

# SR Series Mixers Owner's Manual

SR-4150P

SR-6300P

SR-8300P

SR-6520P

SR-8520P

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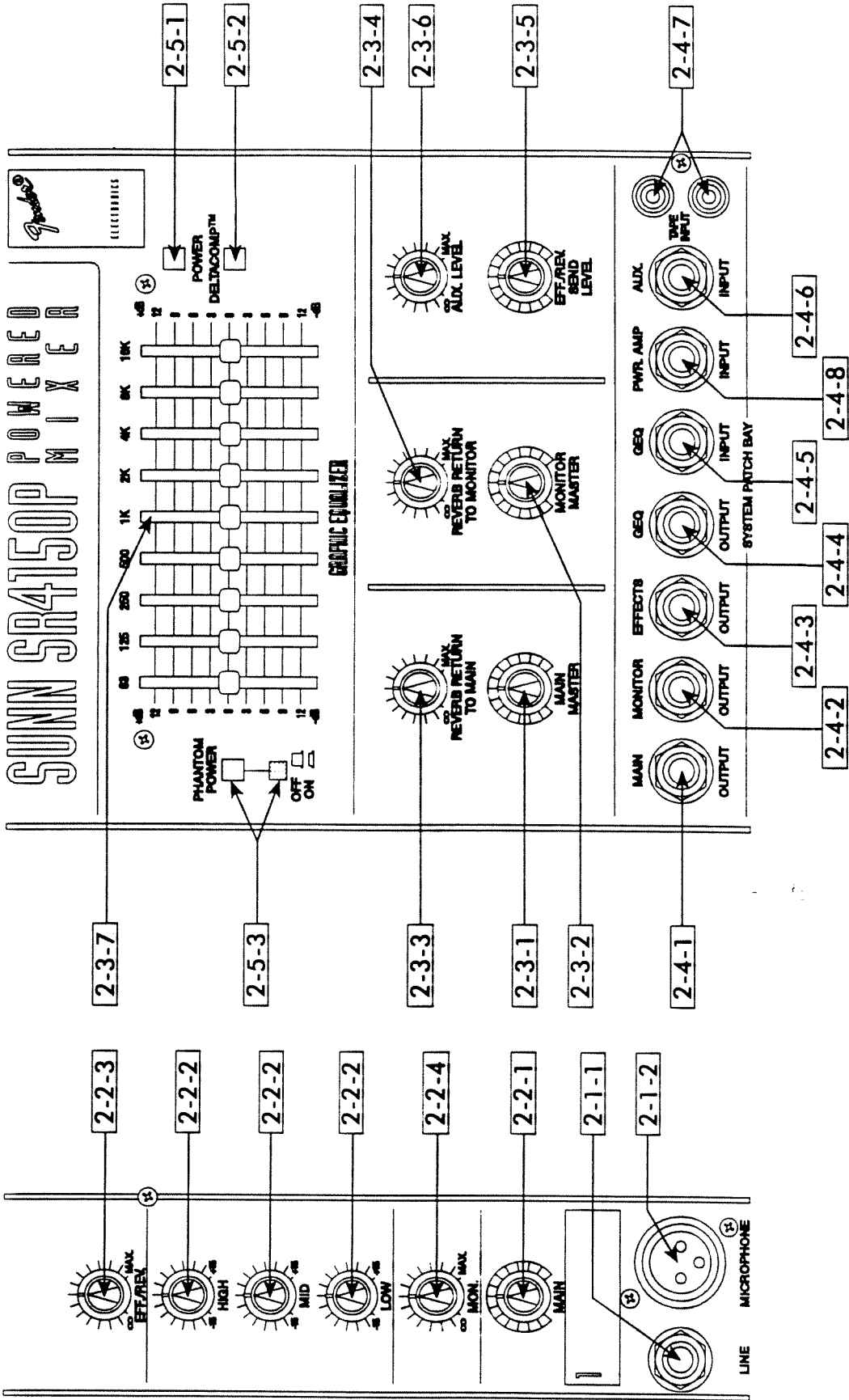
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ELECTRONICS

# FRONT PANEL CONTROLS

## CHANNEL CONTROLS

## MASTER SECTION CONTROLS



2-3-3. MAIN MIX REVERB RETURN CONTROL. This control determines how much of the signal from the reverb system is added or returned to the main mix.

