

SR-6520 / SR-8520 / P / PD

POWERED MIXERS w/ DIGITAL EFFECTS

SR-6520P p/n 071-6521-100 (120V)
 SR-8520P p/n 071-8521-100 (120V)
 SR-6520PD p/n 071-6521-200 (120V)
 SR-8520PD p/n 071-8521-200 (120V)

SERVICE MANUAL

SR-6520P/PD SR-8520P/PD
 (These are the model names for warranty claims)

MARCH 1998

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

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

SPECIFICATIONS

CIRCUIT DESCRIPTION

Type:	PR 189
POWER AMPLIFIER SECTION:	
Power output:	520 Watts R.M.S. @ 2 Ohms 350 Watts R.M.S. @ 4 Ohms
Distortion at 520 watts:	Less than .2% @ 1 kHz into 2 Ohms
Minimum load impedance:	2 Ohms
Sensitivity:	1.28V R.M.S.
Input impedance:	22K ohm
DELTA COMP range:	20 dB
PREAMP SECTION:	
Input impedance:	LOW-Z 1.82k HI-Z 18.2k
Hi-Z Input Sensitivity for 520 watts:	55 mV (MAIN MASTER and CHANNEL Main at maximum, all tone controls and GEQ at "0" detent).
Channel tone controls:	LOW +/- 15 dB at 100 Hz MID +/- 15 dB at 750 Hz HIGH +/- 15 dB at 10 kHz
Graphic equalizer:	+/- 12 dB at 63, 125, 250, 500, 1k, 2k, 4k, 8k, and 16kHz.

Dimensions:

	SR 6520PD	SR 8520PD
Height:	10-7/16 inches (26.5 cm)	10-7/16 inches (26.5 cm)
Width:	23-5/8 inches (60.0 cm)	27-5/8 inches (70.2 cm)
Depth:	12 inches (30.5 cm)	12 inches (30.5 cm)
Weight:	40.0 lbs. (18.2 kg)	42 lbs. (19.1 kg)

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 Q29. Comparator U1A senses the voltage from the Collectors of Q27 & Q28. When the power amplifier approaches clipping on a positive swing, the collector of Q9 pulls up R50, which turns on Q28, transferring -15vdc to the collector, pulling down R52. 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 R52 also feeds through P1A to P1B on the preamp PCB. The voltage is routed to the DELTACOMP™ switch (S1), 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 CR34 - CR37, and charges Capacitors C26-C29 all at once in parallel as a one pole filter through a single time constant of R52 X (C26+27+28+29) or 3.9K X 8.8µF = 34.3ms. As they charge, Q29 turns on and provides current to pin 5 of the OTA (U2). The 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 CR34 - CR37, Capacitors C26-C29 are forced to discharge as a 4-pole filter with different time constants through R58. R62 prevents Parasitic oscillation while Zener CR38 provides 2 slopes which results in smoother limiting.

When the power amplifier approaches clipping on a negative swing, R46 is pulled low, turning on Q26 which pulls up the Base of Q27 transferring -15 vdc to the collector.

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 C3 charges through Resistor R4. The negative Gate voltage pinches off the JFET, removing the ground from the input of the amplifier. When the power is switched off, C3 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 leg of the Diff amp. If the same amount of current flows through each leg of the Diff amp, the voltage drop across resistors R12 & R13 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. R15 (27K) is the feedback resistor and R14 (1K) is the pull-down resistor. $R_{fb} + R_{pd} \div R_{pd} = A_v$. Therefore $27K + 1K \div 1K = 28K \div 1K = 28 A_v$.

CIRCUIT DESCRIPTION Cont.

PARTS LIST

Q7 & Q11 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 R21 & R22 must be the same.

Adjustable bias is provided by Q8 & it's associated components. 1.2volts is provided to the Base of Driver Transistors Q14 & Q15, and -1.2 volts is provided to the base of the Driver Transistors. This provides + or - 0.6 volts to the bases of the output transistors (Q18-Q25) in parallel, biasing them on.

Transistors Q12, Q13, 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 conditions occur, the voltage drop across the Emitter Resistors (.33Ω 5 Watt) will dramatically increase. On the positive side of the amplifier, C11 charges through R25 & R27. On the negative side C12 charges through R31 & R32. This will cause Q12 & Q13 to turn on. This limits the amount of signal which is available to the Base of the Driver Transistors (Q14 - Q17).

DIFFERENCES IN VERSIONS: In all versions (SR6520/8520, SR6520P/8520P, & SR6520PD/8520PD) the power amp remained unchanged; normal schematic revisions were not related to version changes. The "P" version added Phantom power, which caused the preamp PCB assy to change by adding traces to carry phantom power to the XLR microphone connectors, and added a +15V regulator circuit to the preamp PCB assy in order to provide the phantom power. The "PD" version added digital effects (PCB assy 041875) and a ribbon cable to connect the PCB's together (P2 to P3), along with some obvious cosmetic changes

WARRANTY PHILOSOPHY ON DIGITAL REVERB MODULE: Replacement, rather than repair of the 041092 module is the recommended warranty procedure for failures of the module.

NOTE: SHADED ITEMS ARE FOR REFERENCE ONLY

NOTICE:
Reference designators 100-199 refer to and are listed only for channel 1. Channel 2 designators are 200-299 etc. Part quantities are listed only for the SR-6520PD (6 channel version).

PREAMP PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	037832	PCB. ASSY PREAMP SR6520P	(STUFFED)
1	037875	PCB. ASSY PREAMP SR8520P	(STUFFED)
1	049148	PCB ASSY PREAMP SR6520PD	(STUFFED)
1	049271	PCB ASSY PREAMP SR8520PD	(STUFFED)
1	028577	CABLE ASSY REVERB 30"	(SR6520/8520/P)
1	038534	CABLE, JUMPER 3CKT RIBBON	P2 TO P3 (SR6520/8520/P TAPE IN)
1	048914	CABLE, RIBBON 8CKT RIBBON	@ P1 (SR6520/8520PD)
1	028485	CAP AE RDL 16V 470uF 20%	C11
1	028492	CAP AE RDL 16V 1000uF 20%	C10
21	028465	CAP AE RDL 25V 22uF 20%	C14,16,25,103,104,111
1	028474	CAP AE RDL 25V 100uF 20%	C7
1	033605	CAP AE RDL 50V .15uF 20%	C29
1	037943	CAP AE RDL 50V .33uF 10%	C37
1	033606	CAP AE RDL 50V .47uF 20%	C27
17	028459	CAP AE RDL 50V 2.2uF 20%	C3,12,18-20,105,106
13	028460	CAP AE RDL 50V 4.7uF 20%	C5,114,115
20	020909	CAP CD 1KV 47pF 10%	C4,6,13,15,21-24,112,113
12	069724	CAP CD 1KV 100pF 10%	C101,102
12	025984	CAP CD 1KV 180pF 10%	C107,108
1	007029	CAP CD 1KV 220pF 10%	C34
6	025986	CAP CD 1KV 390pF 10%	C110
1	025777	CAP CD 1KV 470pF 10%	C42
1	020842	CAP CD 1KV 500pF 10%	C9
1	033588	CAP PF RDL 100V .01uF 10%	C36
2	033578	CAP PF RDL 100V .001uF 10%	C32,40
1	036234	CAP PF RDL 100V .015uF 10%	C41
1	033590	CAP PF RDL 100V .022uF 10%	C26
1	033591	CAP PF RDL 100V .033uF 10%	C31
16	033596	CAP PF RDL 100V .068uF 10%	C1,2,8,39,116,117
1	033579	CAP PF RDL 100V .0015uF 10%	C30
1	033580	CAP PF RDL 100V .0022uF 10%	C35
2	033581	CAP PF RDL 100V .0033uF 10%	C17,38

