

KXR 200

SERVICE MANUAL



CONTENTS:

- Notices
- Specifications
- Circuit description
- Parts lists:
 - Preamp PCB assembly
 - Pwr amp PCB assembly
 - Chassis assembly
 - Cabinet assembly
 - Miscellaneous
- Schematics/diagrams

Fender Musical Instruments Corp. 7975 North Hayden Road Scottsdale, AZ 85258

KXR 200
(This is the model name for warranty claims)

SERVICE MANUAL

MARCH 1996

IMPORTANT NOTICE:

The information contained herein is CONFIDENTIAL and PROPRIETARY to Fender Musical Instruments Corp. It is disclosed solely for use by qualified technicians for purposes of equipment maintenance and service. It is not to be disclosed to others without the expressed permission of Fender Musical Instruments Co. All specifications subject to change without notice.

For warranty repair service, only Fender specified part numbers are to be used. It is recommended they also be used for post-warranty maintenance and repair.

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

A coded naming convention is used in the description of certain parts. The codes and what they mean are as follows:

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

KXR 200

SPECIFICATIONS

Product Release No.:	PR 286 <i>(This is not a model number)</i>		
Power output:	200 Watts RMS		
Distortion at 200 watts:	Less than .1% @ 1kHz, below compression Less than 1% @ 1kHz, maximum compression		
Rated Load Impedance:	4 Ω		
Input impedance:	22K Ohms		
Sensitivity:	1.03V RMS		
DELTACOMP Range:	20dB		
PREAMP SECTION:			
Input Impedance:	XLR – 1.82K Ω Phone – 18.2k Ω		
Senitivity for 200 watts: Channel and master Volume at maximum, all Tone controls at “0”	XLR – 2.9mV RMS Phone – 29mV RMS		
Equalizer:	For 3-band-EQ sections: +/- 12dB at 130,540 and 4200 Hz		
Sensitivity for channel Inserts, Master volume At maximum setting	500mV RMS (-6dBV)		
Sensitivity for Master Volume and FX return Control at maximum	130mV RMS (-18dBV)		
Dimensions:			
	Height: 29 3/4"	(75.6 cm)	(w/o casters)
	Width: 21 11/16"	(55.1 cm)	
	Depth: 12"	(30.5 cm)	
Weight:	88 lbs.	(40.0 kg)	

Product specifications are subject to change without notice

KXR 200

CIRCUIT DESCRIPTION

PREAMPLIFIER

Input channels 1 thru 3 will accept a balanced or unbalanced signal via a ¼" phone jack. Resistors R1 & R2 are precision 1% parts which maximize the Common Mode Rejection of the first opamp stage U1A. U1A provides a gain of 1, and rolls off high frequencies above 87kHz. The signal then couples to the 3 band equalizer circuit. Gyrator U2A is tuned to 130 Hz (LOW), and Gyrator U2B to 540Hz (MID). The HIGH control uses C10 and R14 to provide a 6dB per octave shelving filter above 4.2kHz. The boost/cut function is handled by U3A. The signal couples to the Volume control stage U1B. The Volume control (R17) varies the gain from less than 1 to about 23. The signal is then routed through a ribbon cable to the Channel Insert Jack J2. This 3 conductor Phone jack sends the signal out on the "Tip" contact, and accepts the return signal on the "Ring" contact. The signal then couples through C14 to the FX SEND bus, REVERB SEND bus, and MAIN bus.

Although similar to channels 1 thru 3, Input channel 4 features the addition of an XLR jack which will accept a balanced low impedance microphone input. Channel 4 also features a 4-band equalizer circuit. Gyrator U11A is tuned to 125Hz (LOW), gyrator U11B is tuned to 320 Hz (LOW MID), and gyrator U12A to 1kHz (HIGH MID). The HIGH control uses C56 and R92 to provide a 6dB per octave shelving filter above 3.2 kHz.

The signals from the FX SEND controls are summed at U13A, which provides a gain of 2 and drives the FX SEND jack (J10). To minimize noise, the FX RETURN jack (J11) contains a switch contact that grounds the signal line when the return jack is not being used. U13B provides a gain of less than 1 to a maximum gain of 5. The FX return signal sums with the main signal at U14A.

The signals from the REVERB SEND controls are summed at U6A, which provides a gain of 2 and feeds the reverb pan drive circuit at U6B. U15A makes up the reverb recovery circuit. U15b provides variable gain and drive U14A. U14A is the summing amplifier for the Main, Effects Return, and Reverb return signals. It provides a maximum gain of about 2, feeds U14B, and drives the Line Output jacks. The Line Outputs provide a pseudo-balanced signal. U14B feeds signal to the power amplifier.

The signal from the preamp feeds from P1B pin 4, through a ribbon cable, to P1A on the power amplifier PCB. The signal couples (via C1) to the unity gain amplifier U1B. U1B contains a closed loop (gain of 1) negative feedback path, along with positive feedback through the inverting Operational Transconductance Amplifier (OTA) U2. U1B and U2 make up the gain reduction circuit for the DeltaComp clip protection feature.

