

KXR 60

KEYBOARD EXTENDED RANGE

SERVICE MANUAL

CONTENTS:

- Notices
- Specifications
- Circuit Description
- Parts lists:
 - PCB assembly
 - Chassis assembly
 - Cabinet assembly
 - Miscellaneous
- Schematics/diagrams



KXR 60

KEYBOARD EXTENDED RANGE

(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 60

SPECIFICATIONS

Product Release No.: PR 299 *(This is not a model number)*

POWER AMPLIFIER SECTION:

Power output: 50 Watts RMS
Distortion at 50 Watts: Less than .1% @ 1kHz, before compression
Less than 1% @ 1kHz, maximum compression

Rated load impedance: 8 Ω

Sensitivity: 370 mV RMS

Input impedance: 33K Ω

DELTACOMP Range: 20dB

PREAMP SECTION:

Input Impedance: 36k Ω

Sensitivity for 50 watts: 28 mV
CHANNEL and MASTER VOLUME
at maximum all tone controls at "0"

Equalizer: Low +/- 12dB at 100Hz (shelving)
Low Mid +/- 12dB at 338Hz
High Mid +/- 12dB at 1188Hz
High +/- 12dB at 4 kHz (shelving)

DIMENSIONS: Height: 22" (55.9 cm)
Width: 18" (45.7 cm)
Depth: 12" (30.5 cm)

Weight: 46 lbs. (21 kg)

Product specifications are subject to change without notice

KXR 60

CIRCUIT DESCRIPTION

Preamp

The Channel One input will accept a Balanced or Unbalanced signal via a ¼" Phone plug. U1B provides a gain of 1, and rolls off high frequencies at about 128kHz. The signal then couples to the second half of the input stage.

Located within the negative feedback loop of U1A is the Channel One Volume control. It provides a minimum gain of 1, and a maximum gain of 15. At maximum gain, Capacitor C6 rolls off the high frequencies at about 47kHz.

The input stage also features a function that shorts across the Volume control via a switch contact in the ¼" input jack. This causes U1A to remain locked into a Unity gain mode, disabling the Volume control, until a plug is inserted into the jack. This reduces noise in the input circuitry. Channel Two is identical to Channel One.

The two channels sum together to feed the Reverb Drive stage U3A, and the Summing Amp U4B. U3B senses the return signal from the Reverb Pan. R24 and C19 provide a slight boost in the high frequencies. R23 and C18 roll off low frequencies. This produces a fairly bright reverb sound. To eliminate noise, C17 limits the high frequency response to about 5kHz. All ground connections in the Reverb circuitry are routed through a dedicated Reverb Ground trace to the Star Ground point on the circuit board. This eliminates any bleed through of noise into other audio ground paths.

U4B sums the dry signal with the Reverb return signal and then drives the Equalizer circuit. Gyrotors U5B, U6B, and U6A are used for the Low (100Hz), Low Mid (338Hz), and High Mid (1588Hz) bands. The High band uses a single pole shelving filter (R40,C31) at 4kHz. U5A performs the Boost/Cut function, and also drives the Effects Loop.

The Tape in jacks are buffered by U7A and sum with the main signal just prior to the Effects Loop. The Effects Loop Send is capable of providing a pseudo balanced signal if desired. This helps to reduce noise and hum. The Effects Loop Return will accept an Unbalanced or Balanced input.

U7B buffers the signal from the Effects Loop, and drives the Master Volume control. R55 and C39 boost the low frequencies at 220Hz. Between the output of U7B and the Master Volume control, C40 and R56 boost high frequencies. The boost in Low and High frequencies provide a slight "Smile Curve" response.

DELTACOMP™

U8B is a unity gain amplifier that drives the power amp stage. U9 (CA3080A) is an Operational Transconductance Amplifier (OTA). In conjunction with U8B, it acts as the gain reduction circuit for the Deltacomp™. The attack/release circuit for the DeltaComp™ contains the Diode, Resistor, and Capacitor network that drives the base of Q8 (MPSA63). Comparator U4A senses the output of the power amplifier. As the amplifier approaches clipping, the output of U4A toggles negative. The negative voltage through Diodes CR14-17 charges Capacitors C54-C57 all at once in parallel as a one-pole filter through a single time constant made up with R84. $R84X(C54+C55+C56+C57) = 2.2K \times 8.8\mu F = 19.4mSec$.