2-3-4. MONITOR MIX REVERB RETURN CONTROL. The MONITOR REVERB RETURN LEVEL control determines how much of the signal from the reverb system is added to the monitor mix. Many vocalists like to hear some reverb on their voices in the monitor system; be aware that reverb in the monitors increases the likelihood of feedback in the monitor system due to increased gain.

2-3-5. EFF./REV. SEND MASTER LEVEL CONTROL. The mix created by the settings of the channel EFF/REV controls appears at the EFFECTS OUT jack, as well as being sent to the reverb system. The signal level at the EFFECTS OUT jack is adjusted by the individual channel EFF./REV. controls, and the effects out master control.

2-3-6. AUX RETURN LEVEL CONTROL. Signals patched into the AUX IN jack and / or the tape in jacks are sent to the Main buss via the AUX LEVEL control. This control determines how much of the AUX input signal appears in the main mix.

2-3-7. GRAPHIC EQUALIZER. The SR mixers each have a nine band graphic equalizer. The equalizer consist of active band pass / band reject filters spaced at octave intervals. The lowest frequency filter is at 63Hz while the highest frequency filter is centered at 16kHz. All others are centered on the frequencies indicated below their sliders. Moving the sliders up or down boosts or cuts the gain at the indicated frequencies. This allows the sound engineer to suppress feedback by compensating for room resonances encountered in live sound reinforcement applications. The EQ controls are accurately scaled in dB to indicate the amount of cut or boost applied at each frequency.

NOTE: It is possible for distortion to occur in the Graphic Equalizer if excessive attenuation is used (slider well below center) while also trying to achieve significant level within the bands attenuated.

2-3-8. PHANTOM POWER Select (Switch and Indicator LED) Engaging the switch applies 15 volts of phantom power to all the XLR microphone input connectors for powering electret condenser microphones. When the LED is illuminated, this indicates the phantom power is on. The 15 volts used for phantom power will run nearly all condenser microphones.

## 2-4. PATCH BAY.

2-4-1. MAIN OUT. Signals from each of the channels are combined with Effects In signals and the Main Reverb signal to form the final main mix. The overall level of the mix is controlled by the MAIN level control and this mix appears at the MAIN OUT jack. The mix is also normally passed on to the Graphic EQ and to the power amplifier (see Sections 2-4-5 and 2-4-8). Inserting a plug into the MAIN OUT jack does not

interrupt the normal signal flow. The jack is useful for recording a live performance. It can also be used for inserting signal processing equipment into the signal path (see Section 4-5), using the MAIN OUT as a send and the GEQ IN as a return.

2-4-2. MONITOR OUT. Signals present on the Monitor buss are combined in the monitor summing amplifier and sent to the MONITOR OUT jack. The signal level present at this output is determined by the MONITOR LEVEL control.