The attack and release circuit for the DeltaComp is made up by the Diode, Resistor, and Capacitor network which drives the Base of Q19. Comparator U1A senses the voltage from the Collectors of Q20 & Q21. When the power amplifier approaches clipping on a positive swing, the collector of Q5 pulls up R56, which turns on Q20, transferring -16vdc to the collector, pulling down R60. This causes the output (pin 1) of U1A to switch from +15vdc to -15vdc, lighting the DeltaComp/Clip LED. Note when the DeltaComp is disabled, the Led indicates clipping of the output stage. With the DeltaComp enabled, the Led indicates an active DeltaComp circuit. The negative control voltage from R60 also feeds through P1A to P1B on the preamp PCB. The voltage is routed to the DeltaComp switch (S5A), located on the front panel. With the switch engaged, the control voltage is sent back through the ribbon cable (via P1 pin 6) to the attack/release circuit.

The negative voltage drives through Diodes CR31-CR34, and charges Capacitors C16-C19 all at once in parallel as a one pole filter through a single time constant of $R60 \times (C16+C17+C18+C19)$ or $2.2k \times 8.8\mu f = 19.4mSec$. As they charge, Q19 turns on and provides current to pin 5 of the QTA (U2). The

KXR 200

DELTACOMP (CONT)

current controls the output amplitude of U2. The inverted signal from U2 mixes with the input to U1B providing cancellation which reduces the input to the power amplifier. This prevents the amplifier from clipping. When the output of the power amplifier is reduced, the output of U1A toggles back to +15vdc. Due to the blocking action of Diodes CR31-CR34, Capacitors C16-C19 are forced to discharge as a 4-pole filter with different time constants through R55. R51 prevents Parasitic oscillation while Zener CR30 provides 2 slopes which results in smoother limiting.

When the power amplifier approaches clipping on a negative swing, R62 is pulled low, turning on Q22 which pulls up the Base of Q21 transferring -16vdc to the collector.

POWER AMPLIFIER

JFET Q1 and associated components provide a 4-5 second turn-on delay for the audio input to the power amplifier. When the power is switched on, Capacitor C5 charges through Resistor R7. The negative Gate voltage pinches off the JFET, removing the ground from the input of the amplifier. When the power is switched off, C5 immediately discharges through Diode CR1, grounding the input of the amplifier.

(TROUBLESHOOTING TIP) Check for proper operation of this circuit when experiencing excessive turn-on or turn off "Pops", or no output when signal applied to the input. Many times the JFET itself can be the culprit. **NOTE:** Excessive turn-off "Pops" can also be caused by uneven discharge of the +/- power supplies. Usually a mismatch in the Filter Capacitors will cause this problem. Its easy to look at both supplies on an oscilloscope. Invert one scope input and check for even discharge to zero volts.

Q4 is the current source for the Differential Amplifier (Q2,Q3). For the Diff amp to work properly, one half of the current from the current source must flow through each of the Diff amp legs. If the same amount of current flows through each leg of the Diff amp, the voltage drop across resistors R14 & R15 must be the same. If not, there will be a DC offset at the output of the amplifier. The overall gain of the amplifier is set up around the Diff amp. $R16 (27K)$ is the feedback resistor and $R17 (1K)$ is the pull down resistor. $R_{fb} + R_{pd} \div R_{pd} = A_v$. Therefore $27K + 1K \div 1K = 28K \div 1K = 28A_v$.

Q9 & Q10 make up a voltage amplification stage. Again, to operate properly, the same amount of current must flow through these transistors. Thus the voltage drop across R20 & R21 must be the same. Diodes CR16-CR19 (BYV26D) make up the Fixed Bias circuit for the output transistors. The body of the Diodes is mounted through the heatsink to properly track the temperature of the transistors. These Diodes were selected because they exhibit a 2mV decrease in Knee Voltage for every 1 degree (Celsius) increase in temperature. The Collectors of Q9 & Q10 are at 0 volts. Therefore the Bias Diodes provide 2 voltage drops (1.2 volts) to the Base of Driver Transistors Q13 & Q14. One Diode drop (0.6 volts) Biases on the Driver Transistors. The remaining 0.6 volts drops across the output transistors (Q15-Q18) in parallel, Biasing them on.

Transistors Q11, Q12 and associated components comprise the Current Limiting or Short Proof protection circuit. There are usually two conditions which demand excessive output current from the amplifier. A shorted speaker cable, or a load impedance which is below the minimum rating of the amplifier. If these condition occur, the voltage drop across the Emitter Resistors (.33Ω 5 Watt) will dramatically increase. On the positive side of the amplifier, C11 charges through R29 & R34. On the negative side C12 charges through R30 & R35. This will cause Q11 & Q12 to turn on. This limits the amount of signal which is available to the Base of the Driver Transistors (Q13 & Q14). CR20-CR23 make up a latching circuit that senses the signal through R22. This ensures that Q11 & Q12 turn on hard in conduction. When the fault condition is removed from the output, the current limiting will remain latched up until the input signal is removed.