KXR 60

DELTACOMP™ (CONT)

As the capacitors charge, the negative voltage at the base of transistor Q8 turns on this Darlington device. Current flows from the Collector of Q8 to pin 5 of U9. This current controls the output amplitude of U9. The inverted output from U9 mixes with the signal at the input of U8B (pin 5) causing 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 Comparator toggles positive, removing the negative control voltage from the attack/release circuit. The blocking action of Diodes CR14-CR17 force Capacitors C54-C57 to discharge(Release) through a 4-pole filter with different time constants, through Resistor R85.

Turn-on delay

JFET Q7 and associated components provide a 2 - 3 second turn-on delay for the audio input to the power amplifier. Upon power-up, the negative 16 volts charges Capacitor C45 through Resistor R64. The negative gate voltage pinches off the JFET, removing the ground from the input of the amplifier. When switching the power off, C45 immediately discharges through Diode CR1, grounding the input of the amplifier.

TROUBLE SHOOTING 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. It's easy to look at both supplies on an oscilloscope. Invert one scope input and check for even discharge to zero volts.

Power Amplifier

U10 is a high voltage op-amp (MC1436) that provides voltage gain for the power amplifier. Bootstrap Capacitors C47 and C48 sense the output through R104. This provides more voltage swing for the opamp with respect to the amplifier output.

Diodes CR2 - CR5 (BYV26D) make up the Fixed Bias circuit for the output transistors. The bodies of the Diodes mount 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. Pin 6 of U10 is at 0 Vdc. Therefore the Bias Diodes provide 2 voltage drops (1.2 volts) to the base of Darlington output Transistors Q5 and Q6.

Diodes CR6 - CR9 make up a voltage clamp protection circuit. If the bases of the output transistors reach 4.5 volts with respect to the output, the diodes will turn on, clamping the voltage.

The output signal feeds through the Headphone Jack before driving the 15" speaker and dual piezo horn. Inserting a 1/4" plug into the Headphone Jack will mute the speaker and horn.

PARTS LIST

PRINTED CIRCUIT BOARD ASSEMBLY

<u>QTY</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>REFERENCE DESIGNATION</u>
4	038690001	CAP AE AX 1.0uF 100V	C18,25,43,46
5	026517001	CAP AE AX 2.2uF 100V	C45,54,55,56,57
1	038692001	CAP AE AX 10uF 35V	C51
19	009512001	CAP AE AX 22uF 25V 20%	C1,2,5,7,8,11,13-15,20,23,24,33-36,49,50,64
4	049521000	CAP AE AX 47uF 50V	C47,48,62,63