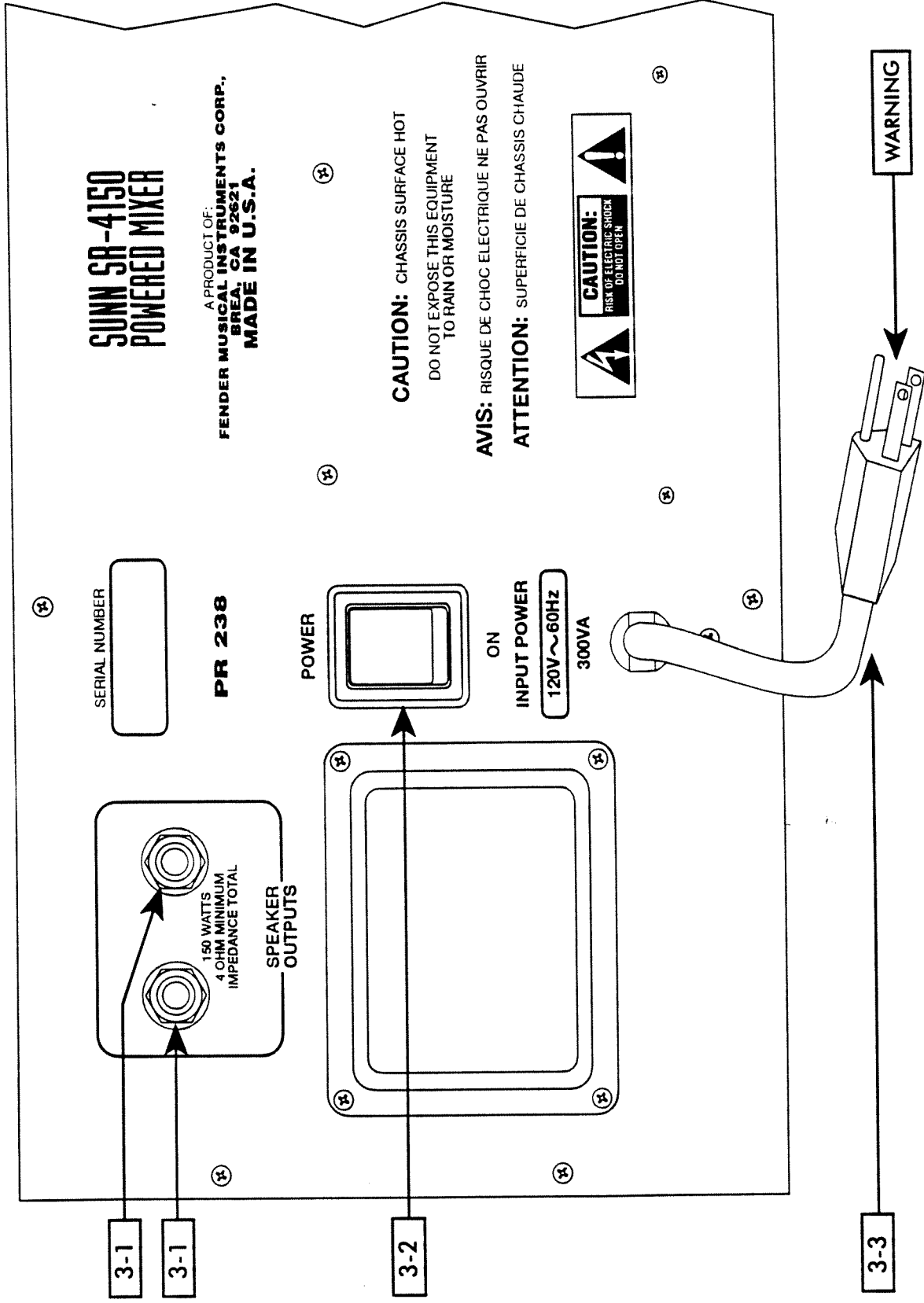
2-4-3. EFFECTS OUT. Signals present on the Effects/Reverb buss are mixed in the effects/reverb summing amplifier, and this mix is sent both to the Reverb driver and to the effects output jack. Thus the mix created by the settings of the EFF/REV level controls on each of the preamp channels is present at the EFFECTS OUT jack. The overall level at this output is determined by the master mix section EFF LEVEL control. This output may be used to drive external effects (echo units, phase shifters, flangers, digital delays, etc.). The return signal from the effect may be patched into the mixer through the AUX IN jack, or by way of a preamp channel 1/4" input jack. Use of a preamp channel as a return gives you the ability to shape the frequency response of the signal; however, care must be taken to insure that the EFF/REV control on that channel is turned all the way down - otherwise a feedback loop will exist which could cause oscillation and possible damage to speakers. Care must be taken to insure that the amplitude of the return signal is not too great for the preamp channel input. An input pad may be used if needed.

2-4-4. GRAPHIC OUT. The output of the Graphic Equalizer is present at the GRAPHIC OUT jack; inserting a plug into this jack does not interrupt the normal signal path. The jack is useful for patching more power amplifiers into the system, for post-equalizer recording and for inserting signal processing equipment (limiters, parametric equalizers and the like) between the equalizer and the power amplifier (see Section 4-5).

2-4-5. GRAPHIC IN. The graphic equalizer is prepatched to the main output signal. However, the GRAPHIC IN jack allows this "normalized" patch to be defeated; inserting a 1/4" phone plug into the jack disconnects the equalizer from the main signal and instead connects it to any signal carried by the phone plug. This allows the equalizer to be patched to other SR outputs or to other pieces of audio equipment.

2-4-6. AUX IN. This input is generally used as a return from an external signal processing device (flanger, phase shifter, etc.). Signals present at this input are routed to the Main buss by way of the AUX LEVEL control. In emergencies, it is possible to use the AUX IN as a line level preamp channel, although it lacks the preamp channels' equalization, monitor and effects sends.

# REAR PANEL CONTROLS



occurs between 1 kHz and 4 kHz. Continue until the ringing has stopped.