Q12 & Q14 are the Driver Transistors for the output section. Q15-Q18 are the output transistors. Notice on the schematic that the Base resistors carry the "Fp" designation. This indicates a Flame Proof/Fuse-

KXR 200

POWER AMPLIFIER (CONT)

Type resistor. They won't burn and they won't act like a fuse when exposed to an over-current condition. This prevents catastrophic damage to the output section.. If an output transistor shorts Base to Collector or Base to Emitter, the resistor will simply open. In many cases the amplifier will continue to operate, but at a reduced power level. An increase in distortion may also become apparent. When replacing these resistors, ALWAYS use the Fuse-Type OEM part.

PARTS LIST

PREAMP

PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	048497001	PCB ASSY KXR 200 PREAMP	STUFFED
1	048914000	CABLE RIBBON 8 CKT 7 IN	
1	048836000	CABLE RIBBON 12 CKT 23 IN	
1	037943000	CAP AE RDL .33uF 50V	C69
3	03869001	CAP AE AX 1.0uF 100V	C6,20,34
4	026517001	CAP AE AX 2.2uF 50V	C14,28,42,60
3	028459000	CAP AE RDL 2.2uF 50V 20%	C61,66,72
2	038691001	CAP AE AX 4.7uF 50V	C64,70
4	028463000	CAP AE RDL 10uF 50V 20%	C12,26,40,58
10	025960001	CAP AE AX 22uF 16V	C1,2,15,16,29,30,43,44,45,46
5	036954000	CAP AE RDL 22uF 63V 20%	C13,27,41,59,78
1	028471000	CAP AE RDL 47uF 50V 20%	C63
5	020909000	CAP CD 47PF 1000V 10%	C62,65,67,71,73
8	025979000	CAP CD 50PF 1000V 10%	C5,11,19,25,.33,39,49,57
8	038699001	CAP CA 100PF 100V	C3,4,17,18,31,32,47,48
1	039262001	CAP CA 680PF 50V	C76
1	039270001	CAP CA 10000PF 50V 5% LL	C51
4	027256000	CAP MPF .0015uF 100V	C9,23,37,55
1	027259000	CAP MPF .0033uF 100V	C68
1	027261000	CAP MPF .0047uF 100V	C53
3	027263000	CAP MPF .0082uF 100V	C7,21,35
1	027265000	CAP MPF .015uF 100V	C74
1	027267000	CAP MPF .022uF 100V	C75
4	027275000	CAP MPF .068uF 100V	C10,24,38,56
9	027278000	CAP MPF .1uF 63V 10%	C54, 79-86
4	027281000	CAP MPF .22uF 63V	C8,22,36,52
1	033477000	CAP MPF .68uF 63V 10%	C50
11	031266000	CONTROL RTRY 50K B TAPER	R20,22,44,46,68,70,98,99,110,116,118 (FX SENDS, REVERB SEND, RETURNS, MASTER VOLUME)
4	0249287000	CONTROL RTRY 50K 15A TAPER	R17,41,65,95 (VOLUME CONTROLS)
13	033002000	CONTROL RTRY 50K CNTR DET B	R7,10,13,31,34,37,55,58,61,82,85,88,91 (TONE CONTROLS)
15	016795000	IC DUAL OP AMP TL072	U1-15
2	030771000	JACK ¼ PCB 2/CD SCC	J10,11 (FX SEND AND RETURN)
4	016917	JACK ¼ PCB 3/CD DCC	J2,4,6,9 (CHANNEL INSERTS)
5	030987000	JACK ¼ PCB 3/CD DOC	J1,3,5,8,12 (CHANNEL INPUTS, LINE OUT)
2	048466000	JACK RCA SINGLE PCB MOUNT	J14,15
1	030762	JACK XLR FM PC VERT MT (A/D)	J7 (CHANNEL 4 IC INPUT)
1	037249	JACK XLR MALE PC VERT MT	J13 (LINE OUT)
73	020888001	JUMPER WIRE 22GA	W1-73
1	028841	KNOB PUSH BUTTON MX/PX	@S1
1	028097000	LED 5X5MM YELLOW SLB-55YY3	LD1
1	028039	LED RED 5X5 MM SLB-55VR3	LD2
1	048495	PCB FAB KXR 200	RAW PCB
3	024937	RES CF 1/4W 5% 10OHM LL	R130,131,132
1	024942001	RES CF 1/4W 5% 22OHM LL	R104
2	024947001	RES CF 1/4W 5% 47OHM	R128,129
6	024965001	RES CF 1/4W 5% 1K LL	R19,43,67,97,107,114
1	024967001	RES CF 1/4W 5% 1.2K LL	R126