PARTS LIST

PREAMP PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	033582	CAP PF RDL 100V .0039uF 10%	C28
1	033583	CAP PF RDL 100V .0047uF 10%	C43
7	033586	CAP PF RDL 100V .0068uF 10%	C33,109
1	064089	DIODE 1N4003	CR2
1	006260	DIODE 1N4448 SIGNAL BENT	CR1
1	027416	HEADER 8 PIN	P1
21	016795	IC DUAL OP-AMP TLO72C	U1-9,101,102
7	030771	JACK 1/4" PCB 2COND SCC	J1,3-8
6	030987	JACK 1/4" PCB 3COND DOC	J102
1	025933	JACK PHONO DUAL PC MOUNT	J2 (RCA) (SR6520/8520/P)
1	049295	JACK RCA QUAD VERT PC MOUNT	J2A,B (SR6520/8520 PD)
6	037248	JACK XLR FEMALE PC MOUNT	J101
1	028098	LED 5X5mm GREEN SLB-55MG3	LD3
1	028039	LED 5X5mm RED SLB-55VR3	LD1
1	028097	LED 5X5mm YELLOW SLB-55YY3	LD2
1	031879	POT RTRY 50K 30A TAPER	R6
23	031266	POT RTRY 50K B TAPER	R8,19,22,29,30,117,120,122
18	033002	POT RTRY 50KB TAPER CNTR DT	R110-112
9	031267	POT SLIDE 50KB 45mm CNTR DT	R33-37,40-43 (SR6520/8520/P)
9	040534	CONTROL SL 60MM CSE 50K PANASONIC	R33-37, 40-43 (SR6520/8520PD)
1	024942	RES CF 1/4W 22ohm 5%	R2
1	024947	RES CF 1/4W 47ohm 5%	R14
6	024965	RES CF 1/4W 1K 5%	R11,15,21,24,28,46
2	024969	RES CF 1/4W 1.5K 5%	R1,10
34	024971	RES CF 1/4W 2.2K 5%	R25,48,50,52,54,56,58,60,62,64, R109,115,116,119
2	024980	RES CF 1/4W 8.2K 5%	R39,44
7	024981	RES CF 1/4W 10K 5%	R3-5,12,13,32,38
1	024985	RES CF 1/4W 15K 5%	R27
1	024987	RES CF 1/4W 22K 5%	R31
23	024993	RES CF 1/4W 47K 5%	R7,16-18,26,118,121,123
2	029613	RES CF 1/4W 91K 5%	R55,63
10	024997	RES CF 1/4W 100K 5%	R9,20,23,45,113
1	028549	RES CF 1/4W 110K 5%	R53
6	024999	RES CF 1/4W 150K 5%	R114
1	025058	RES CF 1/4W 180K 5%	R61
2	025059	RES CF 1/4W 220K 5%	R51,59

PARTS LIST

PREAMP PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	029450	RES CF 1/4W 240K 5%	R47,57
1	025061	RES CF 1/4W 330K 5%	R49
24	031819	RES MF 1/4W 1.82K 1%	R101-104
24	031818	RES MF 1/4W 18.2K 1%	R105-108
3	036375	SPACER RND NYL .147X.250X.720	(AT LD1-3)
5	033574	STANDOFF SWEDGE 4-40X.937	
2	029904	SWITCH PUSHBUTTON PC MOUNT	S1,2
1	027113	TERMINATION RING #6 18-14GA	(CRIMPED ON GND WIRE)
.5ft	027182	WIRE 18GA BONDED BLACK	(GND TO FOIL SHIELD)
1	016739	XSTR NPN 2N4401 TO-92	Q1

FRONT PANEL PREAMP ASSEMBLY

42	9904814100	BUSHING SNAP-IN	(POT SHAFT)
1	033326	CABLE RIBBON 8 CIRCUIT	(INTERCONNECT) (SR6520/8520/P)
9	028939	KNOB,GRAPHIC EQUALIZER	(SR6520/8520/P)
9	041109	KNOB EQ BXR SERIES	(SR6520/8520PD)
2	028841	KNOB PUSHBUTTON	
18	028797	KNOB RTRY DARK BLUE	(LOW/MID/HIGH)
7	028800	KNOB RTRY LIGHT GRAY	(LEVEL)
2	038511	KNOB RTRY SALMON 177C	(MAIN REV,MON REV)
7	038513	KNOB RTRY RED 192C	(MONITOR)
7	038514	KNOB RTRY PURPLE 265C	(EFF/REV/SEND)
1	038515	KNOB RTRY GREEN BASIC	(AUXILIARY)
18	041835	KNOB CTL DBL GRY/BLUE	(LOW/MID/HIGH) SR6520P/8520P/PD
7	041833	KNOB CTL DBL GRY/WHT	(LEVEL) SR6520P/8520P/PD
9	041836	KNOB CTL DBL GRY/BLK	(MAIN REV, MON REV, MONITOR) SR6520P/8520P/PD
7	041834	KNOB CTL DBL GRY/GREEN	(EFF/REV/SEND) SR6520P/8520P/PD
1	041837	KNOB CTL DBL GRY/DK GRY	(AUXILIARY) SR6520P/8520P/PD
13	038537	NUT JAM 3/8-32 BLK NYLON	(1/4" INPUT JACKS)
1	049153	PANEL FRONT SR6520PD	037786 = SR6520P
1	049154	PANEL FRONT SR8520PD	037826 = SR8520P
5	014172	SCREW M 4-40X1/4 PHP BLX	(PCB TO PANEL MTG)
13	037990	SCREW PLASTITE 6X3/8 PHP BLX	(XLR/RCA JACKS)
13	038538	WASHER FW 3/8X5/8X3/32 BLK NYLON	(1/4" JACKS)

PARTS LIST

POWER AMP PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	033310	PCB ASSY POWER AMP	(120V)
1	033311	PCB ASSY POWER AMP	(220V/240V)
1	033312	PCB ASSY POWER AMP	(100V)
1	032927	PCB SR6520P/SR8520P PWR AMP	(BLANK BOARD)
8	028459	CAP AE RDL 50V 2.2uF 20%	C1,2,5,24,26-29
2	028460	CAP AE RDL 50V 4.7uF 20%	C3,10
2	028471	CAP AE RDL 50V 47uF 20%	C22,23
3	025787	CAP AE RDL 16V 100uF 20%	C6,11,12 (NON POLAR)
2	028494	CAP AE RDL 35V 1000uF 20%	C16,17
2	025786	CAP AE RDL 80V 6800uF 20%	C14,15
1	025970	CAP CD 1KV 5pF 10%	C7
2	025982	CAP CD 1KV 68pF 10%	C8,9
1	069724	CAP CD 1KV 100pF 10%	C30
1	024854	CAP MPF 400V .1uF 10%	C13
5	027278	CAP MPF 63V .1uF 10%	C18-21,25
1	027257	CAP MPF 100V .0022uF 10%	C4
6	064089	DIODE 1N4003	CR22-25,28,29
24	006260	DIODE 1N4448 SIGNAL BENT	CR1,3-13,16,17,26,27,30-37
2	020534	DIODE 1N5402 RECTIFIER 200V	CR20,21
4	025821	DIODE HV FDH400 SWITCHING	CR14,15,18,19
1	031019	DIODE ZENER 1N5245B .5W 15V	CR2
1	027329	DIODE ZENER 1N5228B 3.9V	CR38
2	025996	FUSE CLIP PCB .250 & 5mm	XF1 (100V/120V)
4	020775	FUSE CLIP PCB 5mm	XF2,3 (220V/240V)
1	028330	FUSE QA 1-1/4X1/4 250V 10AMP	F1 (100V/120V)
1	020798	FUSE QA 5mm 250V 5AMP	F1 (220V/240V)
2	020789	FUSE QA 5mm 250V 1AMP	F2,3 (220V/240V ONLY)
1	027416	HEADER .1 CTR 8 CKT SQ PIN	P1
1	031269	HEATSINK SR SERIES	(MAIN HEATSINK)
2	025796	HEATSINK TO-220	U3,4
1	027404	IC 3080EA OTA	U2
1	016795	IC DUAL OP AMP TLO72C	U1
1	027387	INDUCTOR AIR CORE RDL 2.5uH	L1