KXR 60

PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	031756	CAP AE 4700uF 50V	C60,61
11	039256001	CAP CA 68PF 100V LL	C3,4,6,9,10,12,21,22,32,37,38
2	039262001	CAP CA 680PF 50V	C17,30
1	039266001	CAP CA 3300PF 100V LL	C16
1	038702001	CAP CA 6800PF 100V LL	C28
1	03927001	CAP CA 10000PF 50V 5% LL	C31
3	038703001	CAP CA 1uF 50V LL	C27,52,53
1	033578003	CAP PFF RDL .001uF 100V 10%	C44
1	033581003	CAP PFF RDL .0033uF 100V 10%	C41
1	036234003	CAP PFF RDL .015uF 100V 10%	C26
3	033591003	CAP PFF RDL .033uF 100V 10%	C39,40,42
1	033592003	CAP PFF RDL .047uF 100V 10%	C19
1	033594003	CAP PFF RDL .056uF 100V 10%	C29
1	024854000	CAP MPF RDL .1uF 400V 10%	C59
1	041501	CAP MPF AX 2.2uF 100V 10%	C58
1	038656000	CONTROL 10KB	R25 (REVERB)
4	038655000	CONTROL 50KB W/CD	R30-33 (EQUALIZER)
1	038716000	CONTROL 2K B SNAP IN	R58 (MASTER)
2	037323000	CONTROL SNAPIN 50K 15A	R7,15 (VOLUME)
9	00626001	DIODE 1N4448 75PRV SIGNAL LL	CR1,6,9,12-17
2	064089001	DIODE 1N4003	CR10,11
4	029045000	DIODE 6A 400V 6A4 LEAD FORMED	CR18-21
4	028776000	DIODE BIAS BYV26D LEAD FORMED	CR2-5
2	027329001	DIODE ZEN 1N5228B 3.9V 5% LL	CR7,8
2	028119000	DIODE ZEN 1N5353B 16V 5W 5%	CR22,23
13	025802000	FSTN TAB MALE .250X.032 PCB MT	CP1-4,6-9,11-15
2	026000001	FSTN TAB MALE PCB MT .187X.032	CP5,10
2	025996000	FUSE CLIP PCB .250 & 5MM FUSE	XF1
1	048827000	FUSE QA 1-1/4X1/4 250V 2A	F1 (100/120V ONLY)
1	020789	FUSE QA 20mmX5mm 250V 1AMP	V1 (EXPORT 220/230/240V ONLY)
1	027404000	IC CA3080AE OTA	U9
8	016795000	IC DUAL OP AMP TL072	U1-8
1	028047000	IC OP AMP MC1436/SG1436Y	U10
2	040903	INSULATOR MICA TO-218	@Q5,6
5	031570000	JACK PHONE PCB STEREO PREMIUM	J1,2,4,5,6
1	025933000	JACK PHONO DUAL PC MTG	J3 (TAPE IN)
2	048466	JACK RCA SINGLE PCB MOUNT	J7,8 (REVERB PAN CONNECT)
22	020888001	JUMPER WIRE 22GA	
1	028039000	LED RED 5X5MM SBL-55VR3	LD1
1	049248003	PCB ASSY KXR 60	STUFFED
5	024937001	RES CF 1/4W 5% 110 Ω LL	R17,18,20,49,50
2	024952001	RES CF 1/4W 5% 100Ω LL	R24,61
1	0296060001	RES CF 1/4W 5% 510 Ω LL	R48
8	024965001	RES CF 1/4W 5% 1K LL	R23,42,46,62,65,72,73,78
4	024971001	RES CF 1/4W 5% 2.2 K LL	R19,56,57,84
3	024972001	RES CF 1/4W 5% 2.7K LL	R35,37,39
1	029610001	RES CF 1/4W 5% 3K LL	R40
4	024973001	RES CF 1/4W 5% 3.3K LL	R6,8,14,16
2	024977001	RES CF 1/4W 5% 4.7K LL	R89,90
1	024979001	RES CF 1/4W 5% 6.8K LL	R92
2	025942001	RES CF 1/4W 5% 7.5K LL	R71,74
11	024981001	RES CF 1/4W 5% 10K LL	R43,44,45,60,79,81,82,85-88
2	024986001	RES CF 1/4W 5% 18K LL	R29,41
12	031818001	RES MF 1/4W 1% 18.2K LL	R1,2,3,5,9,10,11,13,51-54
2	024987001	RES CF 1/4W 5% 22K LL	R27,55
3	024989001	RES CF 1/4W 5% 33K LL	R59,80,83
5	024993001	RES CF 1/4W 5% 47K LL	R21,22,28,66
1	024994001	RES CF 1/4W 5% 56K LL	R77
7	024997001	RES CF 1/4W 5% 100K LL	R4,12,26,34,36,38,47
1	024998001	RES CF 1/4W 5% 120K LL	R91
2	025069001	RES CF 1/4W 5% 1M LL	R63,64