KXR 200

PREAMP

PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	024969001	RES CF 1/4W 5% 1.5K LL	R92
3	02497001	RES CF 1/4W 5% 1.8K LL	R14,38,62
2	031819001	RES MF 1/4W 5% 1.82K LL	R73,74
1	029005001	RES CF 1/4W 5% 2K LL	R105
8	024971001	RES CF 1/4W 5% 2.2K LL	R8,16,32,40,56,64,94,124
3	029455001	RES CF 1/4W 5% 2.4K LL	R83,86,89
3	024972001	RES CF 1/4W 5% 2.7K LL	R11,35,59
1	024973001	RES CF 1/4W 5% 3.3K LL	R120
1	024978000	RES CF 1/4W 5% 5.5K LL	R108
4	024981001	RES CF 1/4W 5% 10K LL	R109,115,133,134
3	024983001	RES CF 1/4W 5% 12K LL	R119,121,122
8	024986001	RES CF 1/4W 5% 18K LL	R6,15,30,39,54,63,81,93
16	031818001	RES MF 1/4W 1% 18.2K LL	R1,2,4,5,25,26,28,29,49,50,52,53,76,77,79,80
15	024987001	RES CF 1/4W 5% 22K LL	R21,23,24,45,47,48,69,71,72,100-102,111,117,125
3	024993001	RES CF 1/4W 5% 47K LL	R103,106,112
6	024996001	RES CF 1/4W 5% 82K LL	R9,12,33,36,57,60
9	024997001	RES CF 1/4W 5% 100K LL	R18,42,66,84,87,90,96,113,123
1	028861001	RES CF 1/2W 5% 3.3K LL	R127
2	036375	SPACER RND NYL .147X.250X.720	@LD1-2
1	022904	SWITCH PB PC MT	S1

POWER AMPLIFIER

PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	029779*	BREAKER THERMAL NC OPEN 248	TS1
8	028459	CAP AE RDL 2.2UF 50V 20%	C1,3,6,16-20
1	028460	CAP AE RDL 4.7uF 50V 20%	C5
5	028471	CAP AE RDL 47uF 50V 20%	C13,14,31,32,34
3	025787	CAP AE RDL MINI 100uF 16V NP	C7,11-12
2	028494000	CAP AE RDL 100uF 35V 20%	C25-26
2	028031	CAP AE RDL 3300uF 63V	C22-23
1	033580000	CAP PFF RDL .0022uF 100V 10%	C8
5	027278000	CAP MPF .1uF 63V 10%	C9-10
1	024854000	CAP MPF RDL .1uF 400V 10%	C15
1	041501	CAP MPF AX 2.2uF 100V 10%	C33
7	064089001	DIODE 1N4003 LL	CR38-41, 44-46
25	006260001	DIODE 1N4448 SIGNAL LL	CR1-3,5-9,11-14,20,21,24,25,31-37,42,43
2	020534000	DIODE 1N5402 RECTIFIER 200V C&F	CR28,29
4	028776000	DIODE BIAS BYV26D LEAD FORMED	CR16-19
4	025821001	DIODE HV FDH-400 SWITCHING LL	CR10,15,26,27
1	027329001	DIODE ZEN 1N5228B 3.9V 5% LL	CR30
2	027327001	DIODE ZEN 1N5234V 6.2V 5% LL	CR22,23
1	031019001	DIODE ZEN 1N5245V .5W 15V 5% LL	CR4
21	025802000	FSTN TAB MALE .250X.032 PCT MT	CP1,2A,2B,3-16
2	025996000	FUSE CLIP PCB .250 & 5MM FUSE	XF1
4	020775000	FUSE CLIP PCB 5V	XF2,3
1	090738000	FUSE QA 1-1/4X1/4 250V 6A	F1 (100/120V ONLY)
1	020796	FUSE QA 20MMX5MM 250V 3.15A	F1 (EXPORT 220/230/240V ONLY)
2	013112000	FUSE TD 20MMX5MM 250V 1A	F2,3
1	027416000	HDR .1 CTR 8CKT SQ PIN	P1A
1	048939000	HEATSINK BAR BXR/KXR 200	MAIN HEATSINK
2	025796000	HEATSINK TO-220	@U3,4
1	027404000	IC CA3080AE OTA	U2
1	016795000	IC DUAL OP AMP TL072	U1
1	013562000	IC REGULATOR +15V MC7815CT	U3
1	013564000	IC REGULATOR -15V MC7915CT	U4
1	027387000	INDUCTOR AIR CORE RDL 2.5UH	L1
4	038815000	INSULATOR SILICONE TO—3P	@Q15-18
2	026043000	JUMPER WIRE 18GA .8X.175	JP1,2