5. Again, slowly increase the output level control until the system is on the verge of feeding back. Adjust the equalizer to remove the potential feedback. Continue this procedure until you have achieved sufficient gain for your application or until the equalizer becomes ineffective at removing the ringing. (It is best to back off the gain once maximum gain before feedback has been established). Avoid extreme settings or settings which require a large amount of cut in the middle frequency bands, as such settings impair intelligibility.

6. "Fine tune" the equalizer settings as the performance progresses to achieve the best overall sound from the system.

#### 4-3. CORDS AND CABLES.

4-3-1. MICROPHONE CORDS. On the SR mixers, use balanced two-conductor shielded cable for all long runs. Balanced systems are capable of rejecting noise introduced from such sources as cash registers, electric motors and triac-controlled lights. If a balanced cable is connected to an unbalanced output (e.g., a keyboard mixer output) or microphone, use a balancing transformer close to the unbalanced device. This ensures maximum common-mode noise rejection for the entire system.

If you have no choice and must use unbalanced cables, use the shortest cables possible and keep them away from AC power mains, lighting cables and speaker wires. If you want the quietest system possible, you should follow these rules with balanced lines as well.

4-3-2. SPEAKER CABLES. Use two conductor zip cord to connect the amplifier outputs to your speakers. The gauge of the wire is important; wire that is too light in gauge causes a loss in damping factor (the ability of the amplifier to control the motion of the speaker) and also consumes power (the power from the amplifier heats up the wire for your particular situation). To calculate your speaker impedance, use Figure 3.

4-4. INPUT PADS. If input signal levels are too great, the input stage may be overdriven and cause distortion. The solution in such cases is to use an input pad. A 30 dB pad can be made by using a Switchcraft connector (part #S3FM) with the resistor network shown in Figure 4.

4-5. PATCHING. Figures 5 through 8 show possible ways of patching external equipment into the SR mixer. They are by no means the only patches possible. If you want to try a patch that is not illustrated, consult the Block Diagram to determine if your patch is possible. When patching external equipment into the signal chain, best results will be obtained by following these rules:

Use the highest quality patch cords available and keep them as short as possible

Avoid patching a buss output back into its input (an example of this is patching a phase shifter from the EFFECTS OUT and returning it to the input of a channel which has its EFF/REV control turned up); doing so may result in oscillation (possibly inaudible) that can damage loudspeakers and create distortion.

Do not use a mic level or instrument level effect (such as an effect intended for guitar) with a line level signal (such as the Main or Graphic EQ output).

#### 5. UPKEEP AND SERVICE

The SUNN SR powered mixers have been designed to give years of trouble free service. With a few precautions you can help to insure it's continued reliable service.

- Do not obstruct the air vents on the rear panel.
- Transport the mixer with care.
- Periodically inspect the mixer for damage which may occur during transportation.
- If you leave the mixer set up when you are not using it, protect it from dust with a soft cover.

**DO NOT SET FOOD OR BEVERAGE** on the SR powered mixer - this can not be overemphasized. Spilling a drink can be the quickest way to ruin a potentiometer (fader, level control, EQ control) or switch.