KXR 60

PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	028861001	RES CF 1/2W 5% 3.3K LL	R103
3	028045001	RES FILM 1W 5% 220 Ω LL	R93,94,104
2	028030001	RES FILM 1W 5% 680Ω LL	R67,70
4	029722001	RES FILM 1W 5% 1K LL	R95-98
2	028029001	RES FILM 1W 5% 1.5K LL	R68,69
2	028028000	RES WW BT 5W 10% .47Ω	R76,76
1	048467	RES WW BT 5W 10% 39Ω	R100
2	029047000	RES WW BT 7W 10% 270Ω	R101,102
1	048468	RES WW BT 10W 10% 47Ω	R99
2	027638000	SCREW TF 4-40X3/8 HWHS ZI .1" HD	@Q5,6
2	038900000	SCREW TF 6-32X1/4 PHP ZI	PCB TO HEATSINK MOUNT
2	028169000	WSHR SHLDR NYL 5/32/1/4	@Q5,6
1	014689003	XSTR N-CH JFET J111 TO-92	Q7
1	028114000	XSTR NPN TIP 142 TO-218AC	Q5
1	014408003	XSTR PNP DARLNGTON MPA 63 TO 92	Q8
1	028115000	XSTR PNP TIP 147 TO-218AC	Q6

CHASSIS ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	007565	BUSHING SR .625X.125X37/64 BLK	@ POWER CABLE 100/120V ONLY
1	010401	BUSHING SR .625X.125X37/64 WHT	@PWR CABLE 230/240V ONLY
1	026527	CABLE ASSY PWR 120V .187 TABS	100/120V ONLY
1	026528	CABLE ASSY PWR 230V .187 TABS	230V ONLY
1	036479	CABLE ASSY PWR AUST .187 TABS	240V AUSTRALIA ONLY
1	040992	CABLE ASSY PWR 5A UK .187 TABS	240V UNITED KINGDOM ONLY
1	028560	END BELL XFMR 85W	TRANSFORMER MOUNT
1	049977	HEATSINK BAR KXR 60	COUPLER TO CHASSIS
8	048357	KNOB CUSTOM BLK/OFF WHT 180°	
4	028591	NUT ACORN 8-32	TRANSFORMER MOUNT
5	031647	NUT HEX 12MMX1MM NI	@PHONE JACKS
1	0492520	PANEL FRONT KXR 60	
1	049253	PANEL REAR KXR 60	
1	041595	SCREW 6-32X3/16 PHP STL ZI SEMS	
6	017433	SCREW M 6-32X3/8 PHP BLX	PCB MOUNT
1	031868	SCREW PLASTITE 4X1/4 PHP BLX	@RCA JACKS
3	037988	SCREW TF 8-32X1: HWH BLX	
1	025935	SWITCH DPST .187 TAB (DOM)	POWER SWITCH
4	030007	WSHR LCK INTL 8X.330X.02 ZI	TRANSFORMER MOUNT
1	027668	XFMR PWR 120V 85W	120V ONLY
1	039357	XFMR PWR EXP DELUXE 112	100V/115V/230V