KXR 200 POWER AMPLIFIER

PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
27	020888001	JUMPER WIRE 22GA	W1-27
1	048843001	PCB ASSY PWR AMP BXR 200	STUFFED
1	04884200	PCB FAB PWR AMP BXR 200	RAW PCB
4*	031693001	RES MF FUSE 1/4W 5% 4.7 OHM LL	R36,37,40,41
2*	033205001	RES MF FUSE 1/4W 5% 15 OHM LL	R27,28
1*	027749001	RES MF FUSE 1/4W 5% 22OHM LL	R33
2	024947001	RES CF 1/4W 5% 47 OHM LL	R10,11
1	024952001	RES CF 1/4W 5% 100OHM LL	R4
2	024956001	RES CF 1/4W 5% 220OHM LL	R20,21
2	024961001	RES CF 1/4W 5% 470OHM LL	R29-30
1	024963001	RES CF 1/4W 5% 680OHM LL	R67
8	024965001	RES CF 1/4W 5% 1K LL	R5,8,17,22,24,25,49,64
7	024917001	RES CF 1/4W 5% 2.2K LL	R14-15,18-19,34-35,60
1	024977001	RES CF 1/4W 5% 4.7K LL	R51
5	025942001	RES CF 1/4W 5% 7.5K LL	R12,52-55
6	024981001	RES CF 1/4W 5% 10K LL	R3,47,50,57-58,61
2	024985001	RES CF 1/4W 5% 15K LL	R13,65
1	024987001	RES CF 1/4W 5% 22K LL	R1
4	024988001	RES CF 1/4W 5% 27K LL	R9,16,31,32
1	024989001	RES CF 1/4W 5% 33K LL	R2
5	024997001	RES CF 1/4W 5% 100K LL	R56,59,62,63,66
1	024998001	RES CF 1/4W 5% 120K LL	R48
2	025069001	RES CF 1/4W 5% 1M LL	R6,7
1	028029001	RES FILM 1W 5% 1.5K LL	R73
1	027627001	RES FILM 1W 5% 10OHM LL	R44
2	036621001	RES CF 1W 5% 6.8K LL	R23,26
2	027628000	RES FILM 2W 5% 47OHM	R45,46
4	032958000	RES WW BT 5W 10% .33OHM	R38-39,42-43
1	048467	RES WW BT 5W 10% 39OHM	R72
1	048468	RES WW BT 10W 10% 47OHM	R71
2	041595000	SCRW 6-32X3/16 PHP STL ZI SEMS	@TS1
5	027638000	SCRW TF 4-40X3/8 HWHS ZI .1 "HD	@Q13-18, U3,4
5	032908000	SCRW TF 6-32X3/8 PHP ZI	PCB TO HEATSINK MOUNT
1	026411000	THERMISTER 2.5 OHM 8A C30-19	TH1
1	014689000	XSTR N-CH JFET J111 TO-92	Q1
3	016739000	XSTR NPN 2N4401 TO-92	Q11,20,21
4	02575100	XSTR NP 2SC2362K/2SC2389	Q2-4,8
2	028763000	XSTR NPN 2SC3281 TOP-3L	Q15,17
1	028760000	XSTR NPN 2SC3298A TOP-220	Q13
1	014867000	XSTR NPN MPSW10 TO-226AE	Q10
2	016742000	XSTR PNP 2N4403 TO-92	Q12,22
3	025752000	XSTR PNP 2SA1016K TO-92	Q5-7
2	028762000	XSTR PNP 2SA1302 TOP-3L	Q16,18
1	028759000	XSTR PNP 2SA1306A0 TOP-220	Q14
1	014408000	XSTR PNP DRLNGTN MPSA63 TO-92	Q19
1	014866000	XSTR PNP MPSW92 TO-226AE	Q9

CHASSIS ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	048505000	CHS ASSY KXR 200 120V	
1	00756500	BUSHING SR .625X.125X37/64 BLK	@ PWR CABLE 100/120V ONLY
1	010401	BUSHING SR .625X.125X37/64 WHT	@ PWR CABLE 230/240V ONLY
1	026541000	CABLE ASSY PRW W/.250 TAB 120V	POWER CABLE 120V ONLY
1	048463	CABLE ASSY PWR .250 TAB 100V	POWER CABLE 100V ONLY
1	033331	CABLE ASSY PWR 220/240V	POWER CABLE 230V ONLY
1	038602	CABLE ASSY PWR AUST .250 TAB	PWR CABLE AUSTRALIA 240V
1	040993	CABLE ASSY PWR 5A U.K. .250 TAB	P CABLE UNITED KINGDOM 240V
1	047524000	CAP ASSY .1UF 400V Q/RECP/TAB	@BRIDGE RECTIFIER EMI SUPPRESSION
1	024854000	CAP MPF RDL .1UF 400V 10%	RAW CAP FOR ABOVE ASSEMBLY
1	048499000	CHS KXR 200	
1	032925000	DIODE BRIDGE RECTIFIER	

KXR 200 CHASSIS ASSEMBLY (CONT)