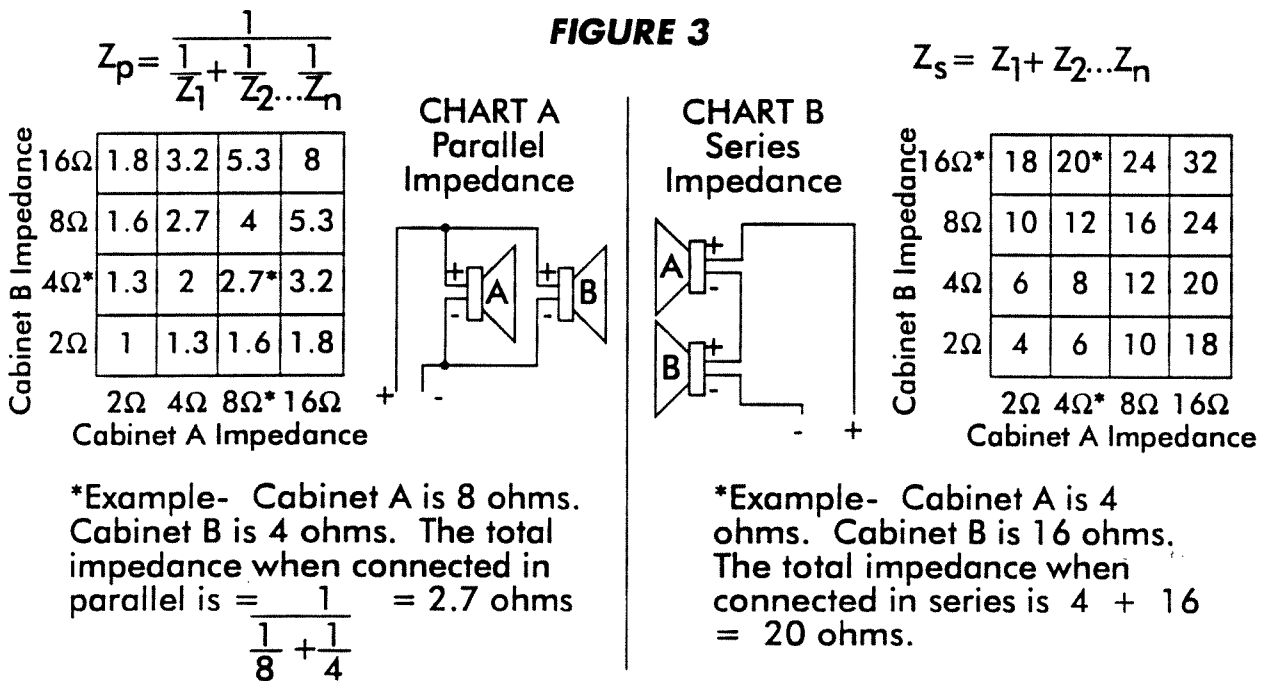
- When using the mixer outdoors, protect it from moisture (rain, sprinklers, beer, etc.)
- Periodically clean the mixer by wiping it with a soft cloth and a small amount of furniture polish.

Speaker Wire Length	Speaker Wire Gage			
	8	10	12	14
100'-UP	8	10	12	14
50'-100'	10	12	14	16
*25'-50'	12	14	*16	18
10'-25'	14	16	18	18
0'-10'	16	18	18	18

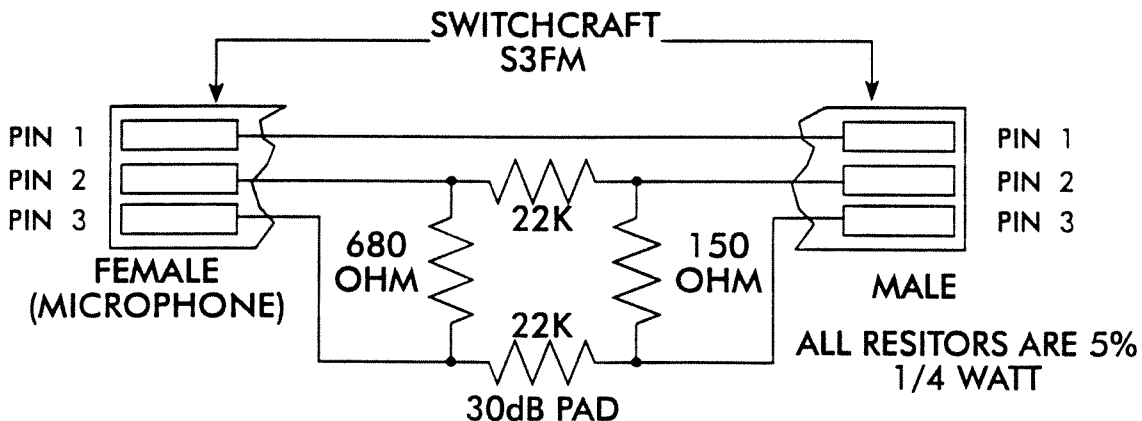
2Ω 3Ω \*8Ω 16Ω  
Speaker Impedance

**FIGURE 2**

\*Example- The length of speaker wire required is between 25 and 50 feet and the speaker impedance is 8 ohms. The minimum recommended gauge speaker wire is 16 gauge.