CABINET ASSEMBLY

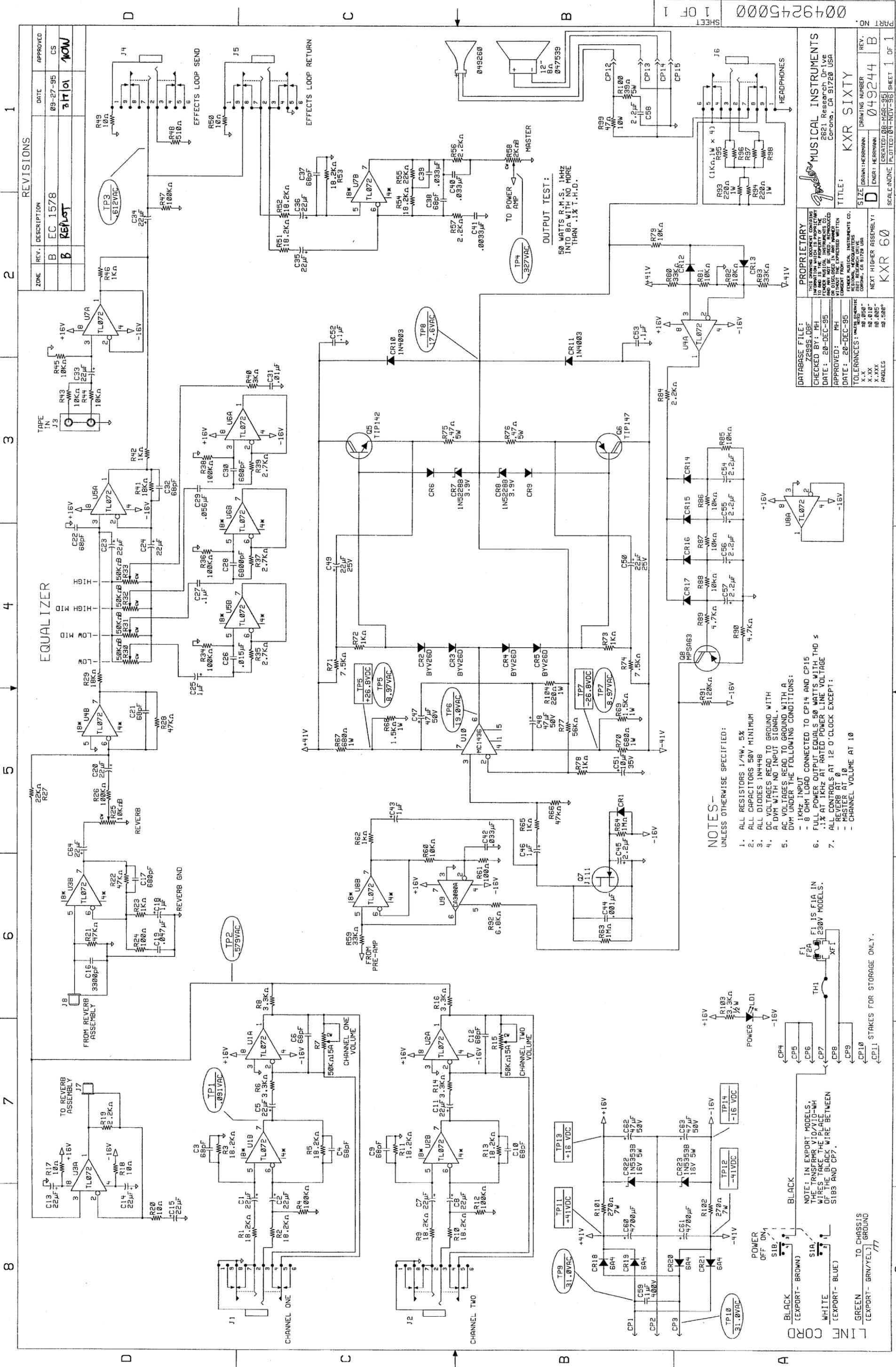
QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	049251	CAB ASSY KXR 60	COMPLETE CABINET
1	025722	CABLE REVERB 1100MM	REVERB CABLE
1	022491	CLAMP CABLE NYL SCRW MNT 5/16	
.377	026317	CLOTH GRILLE BLACK PVC	
6	031867	CORNER 2 HOLE W/ NOTCH BLK PWDRD	
2	031840	CORNER 3 HOLE BLK PWDRD	
4	029821	EYELET RFLNGD .150D X.315 L	REVERB PAN MOUNT
4	027849	GLIDE CAB 1.24X335 BLX WAX	STEEL ONLY , NO INSERT
1	049251010	GRILLE ASSY KXR 60	COMPLETE GRILLE
1	027846	HANDLE 9.25" NO LOGO	RUBBER ONLY, NO INSERT
2	031845	HANDLE CAP 2 HOLE BLK PWDRD	
1	049260	HORN CERAMIC PIEZO KXR 60	
4	019275	INSERT GLIDE CUSHION 1.27 DIA	RUBBER ONLY
1	032524	INSERT HANDLE	SPRING STEEL
1	029906	NAMEPLATE FENDER GENERIC SMALL	LOGO
4	021972	NUT T 10-32X3/4 STR 3 PRNG BLX	SPEAKER MOUNT

KXR 60
CABINET ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	028055	REVERB UNIT 800 Ω 8EB2C1B DN	REVERB PAN
4	017441	SCREW M 10-32X1-1/2 OHP STL BLX	SPEAKER MOUNT
4	036199	SCREW M 8-32X1-1/16 OHP BLX CP	CHASSIS MOUNT
5	029828	SCREW PB 8X3/4 PHP ZI	REVERB PAN MOUNT
4	9904101110	SCREW PB 8X5/8 THP BLACK	
2	018113	SCREW SMA 4X1/2 OHP BLX	LOGO MOUNT
14	026576	SCREW SMA 8X5/8 THP BLACK	CORNER MOUNT
4	017942	SCREW WOOD 8X1 FHP BLX	GLIDE MOUNT
4	026577	SCRW M 10-32X1 PHP BLX	
1	047539	SPEAKER 12" 8 Ω 75W BXR 60	
REF	026570	TOLEX BLACK LT WEIGHT	
4	029527	WSHR FNSH 8-5/8 FLNGD BLX WX	CHASSIS MOUNT