PARTS LIST

POWER AMP PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	017974	MICA PAD TO-220	Q14-17
8	074211	MICA PAD TO-3 PRE-GREASED	Q18-25
1	69904200200	NUT PEM 6-32	AT Q18-25
1	025674	POT TRIM LINEAR 30% 1.5K	R20 (Bias adjust)
1	013562	REGULATOR +15V MC7815CT	U3
1	013564	REGULATOR -15V MC7915	U4
1	024952	RES CF 1/4W 100ohm 5%	R67
2	024956	RES CF 1/4W 220ohm 5%	R21,22
2	024961	RES CF 1/4W 470ohm 5%	R27,31
1	024963	RES CF 1/4W 680ohm 5%	R57
7	024965	RES CF 1/4W 1K 5%	R3,6,14,25,32,54,64
1	024967	RES CF 1/4W 1.2K 5%	R19
4	024971	RES CF 1/4W 2.2K 5%	R12,13,16,17
2	024975	RES CF 1/4W 3.9K 5%	R18,52
1	024977	RES CF 1/4W 4.7K 5%	R62
1	025942	RES CF 1/4W 7.5K 5%	R10
6	024981	RES CF 1/4W 10K 5%	R47,49,51,63,66,68
1	024985	RES CF 1/4W 15K 5%	R55
2	024987	RES CF 1/4W 22K 5%	R1,61
4	024988	RES CF 1/4W 27K 5%	R7,15,28,29
2	024989	RES CF 1/4W 33K 5%	R2,60
1	024993	RES CF 1/4W 47K 5%	R59
5	024997	RES CF 1/4W 100K 5%	R46,48,50,53,56
1	024998	RES CF 1/4W 120K 5%	R65
1	024999	RES CF 1/4W 150K 5%	R58
2	025069	RES CF 1/4W 1M 5%	R4,5
4	033205	RES MF 1/4W 15ohm 5%	R23,24,33,34 (fused)
4	036960	RES MF 1/4W 47ohm 5%	R8,9,26,30 (fused)
1	031900	RES CF 1/2W 15K 5%	R11
1	027627	RES FILM 1W 10ohm 5%	R45
2	027628	RES FILM 2W 47ohm 5%	R43,44
8	032958	RES WW 5W .33ohm 10%	R35-42
1	032905	RES WW 10W 400ohm 5%	R69
2	027638	SCREW TF 4-40X3/8" HWH ZI	(AT U3,4)

PARTS LIST

POWER AMP PRINTED CIRCUIT BOARD ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
4	014171	SCREW M 4-40X3/8" PHP BLX	(AT Q8,14-17)
14	033051	SCREW M 6-32X1/2" PHPS ZI	(AT Q18,20-23,25) (AND STANDOFFS)
4	037568	SCREW M 6-32X3/4" PHP ZI	(AT Q19,24)
16	025805	SLEEVE INSULATING 3/16"	(AT Q18-25)
4	036235	SPACER AL #6X1/4X1/4"	(AT Q19,24)
2	025804	STANDOFF 6-32X1/2 RND AL	(HEATSINK MOUNT)
1	029779	SWITCH THERMAL NC (OPEN 248°F)	TS1 (CIRCUIT BREAKER)
1	032906	SWITCH THERMAL NO(CLOSE 194°F)	TS2 (FAN HI/LO SPEED)
20	025802	TAB MALE .250X.032 PCB MT	CP1-25
1	026411	THERMISTOR 2.5 ohm 8 AMP	TH1
4	022376	WASHER FLAT 6X3/8 NI	(AT Q19,24)
4	017746	WASHER SHOULDER NYL 1/8X1/4	(AT Q14-17)
1	014689	XSTR N-CH JFET J111 TO-92	Q1
1	025748	XSTR NPN 2SC1567 TO-126	Q8
3	016739	XSTR NPN 2N4401 TO-92	Q12,27,28
4	025751	XSTR NPN 2SC2362K TO-92	Q2,3,4,10
4	025744	XSTR NPN MJ15022 TO-3	Q18,20,22,24
1	014408	XSTR NPN MPSA63 TO-92	Q29
1	014867	XSTR NPN MPSU10 TO-202	Q11
2	027745	XSTR NPN NEC 2SC2336B TO-220	Q14,15
2	016742	XSTR PNP 2N4403 TO-92	Q13,36
3	025752	XSTR PNP 2SA1016K TO-92	Q5,6,9
4	025745	XSTR PNP MJ15023 TO-3	Q19,21,23,25
1	014866	XSTR PNP MPSU60 TO-202	Q7
2	027744	XSTR PNP NEC 2SA1006B TO-220	Q16,17

REAR PANEL POWER AMP ASSEMBLY

1	037883	POWER AMP ASSY 120V	(DOMESTIC)
1	026038	BUSHING SR .625X.062X37/64 BLX	(100/120V PWR CORD)
1	010401	BUSHING SR .625X.125X37/64 WHT	(220/240V PWR CORD)
1	026541	CABLE ASSY POWER CORD	(100V/120V)
1	033331	CABLE ASSY POWER CORD	(220V/240V)
1	012473	FAN 115V 4-1/8"	
1	033576	GASKET FAN 4.9X4.9	
2	032900	JACK PHONE 1/4" HI CURRENT	(SPEAKER OUTPUT)

PARTS LIST

REAR PANEL POWER AMP ASSEMBLY (CONT)

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	016352	NUT HEX 3/8-32X3/32 TK NI	(SPEAKER OUTPUT JACK)
6	069393	NUT HEX 6-32 EXT LOCK	(FAN,RECTIFIER,GND)
1	049155	PANEL REAR POWER AMP SR6520PD	037998 = SR6520P
1	049156	PANEL REAR POWER AMP SR8520PD	037999 = SR8520P
1	032925	RECTIFIER BRIDGE DIODE	
11	031184	SCREW M 6-32X1/4" PHPS BLX	
5	015627	SCREW TF 6-32X3/4" PHP BLX	(FAN/RECTIFIER MNT)
4	025804	STANDOFF 6-32X1/2" RND AL	
1	026479	SWITCH ROCKER DPST	(POWER SWITCH)
2	031153	WASHER FLAT 3/8X.614 NI	(SPEAKER JACK)
2	9904300100	WASHER LCK INTL 3/8X.681X.032 ZI	(SPEAKER JACK)
2	026401	WASHER SHLDR FIBER 3/8X5/8	(OUTPUT JACKS)