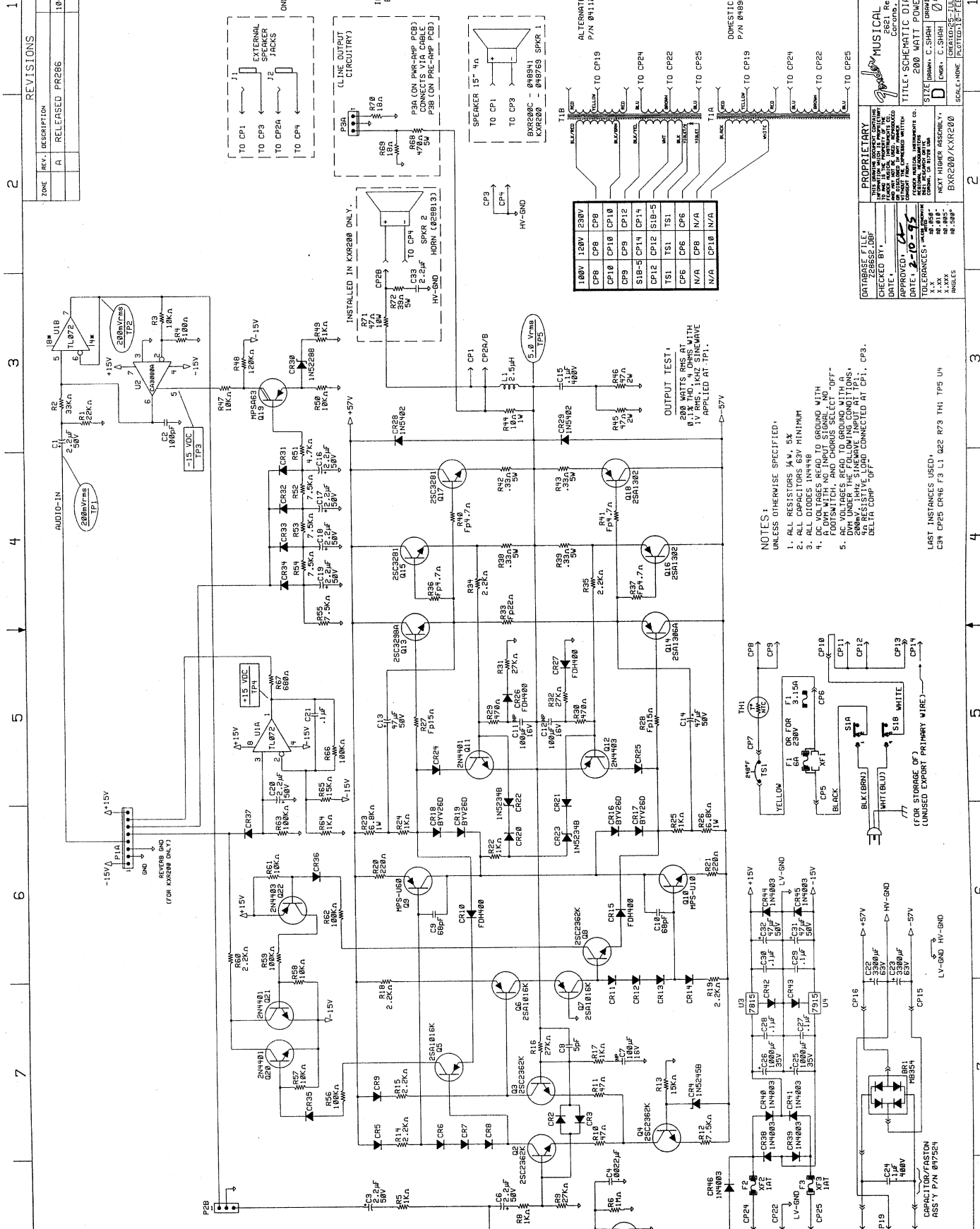
QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	048971000	HEAT SINK EXTRUDED BXR 200	
28	048835000	KNOB CTL SUCTION DBL BLK/OFFWHT	
2	069393000	NUT 6-32 HEX EXT LOCK	GROUND LUG MOUNT
1	022004000	NUT KEPS #8-32 ZINC	BRIDGE RECTIFIER MOUNT
1	048500000	PANEL FRONT KXR 200	
1	048501000	PANEL REAR KXR 200	
2	047523000	RECEPTACLE W/TAB .250 18-14 GA	
6	017716000	SCREW M 8-32X1/2 PHP BLX	HATSINK TO CHASSIS MOUNT
4	037568000	SCREW M 6-32X3/4 PHP ZI LW	PWR AMP PCB MNT
2	039367000	SCREW M 6-32X3/8 PHPS SS ITLW	PREAMP PCB MOUNT
4	031184000	SCREW M 6-32X1/4 PHPS BLX ITLW	SHIELD MOUNT
2	031868000	SCREW PLASTITE 4X1/4 PHP BLX	FEMALE XLR MOUNT (FRONT)
2	037990000	SCREW PLASTITE 6X3/5 PHP BLX	MALE XLR MOUNT (REAR)
4	037997000	SCREW TF 10-32X5/8 HWHS BLX	TRANSFORMER MOUNT
5	027636000	SCREW TF 8-32X5/8 HWH BLX	HEATSINK TO TRANSISTOR BAR
1	049524000	SHIELD KXR 200	@ PREAMP
4	031241000	STANDOFF HX M/F AL 6-32X3/8	SHIELD MOUNT
1	040582000	SWITCH DPST .250 TAB GLOBAL	POWER SWITCH
1	048960000	XFMR DOMESTIC BXR 200	T1 (120V DOMESTIC ONLY)
1	041122	XFMR PWR EXPORT	T1 (100/120/230V)