MISCELLANEOUS

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	049254	MANUAL OWNERS KXR 60	
1	049245	SCHEM REDUCED KXR 60	



ZONE	REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578		09-27-95	CS
B	REPLAT		11/01	MOW

PROPRIETARY
THIS DRAWING DOCUMENT CONTAINS
INFORMATION THAT IS THE PROPERTY OF
SPENCER MUSICAL INSTRUMENTS CO.
AND IS NOT TO BE REPRODUCED,
COPIED, OR DISCLOSED IN ANY MANNER
WITHOUT THE EXPRESS WRITTEN
CONSENT FROM:
SPENCER MUSICAL INSTRUMENTS CO.
2621 Research Dr. I-ve
Corona, CA 91720 USA

DATABASE FILE:
Z9395.DBF
CHECKED BY: MH
DATE: 20-DEC-95
APPROVED: MH
DATE: 20-DEC-95
TOLERANCES: UNLESS OTHERWISE
SPECIFIED:
X.X 50.010"
X.XX 50.005"
X.XXX 50.0005"
ANGLES 50.5000"

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

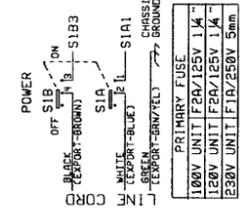
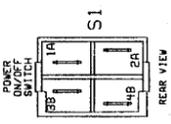
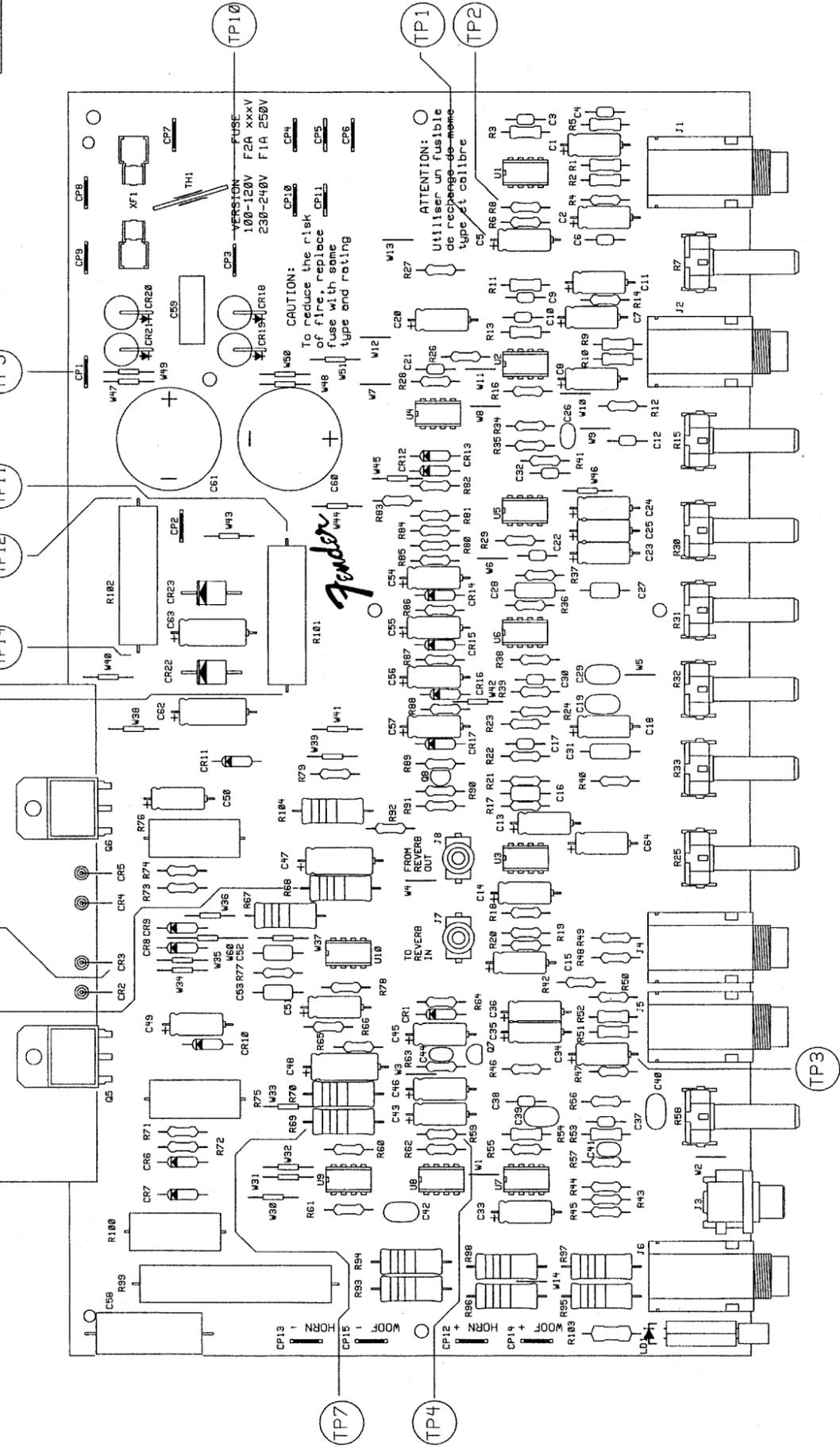
REV.	DESCRIPTION	DATE	APPROVED
B	EC 1578	09-27-95	CS
B	REPLAT	11/01	MOW