CABINET ASSEMBLY

1	049150	CABINET ASSY SR6520PD	(COMPLETE CABINET)
1	049151	CABINET ASSY SR8520PD	(COMPLETE CABINET)
1	040951	CABINET ASSY SR6520P	(COMPLETE CABINET)
1	040952	CABINET ASSY SR8520P	(COMPLETE CABINET)
8	031867	CORNER 2 HOLE W/NOTCH BLK PWDRD	
4	027849	GLIDE CAB 1.24X.335 BLX	(STEEL 18GA)
4	019275	GLIDE CUSHION INSERT	(RUBBER)
1	027846	HANDLE 9.25" NO LOGO	(RUBBER)
2	031845	HANDLE CAP 2-3/16" BLK PWDRD	
1	032524	HANDLE INSERT	(SPRING STEEL)
4	021972	NUT T 10-32X3/4 STR 3 PRNG BLX	(HANDLE MOUNTING)
4	017393	SCREW M 10-32X1-1/8 OHP BLX	(HANDLE MOUNTING)
12	026576	SCREW SMA 8X5/8" TH BLACK	(CORNER MOUNTING)
4	026625	SCREW WOOD 8X1" FH	(GLIDE MOUNTING)

PARTS LIST

PARTS LIST

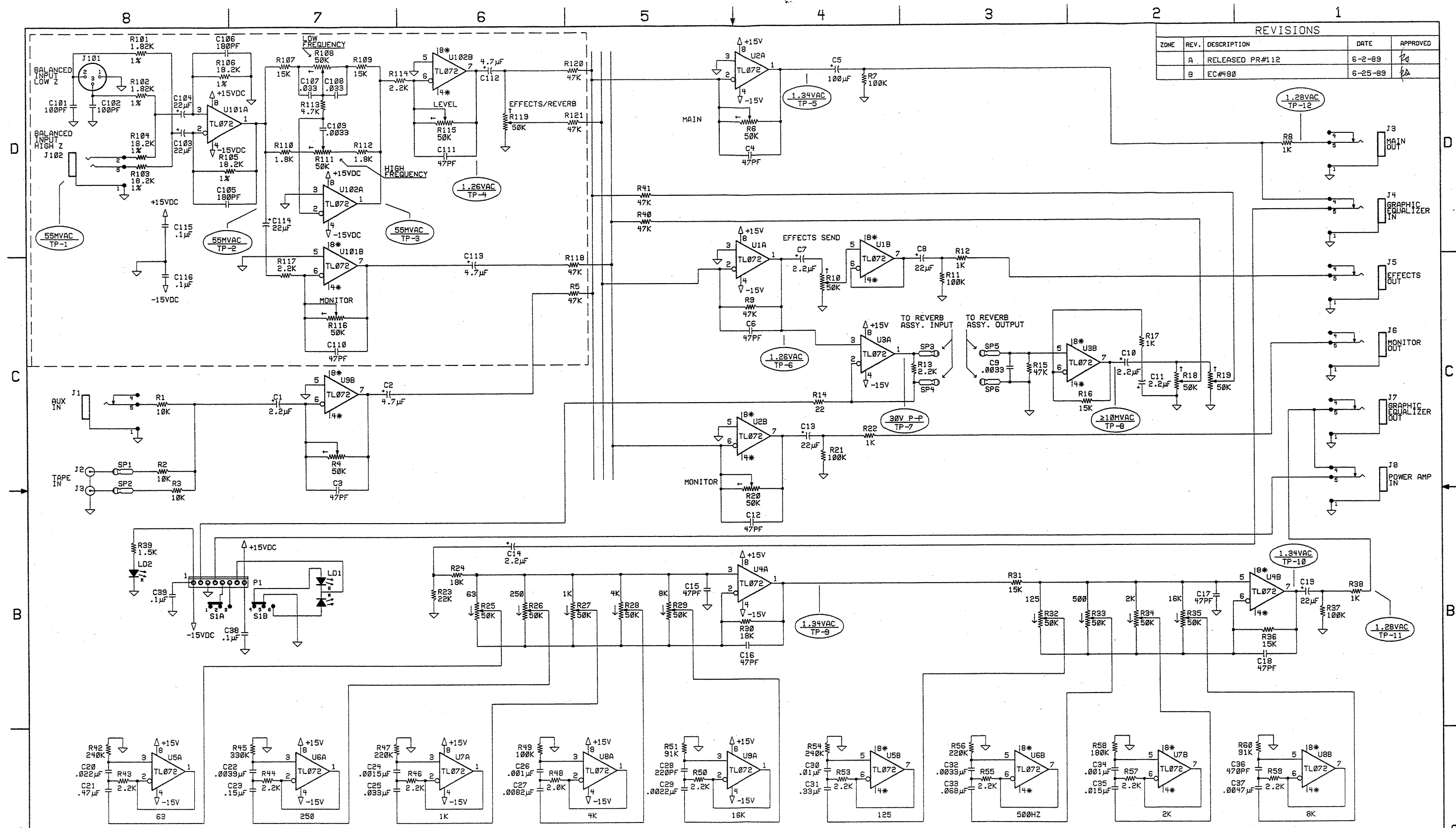
MISCELLANEOUS

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	031882	CLIP W/ADHESIVE	(RIBBON CABLE MOUNT)
4	029821	EYELET RFLNGD .215 OD X.315 L	(REVERB PAN MOUNTING)
4	026201	GROMMET RUBBER	(REVERB PAN MOUNTING)
1	069393	NUT 6-32 HEX EXT LOCK	(XFORMER GND WIRE)
1	038531	OWNER'S MANUAL SR6520P/8520P	
1	033542	REVERB UNIT 4 SPRING 4BB3S1D	(PAN) (SR6520/8520/P)
1	041875	DIGITAL REVERB CONTROL PCB ASSY	(SR6520PD/8520PD)
1	041092	DIGITAL REVERB PCB	(SR6520PD/8520PD)
1	031184	SCREW M 6-32X1/4" PHPS BLX	(XFORMER GND WIRE)
4	029828	SCREW PB 8X3/4" PHP ZI	(REVERB PAN MOUNTING)
11	9904101110	SCREW PB 8X5/8" PHP	(FRONT/REAR PANEL MT)
1	017439	SCREW SMA 6X1/2" PHP BLX	
4	036496	SCREW TF 10-32X1-1/2" PHP BLX	(TRANSFORMER MOUNT)
1	031707	TRANSFORMER POWER	(DOMESTIC 120V)
1	033210	TRANSFORMER POWER	(100V/220V/240V)
4	9904300900	WASHER FLAT 1/4X1" STEEL BLX	(TRANSFORMER MOUNT)