CABINET ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	048498000	CAB ASSY KXR 200	ENTIRE CABINET
1	047120000	CABLE REVERB 1450MM	
4	023513000	CASTER SWIVEL	
0.48	026317000	CLOTH GRILLE BLACK PVC	
6	031867000	CORNER 2 HOLE W/ NOTCH BLK PWDR	FRONT AND TOP/REAR
2	03184000	CORNER 3 HOLE BLK PWDRD	BOTTOM/REAR
4	029821000	EYELET RFLNGD .215ODX.315L	REVER PAN MOUNT
2	049564000	GASKET HANDLE	
1	02888500	GASKET HORN DUAL PIEZO	
4	02784900	GLIDE CAB 1.24X.335 BLX WAX	STEEL ONLY
1	048498001	GRILLE ASSY KXR 200	COMPLETE GRILLE
2	048958000	HANDLE RECESSED KXR/BXR	
1	028813000	HORN DUAL PIEZO (ADD 028885)	COMPLETE HORN)
4	019275000	INSERT GLIDE CUSHION 1.27 DIA	RUBBER ONLY
4	023505000	MTG PLATE - SWIVEL CASTER	CASTER SOCKET
1	011298000	NAMEPLATE FENDER SMALL	LOGO
8	021972000	NUT T 10-32X3/4 STR 3 PRNG BLX	SPEAKER MOUNT
1	028055000	REVERB UNIT 800 OHM 8EB2C1B DN	REVERB PAN
REF	026570000	TOLEX BLACK LT WEIGHT	
6	029527000	WSHR FNSH 8-5/8 FLNGD BLX WX	CHASSIS MOUNT

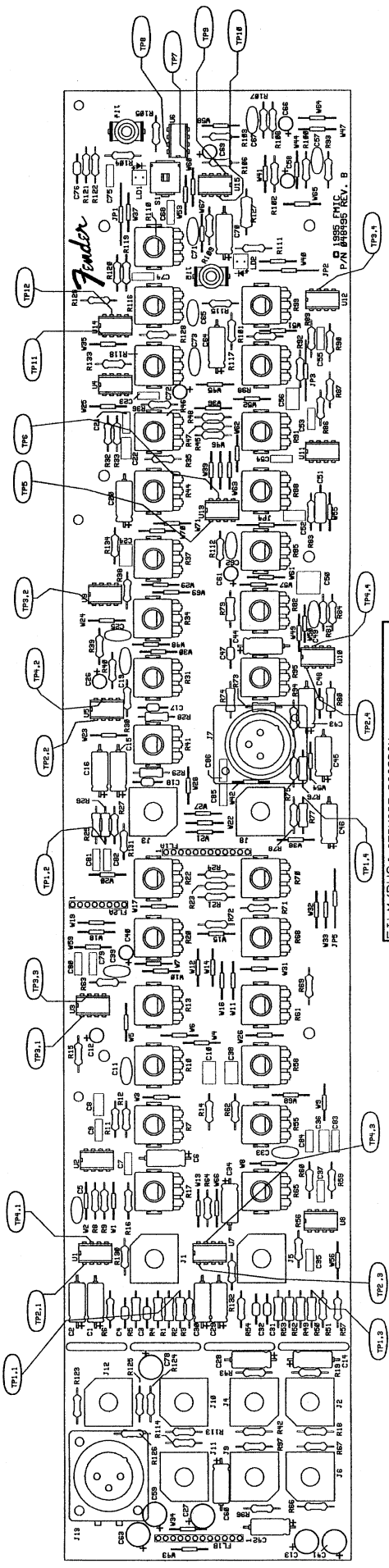
MISCELLANEOUS

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
	048502000	MANUAL OWNER KXR 200	
	048493	SCHEM REDU W/SVC KXR200 PRE	PREAMP
	048840	SCHEM REDU W/SVC PA BXR/KXR 200	POWER AMPLIFIER



1 2 3 4 5 6 7 8

REVISIONS		
REV.	DESCRIPTION	DATE
A	PR 287	MAR-16-95
B	EC1546	AUG-15-95



FILM/DWG: SERVICE DIAGRAM
 DATE: 18-JUN-99
 LAYERS PLOTTED: 1 2 3 4
 10

PROPRIETARY
 THIS DRAWING IS THE PROPERTY OF FENDER MUSICAL INSTRUMENTS CO. IT IS TO BE USED FOR THE PURPOSES SPECIFIED AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF FENDER MUSICAL INSTRUMENTS CO.