REVISIONS

REV.

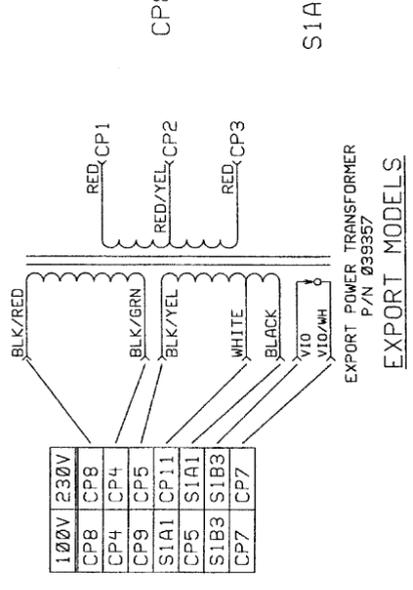
8 7 6 5 4 3 2 1

REVISIONS			
ZONE	REV. DESCRIPTION	DATE	APPROVED
	A RELEASED, PR299	4-22-96	
	B EC 1565	8-14-96	EJH



FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z299P.DBF DATE: 04-NOV-96
 LAYERS PLOTTED: 1 2 3 4 10 18

P/N 027668
 DOMESTIC
 TRANSFORMER



NOTE: IN EXPORT UNITS, THE TRANSFORMER VIO/VIO-WH IS USED IN PLACE OF THE BLACK WIRE BETWEEN S1B3 AND CP9.

DATABASE FILE: Z299P.DBF CHECKED BY: EJH DATE: 3/19/96		PROPRIETARY THIS DRAWING DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO FENDER MUSICAL INSTRUMENTS CO. AND IS NOT TO BE REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN PERMISSION OF FENDER MUSICAL INSTRUMENTS CO.	
APPROVED: EJH DATE: 14-AUG-95		TITLE: KXR SIXTY SERVICE DRAWING	
TOLERANCES: UNLESS OTHERWISE SPECIFIED X.XX .0050" X.XXX .0005" ANGLES 30, 50, 60°		SIZE: D DRAWN: HERRMANN CHECKED: HERRMANN	
NEXT HIGHER ASSEMBLY: KXR 60		DRAWING NUMBER: 049246 REV. B	
CREATED: 09-MAR-95 PLOTTED: 04-NOV-96		SCALE: 1 OF 1	

8 7 6 5 4 3 2 1