DIGITAL REVERB CONTROL PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	041092	PCB UNIT DSP REVERB	(DIGITAL EFFECTS UNIT W/OUT CONTROL BOARD)
2	041818	BRACKET RT ANGLE	(DIG REV CONTROL BOARD MNT)
1	041814	CABLE 10CKT X 101MM W/CONNECT	@P3
1	041815	CABLE 12CKT X 101MM W/CONNECT	@P2
2	038703	CAP CA .1μF 50V	C4,5
1	027278	CAP MPF .1μF 63V 10%	C11
1	027281	CAP MPF .22μF 63V	C7
3	028461	CAP AE RDL 10μF 35V 20%	C1,2,3
4	028465	CAP AE RDL 22μF 25V 20%	C6,8-10
8	006260	DIODE 1N4448/1N914B SIGNAL	CR1-8
2	041074	ENCODER 16 POS BI	S1,2
1	041816	HEADER 8CKT RT ANG	P1
1	028120	IC 4053B TPL 2 CHAN ANLG SW	U5
1	031611	IC DUAL OP AMP PC4560	U4
2	041812	IC REGULATOR +5V MC7805CT	U1,2
1	041813	IC REGULATOR -5V MC7905CT	U3
1	041878	PCB ASSY DIG REV CONTROL PX22	(STUFFED)
1	041876	PCB FAB DIGITAL REV CONTROL	(RAW BOARD)
3	024965	RES CF 1/4W 5% 1K	R1,2,15
1	024971	RES CF 1/4W 5% 2.2K	R4
2	024977	RES CF 1/4W 5% 4.7K	R3,11
6	024981	RES CF 1/4W 5% 10K	R6,7,8,9,13,14
2	024987	RES CF 1/4W 5% 22K	R5,10
1	025081	RES CF 1/4W 5% 5.6M	R12
1	025069	RES CF 1/4W 5% 1M	
4	032908	SCRW TF 6-32X3/8 PHP ZI	(PCB MOUNT)
3	016742	XSTR PNP 2N4403 TO-92	Q1-3

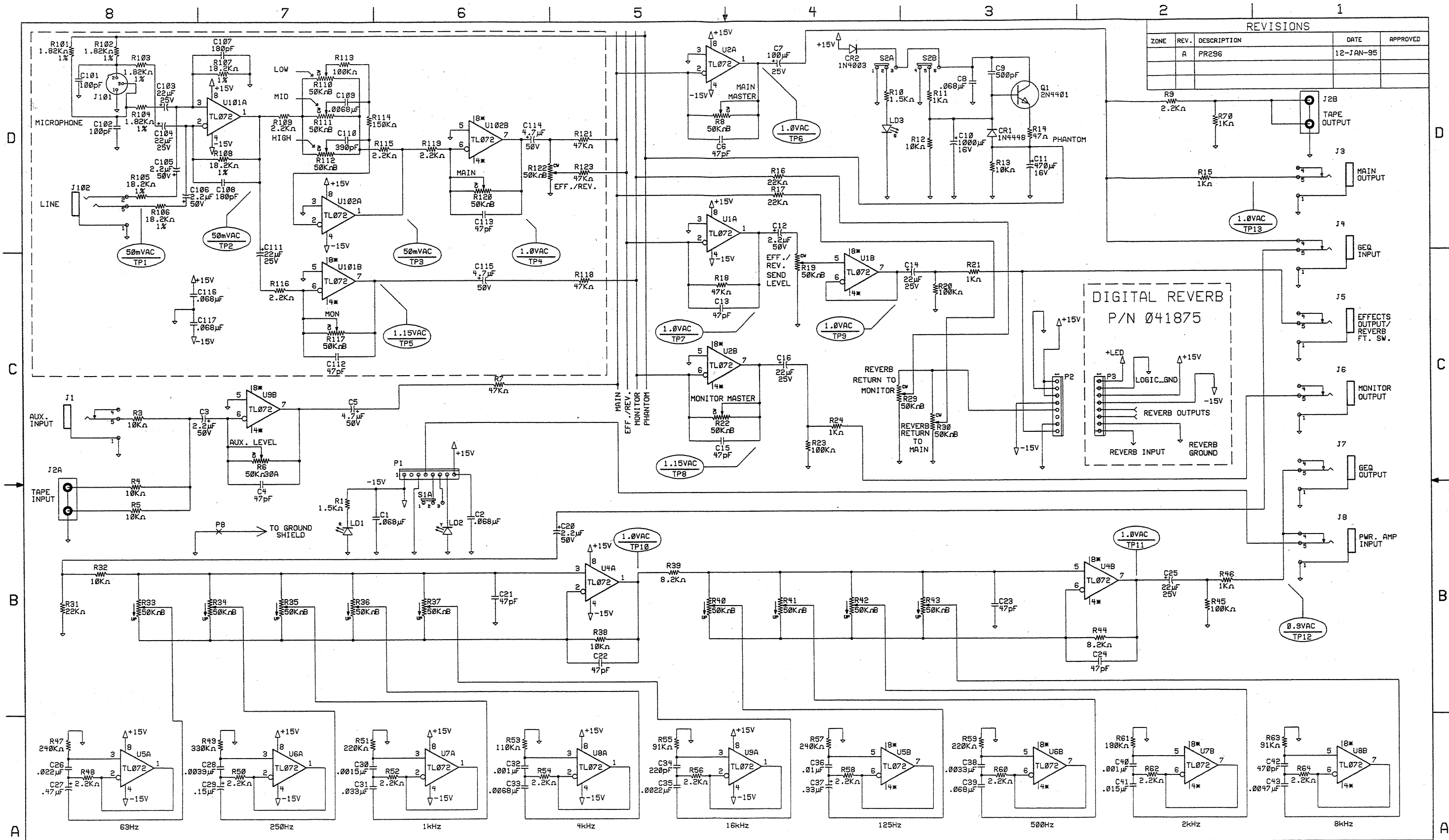
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	RELEASED PR#112	6-2-89	[Signature]
	B	EC#480	6-25-89	[Signature]



NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTORS 1/4W. ± 5%.
2. ALL CAPACITORS 63 VOLT MINIMUM.
3. ALL VOLTAGES READ TO GROUND WITH A D.V.M. UNDER THE FOLLOWING CONDITIONS: GRAPHIC EQUALIZER AND LOW FREQUENCY / HIGH FREQUENCY CONTROLS AT CENTER TRAVEL / ROTATION, MAIN AND MONITOR REVERB AT MINIMUM, AND ALL OTHER CONTROLS AT MAXIMUM.
4. LAST INSTANCE: C39, J8, LD2, P1, R60, SP6, US. INSTANCE R52 AND R61 DELETED.
5. CIRCUITRY WITHIN DASHED LINES IS IDENTICAL FOR EACH CHANNEL.
6. INSTANCE NAMES IN EACH CHANNEL ARE KEYED TO THE CHANNEL NUMBERS.

REF. DES.	ITEM	QTY	PART NO.	DESCRIPTION
DATABASE FILE: SR6PS.09F				
CHECKED BY: LJA				
DATE: 6-27-89				
APPROVED: [Signature]				
DATE: 6-27-89				
TOLERANCES: UNLESS OTHERWISE NOTED				
X.X			±0.050"	
X.XX			±0.010"	
X.XXX			±0.005"	
ANGLES			±0.500°	
			PROPRIETARY	FENDER MUSICAL INSTRUMENTS CO. 1130 COLUMBIA ST. BREA, CALIFORNIA 92621
			MUSICAL INSTRUMENTS	
				1130 Columbia Street Brea, Ca. 92621
TITLE:				SCHMATIC, PREAMP, SR6520 AND SR8520.
SIZE	D	DRAWN: HUGHES	031824	REV.
		ENGR: HUGHES		
SCALE:		DATE: 12-1-88	SHEET 1 OF 1	



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	PR296	12-JAN-95	

NOTES: UNLESS OTHERWISE SPECIFIED.