MUSICAL INSTRUMENTS
 2821 Research Drive
 Corona, CA 92728 USA

TITLE: KXR200 SERVICE DIAGRAM

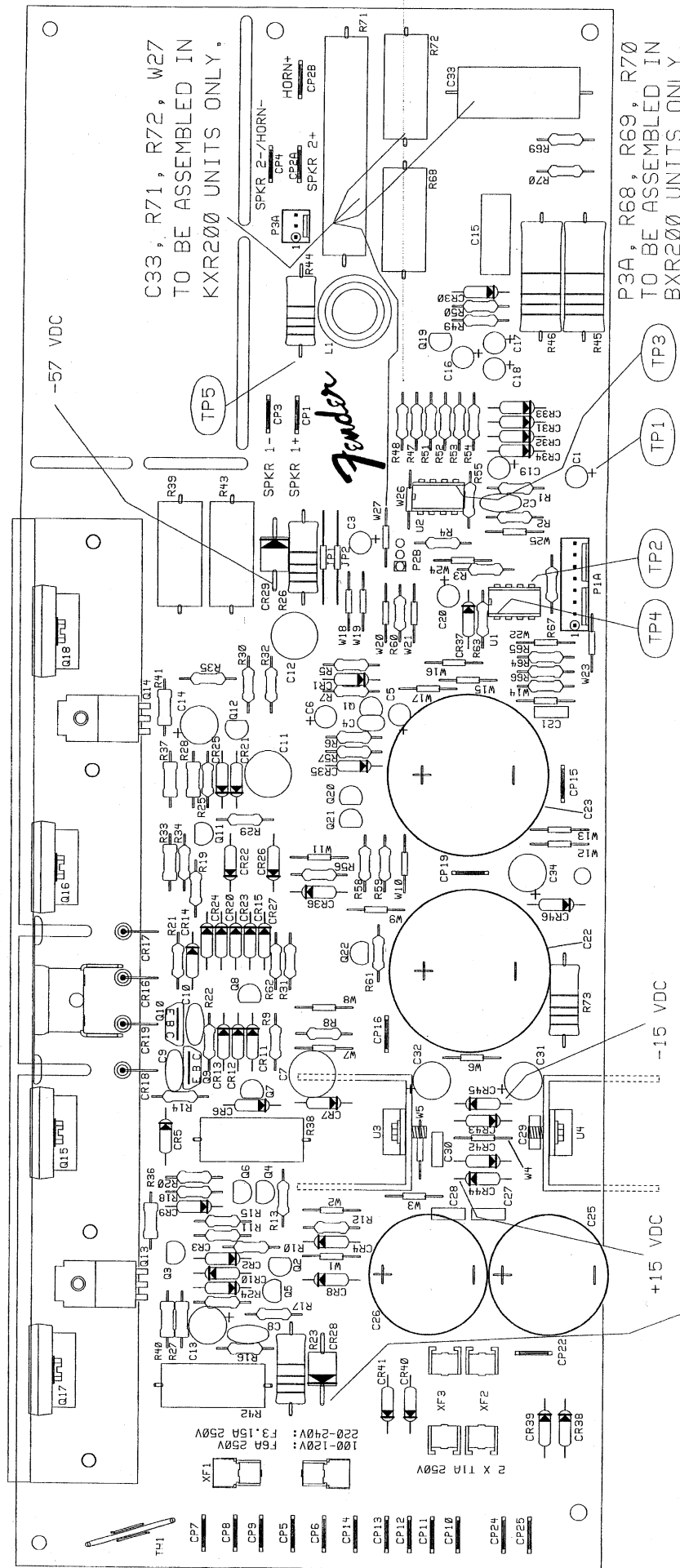
SIZE: D
DATE: 01/18/99
BY: J. L. LAMAR
REV. 048494
SCALE: 1/4"
SHEET 1 OF 1

DATABASE FILE:
CHECKED BY: JEN AT
DATE: 01/18/99
APPROVED: J. L. LAMAR
DATE: 01/18/99
TOLERANCES: .0005" .001" .002" .005" .010" .015" .020" .030" .040" .050" .060" .070" .080" .090" .100" .120" .150" .180" .200" .250" .300" .350" .400" .450" .500" .600" .700" .800" .900" 1.000"

1 2 3 4 5 6 7 8

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	RELEASED PR286	10-FEB-95	S.SHAH
	B	ECCR#31	20-SEP-96	FM



PROPRIETARY

THIS DRAWING DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO FENDER MUSICAL INSTRUMENTS CO. AND MAY NOT BE USED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN CONSENT FROM:

FENDER MUSICAL INSTRUMENTS CO.
REGIONAL HEADQUARTERS
2621 RESEARCH DRIVE
CORONA, CA 91720 USA

NEXT HIGHER ASSEMBLY:
BXR200/KXR200

DATABASE FILE:
Z286P2.DBF

CHECKED BY: MZ

DATE: 10-1-96

APPROVED: FM

DATE: 9-14-96

TOLERANCES: UNLESS OTHERWISE NOTED

X.X ±0.050"

X.XX ±0.010"

X.XXX ±0.005"

ANGLES ±0.500°

FILM/DWG: SERVICE DIAGRAM

DATABASE: Z286P2.DBF **DATE:** 24-SEP-96

LAYERS PLOTTED: 1 2 3 4 18

TITLE: SERVICE DIAGRAM
POWER AMPLIFIER 200 WATTS

SIZE: B

DRAWN: C.SHAH

ENGR: C.SHAH

DRAWING NUMBER: 048841

REV.: B

CREATED: 25-AUG-94

PLOTTED: 24-SEP-96

SCALE: NONE

SHEET: 1 OF 1