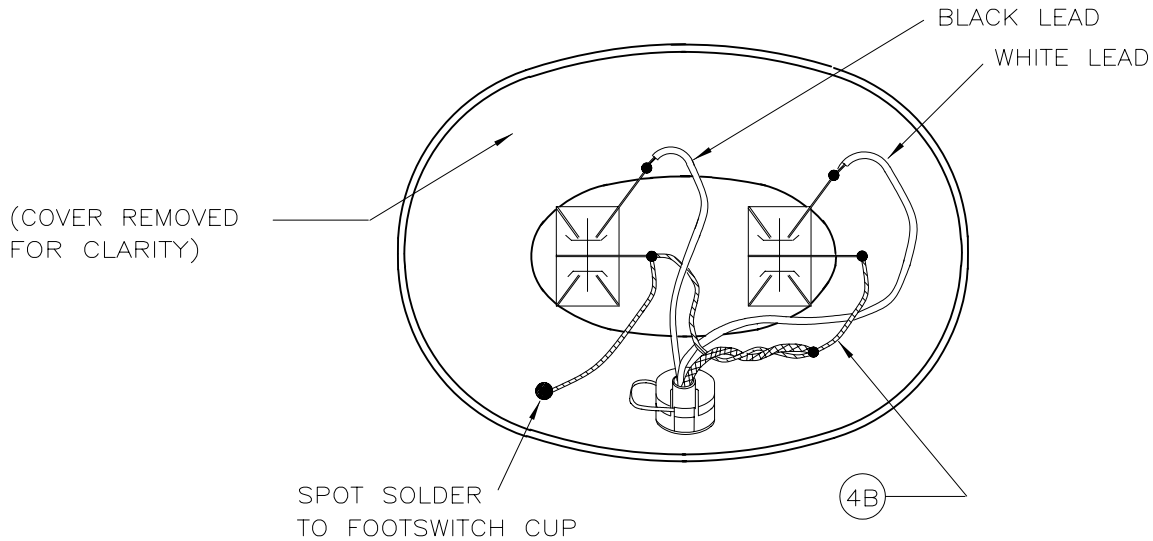
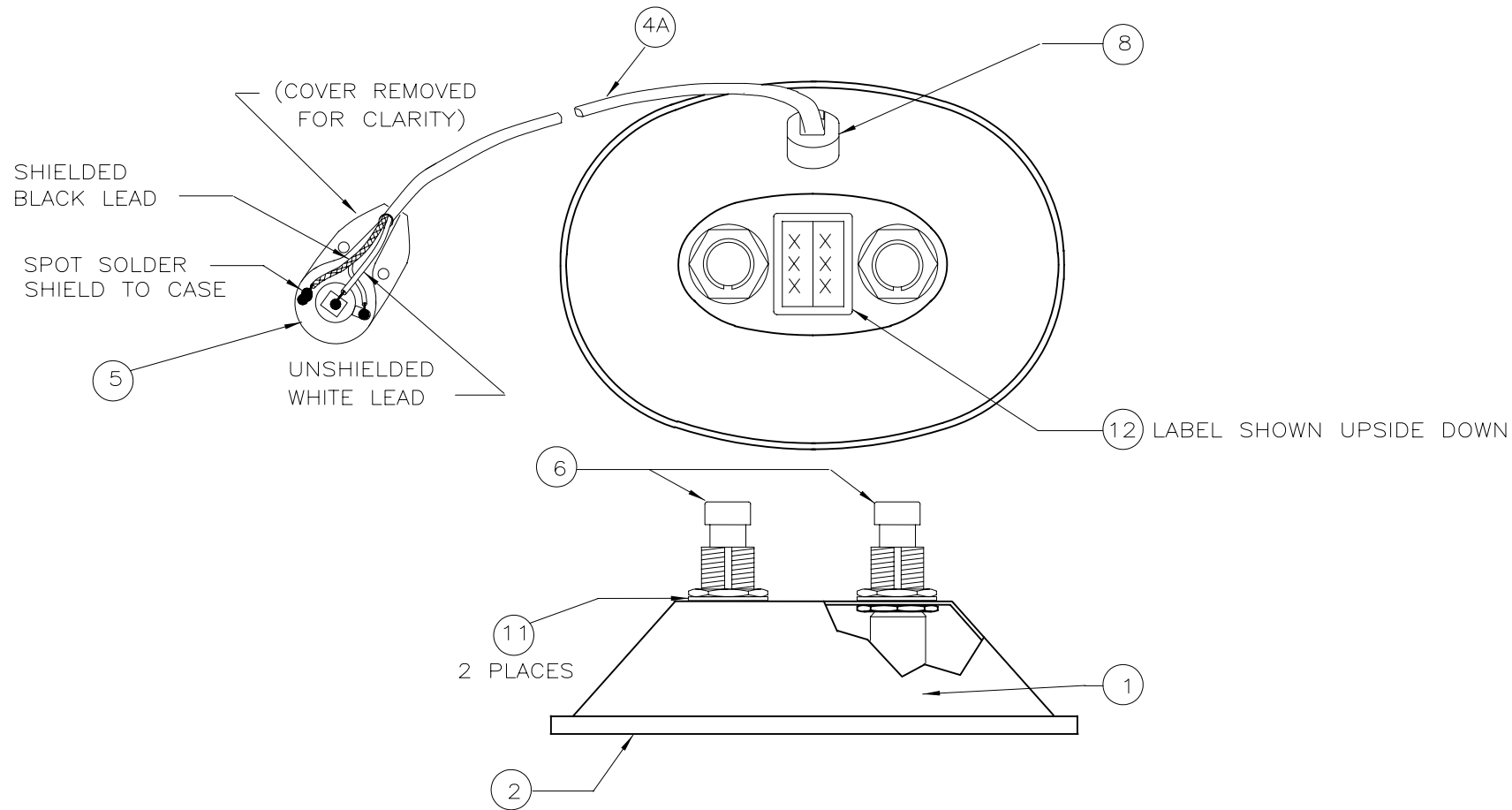
REV.
A

MASTER/ASSEMBLY




ENGINEER			 FENDER MUSICAL INSTRUMENTS CORP. CORONA, CALIFORNIA U.S.A.			TITLE CHASSIS ASSEMBLY '64 VIBROVERB CUSTOM					
DRAWN											
DATE 7/29/2002											
DFT.	ENG.	ENG.									
DATE	DATE	DATE									
APPROVED			SHEET 2/2			SIZE D		DRAWING NUMBER 0059740000		REV. A	
DATE			SCALE N/A					MASTER/ASSEMBLY			





14	1	LABEL MADE IN MEXICO
13	1	BAG JIFFY #1
12	1	DECAL PER CHART ABOVE
11	2	WASHER FLAT
10		
9		
8	1	BUSHING STRAIN RELIEF
7		
6	2	SWITCH
5	1	PLUG, 3 CONDUCTOR
4	1	WIRE SET
3		
2	1	COVER
1	1	CUP, FOOTSWITCH

ITEM		QTY.		DESCRIPTION			
ENGINEER				<div></div> FENDER MUSICAL INSTRUMENTS CORP. CORONA, CALIFORNIA 91720			
DRAWN							
DATE 8/1/90							
DFT.		ENG.		ENG.		TITLE	
DATE		DATE		DATE		ASSEMBLY, FOOT SWITCH 2 BUTTON, VINTAGE STYLE	
APPROVED				SHEET 1/1	SIZE D	DRAWING NUMBER 0037211000	REV. G
DATE				SCALE N/A		MASTER	