- ALL VOLTAGES READ TO GROUND WITH A D.V.M. UNDER THE FOLLOWING CONDITIONS:
 - GRAPHIC EQUALIZER, LOW, MID, AND HIGH FREQUENCY CONTROLS AT CENTER TRAVEL / ROTATION.
 - MAIN AND MONITOR REVERB AT MINIMUM.
 - ALL OTHER CONTROLS AT MAXIMUM.
 - A 1kHz, UNBALANCED INPUT AT J102.
- ALL RESISTORS 1/4W, ± 5%
- ALL CAPACITORS 63 VOLT MINIMUM.
- LAST INSTANCE: C43, CP1, CR2, J8, LD3, P5, R64, S2, U9.
- CIRCUITRY WITHIN DASHED LINES IS IDENTICAL FOR EACH CHANNEL.
- INSTANCE NAMES IN EACH CHANNEL ARE KEYED TO THE CHANNEL NUMBERS.

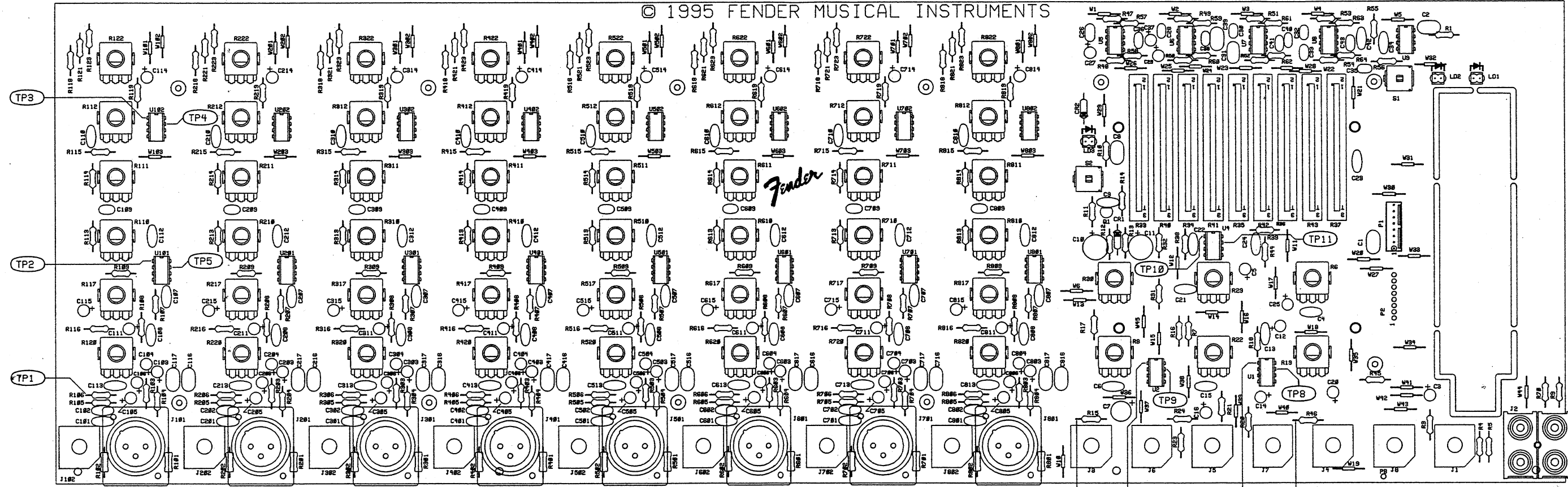
DATABASE FILE: 2296S.DBF CHECKED BY: MS DATE: 1-27-95 APPROVED: MS DATE: 1-27-95 TOLERANCES: UNLESS OTHERWISE NOTED X.X .050" X.XX .010" X.XXX .005" ANGLES .0500°	PROPRIETARY THIS DRAWING DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO AND IS THE PROPERTY OF THE FENDER MUSICAL INSTRUMENTS CO. AND MAY NOT BE USED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM: FENDER MUSICAL INSTRUMENTS CO. 2621 RESEARCH DRIVE CORONA, CA 91728 USA	FENDER MUSICAL INSTRUMENTS 2621 Research Drive Corona, CA 91728 USA TITLE: SCHEMATIC, PREAMP, SR6520PP AND SR8520PP SIZE: D DRAWN: M.COZZA DRAWING NUMBER: 049144 REV: A CREATED: 4-OCT-94 PLOTTED: 10-JAN-95 SHEET 1 OF 1
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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	RELEASED PR296	12-JAN-95	

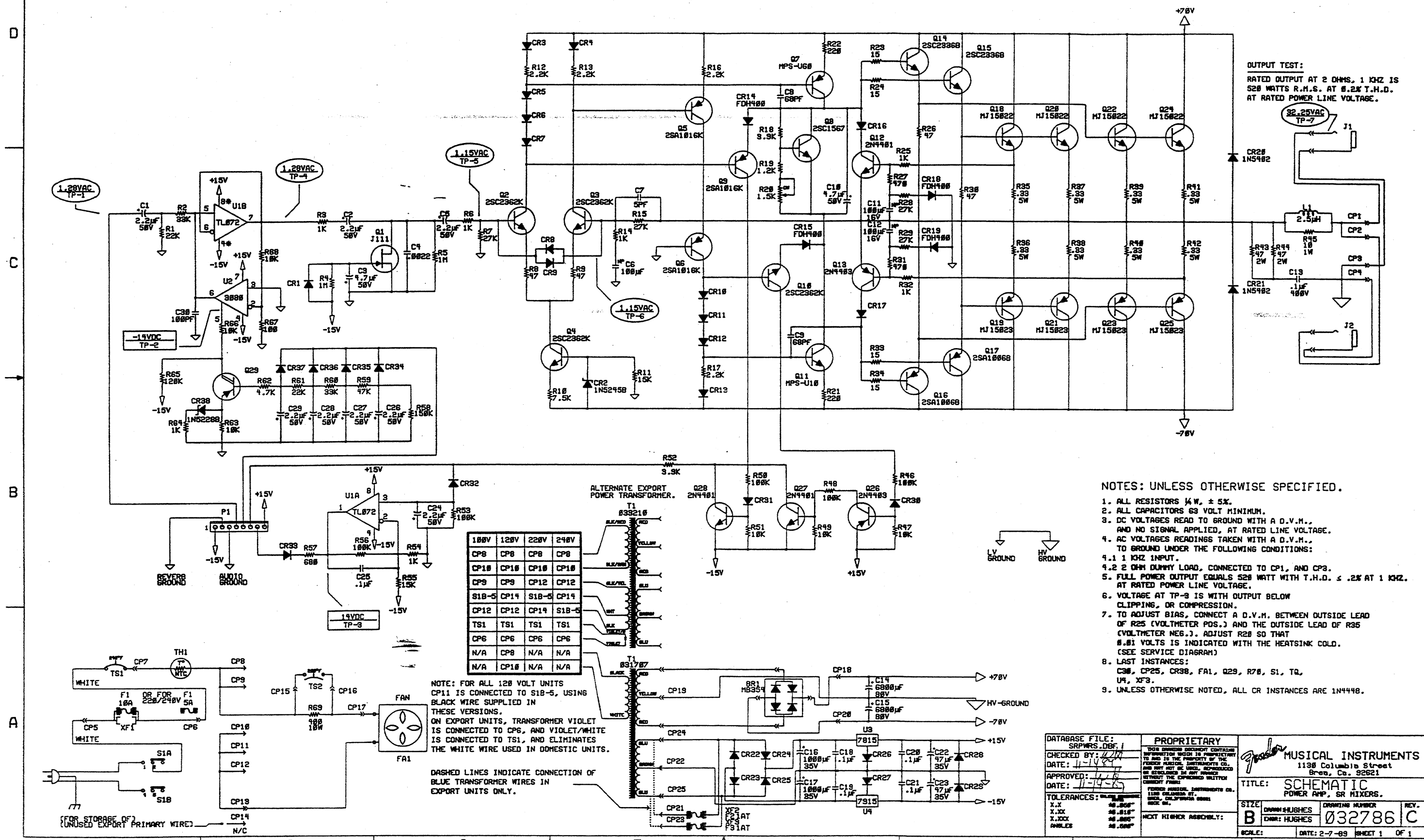
© 1995 FENDER MUSICAL INSTRUMENTS

FILM/DWG:
 DATABASE: Z296P1.DBF DATE: 13-JAN-95
 LAYERS PLOTTED: 1 2 3 4 10
 18

DATABASE FILE: Z296P1.DBF CHECKED BY: <i>MS</i> DATE: <i>1-27-95</i> APPROVED: <i>MS</i> DATE: <i>1-27-95</i>	PROPRIETARY THIS DRAWING DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO AND IS THE PROPERTY OF THE FENDER MUSICAL INSTRUMENTS CO., AND NOT BE USED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE WRITTEN CONSENT FROM: FENDER MUSICAL INSTRUMENTS CO. HEADQUARTERS 2621 RESEARCH DRIVE CORONA, CA 91720 USA	Fender MUSICAL INSTRUMENTS 2621 Research Drive Corona, CA 91720 USA TITLE: SERVICE DIAGRAM SR6520PD, SR6520PD PREAMP SIZE: B DRAWN: M.COZZA DRAWING NUMBER: 049146 REV: A ENGR: M.COZZA CREATED: 13-JAN-95 SHEET 1 OF 1 PLOTTED: 13-JAN-95
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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	RELEASED PR#112	6-2-89	
	B	EC#484	7-5-89	
	C	EC#538	11-11-89	



OUTPUT TEST:
 RATED OUTPUT AT 2 OHMS, 1 KHZ IS
 520 WATTS R.M.S. AT 0.2% T.H.D.
 AT RATED POWER LINE VOLTAGE.

NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL RESISTORS 1/4W. ± 5%.
2. ALL CAPACITORS 63 VOLT MINIMUM.
3. DC VOLTAGES READ TO GROUND WITH A D.V.M., AND NO SIGNAL APPLIED, AT RATED LINE VOLTAGE.
4. AC VOLTAGE READINGS TAKEN WITH A D.V.M., TO GROUND UNDER THE FOLLOWING CONDITIONS:
 - 4.1 1 KHZ INPUT.
 - 4.2 2 OHM DUMMY LOAD, CONNECTED TO CP1, AND CP3.
5. FULL POWER OUTPUT EQUALS 520 WATT WITH T.H.D. ≤ .2% AT 1 KHZ, AT RATED POWER LINE VOLTAGE.
6. VOLTAGE AT TP-3 IS WITH OUTPUT BELOW CLIPPING, OR COMPRESSION.
7. TO ADJUST BIAS, CONNECT A D.V.M. BETWEEN OUTSIDE LEAD OF R25 (VOLT METER POS.) AND THE OUTSIDE LEAD OF R35 (VOLT METER NEG.). ADJUST R28 SO THAT 0.01 VOLTS IS INDICATED WITH THE HEATSINK COLD. (SEE SERVICE DIAGRAM)
8. LAST INSTANCES: C38, CP25, CR38, FA1, Q29, R78, S1, TQ, U4, XF3.
9. UNLESS OTHERWISE NOTED, ALL CR INSTANCES ARE 1N4448.

NOTE: FOR ALL 120 VOLT UNITS CP11 IS CONNECTED TO S1B-5, USING BLACK WIRE SUPPLIED IN THESE VERSIONS. ON EXPORT UNITS, TRANSFORMER VIOLET IS CONNECTED TO CP6, AND VIOLET/WHITE IS CONNECTED TO TS1, AND ELIMINATES THE WHITE WIRE USED IN DOMESTIC UNITS.

DASHED LINES INDICATE CONNECTION OF BLUE TRANSFORMER WIRES IN EXPORT UNITS ONLY.

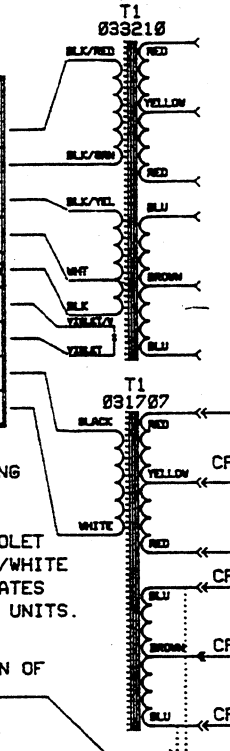
DATABASE FILE: SRPWRS.DBF CHECKED BY: DATE: 11-14-89 APPROVED: DATE: 11-14-89 TOLERANCES: X.X .05" X.XX .010" X.XXX .005" ANGLES .005"	PROPRIETARY THIS DRAWING DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO AND IN THE POSSESSION OF THE MUSICAL INSTRUMENTS CO. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY MANNER WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE COMPANY. MUSICAL INSTRUMENTS CO. 1138 Columbia Street Brea, Ca. 92621 TITLE: SCHEMATIC POWER AMP, SR MIXERS. SIZE: B DRAWN: HUGHES ENGR: HUGHES SCALE:	DRAWING NUMBER: 032786 REV: C DATE: 2-7-89 SHEET 1 OF 1
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6 5 4 3 2 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	RELEASED PR#112	5-25-89	<i>[Signature]</i>
	B	EC#484	7-5-89	<i>[Signature]</i>
	C	ECO# L02062	9-11-90	<i>[Signature]</i>

100V	120V	220V	240V
CP8	CP8	CP8	CP8
CP10	CP10	CP10	CP10
CP9	CP9	CP12	CP12
S1B-5	CP14	S1B-5	CP14
CP12	CP12	CP14	S1B-5
TS1	TS1	TS1	TS1
CP6	CP6	CP6	CP6
N/A	CP8	N/A	N/A
N/A	CP10	N/A	N/A

ALTERNATE EXPORT POWER TRANSFORMER.



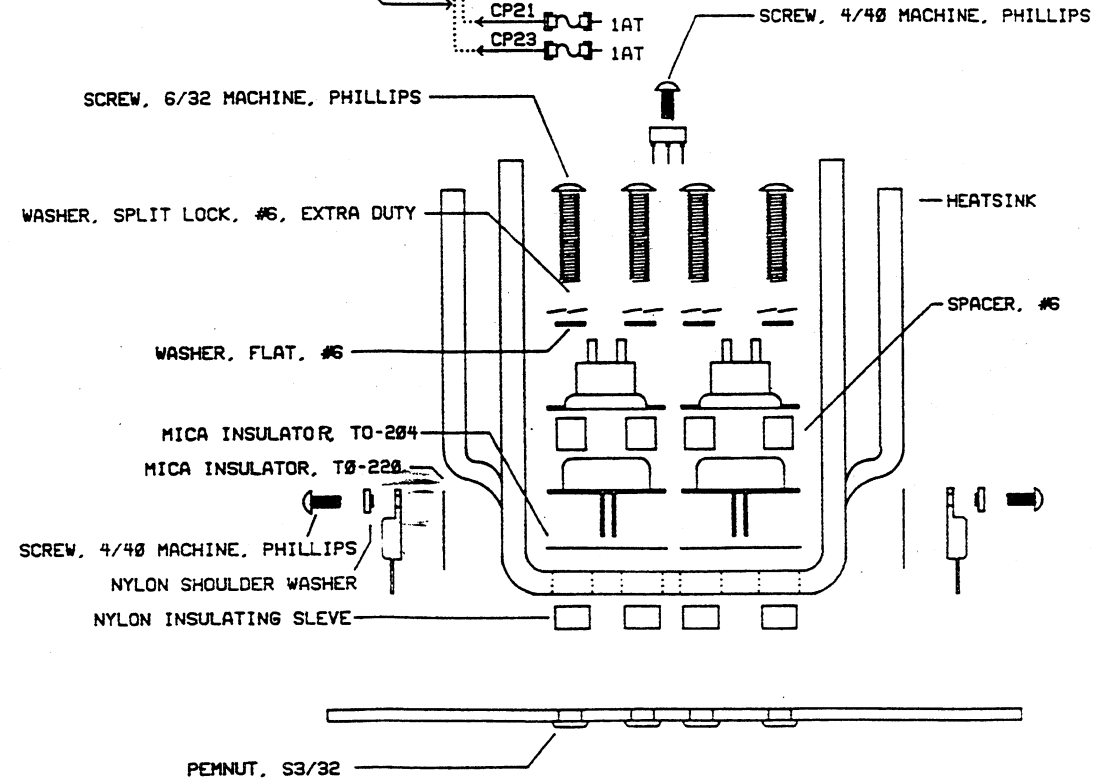
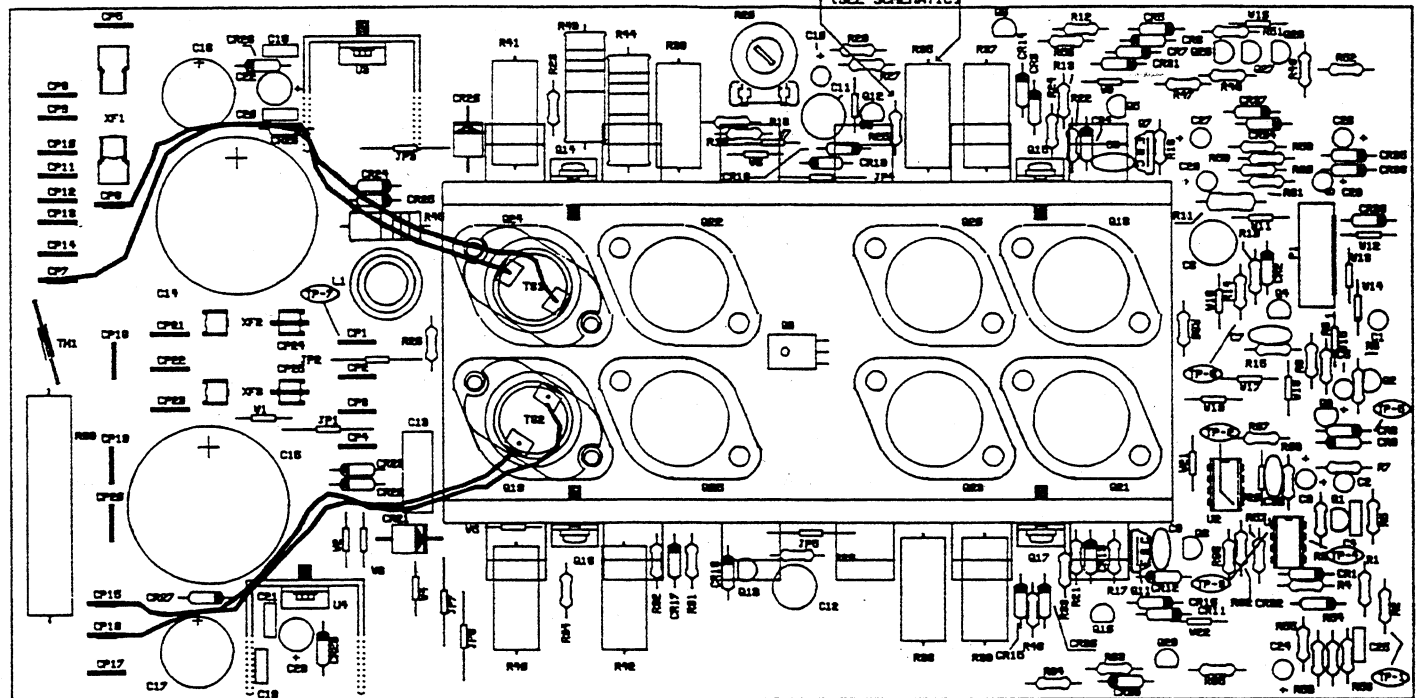
- ASSEMBLY NOTES:
- ASSUME ALL "CP" AND "XF" INSTANCES ARE INSTALLED WITH THE FOLLOWING EXCEPTIONS:
 - ON EXPORT UNITS, DELETE CP24 AND CP25.
 - ON DOMESTIC UNITS, DELETE CP9, CP12, CP14, CP21, CP23, XF2, AND XF3.
 - WIRE SETS:

ON EXPORT UNITS, WIRES FROM TS-1 ARE REPLACED BY A SINGLE A SINGLE WIRE BETWEEN ONE TERMINAL OF TS1 AND CP7. CONNECTION OF THE REMAINING TERMINAL OF TS1 AND CP6 IS ACCOMPLISHED WITH THE VIOLET AND VIOLET/WHITE LEADS INCLUDED ON EXPORT TRANSFORMER 033210.

NOTE: FOR ALL 120 VOLT UNITS CP11 IS CONNECTED TO S1B-5, USING BLACK WIRE SUPPLIED IN THESE VERSIONS. ON EXPORT UNITS, TRANSFORMER VIOLET IS CONNECTED TO CP6, AND VIOLET/WHITE IS CONNECTED TO TS1, AND ELIMINATES THE WHITE WIRE USED IN DOMESTIC UNITS.

DASHED LINES INDICATE CONNECTION OF BLUE TRANSFORMER WIRES IN EXPORT UNITS ONLY.

C
B
A



REF. DES.	ITEM	QTY	PART NO.	DESCRIPTION
DATABASE FILE: SRPWRP.DBF				
CHECKED BY: <i>[Signature]</i>				
DATE: 9-17-90				
APPROVED: <i>[Signature]</i>				
DATE: 9-17-90				
TOLERANCES: UNLESS OTHERWISE SPECIFIED				
X.X				±0.050"
X.XX				±0.010"
X.XXX				±0.005"
ANGLES				±0.500°
			PROPRIETARY	FENDER MUSICAL INSTRUMENTS CO. 1130 COLUMBIA ST. BREA, CALIFORNIA 92621 ROCK ON.
			MUSICAL INSTRUMENTS	
			1130 Columbia Street Brea, Ca. 92621	
TITLE: SERVICE DIAGRAM				
520 WATT SR POWER AMPLIFIERS.				
SIZE	DRAWN: HUGHES		DRAWING NUMBER	REV.
B	EMER. HUGHES		033325	C
SCALE:			DATE: 6-1-89	SHEET 1 OF 1

6 5 4 3 2 1