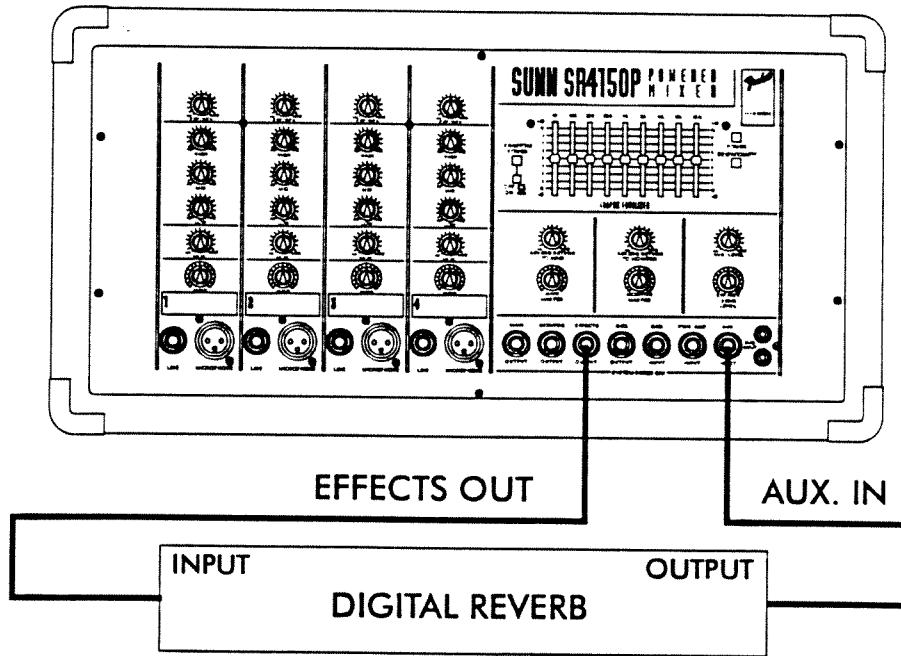


**FIGURE 4**



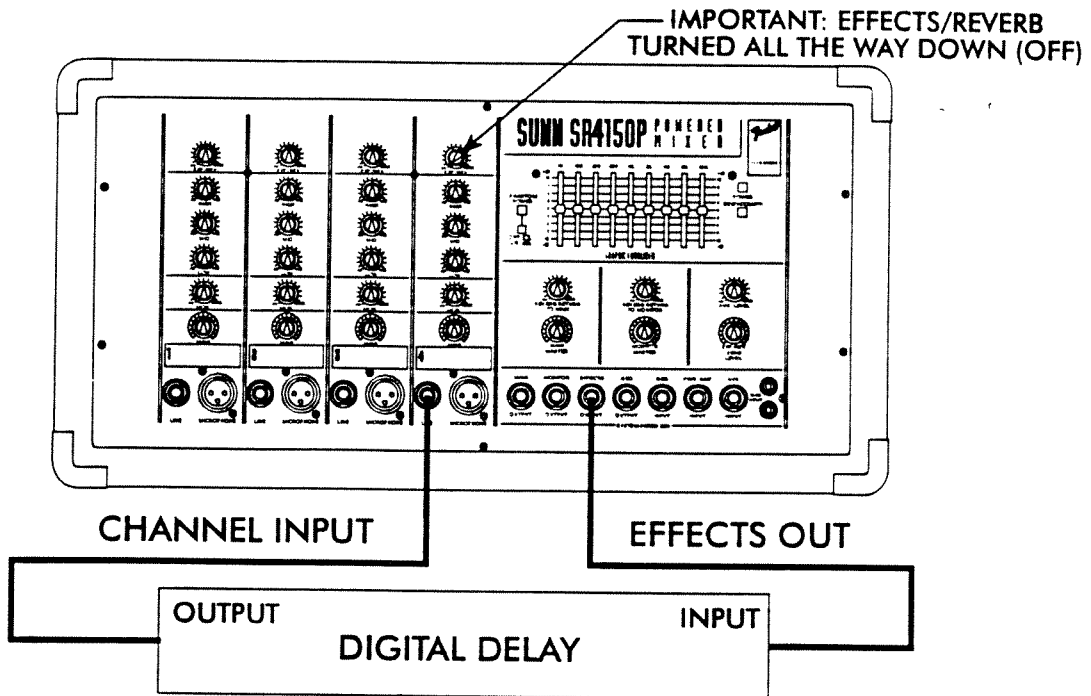
**FIGURE 6**

PATCHING AN EFFECT BETWEEN THE EFFECTS OUT AND THE AUX. IN.



**FIGURE 7**

PATCHING AN EFFECT BETWEEN THE EFFECTS OUT AND CHANNEL INPUT.



## **SR-6520P / SR-8520P Specifications**

Part Number: 120V Version 071-6520-000 / 071-8520-000  
230V Version 071-6520-060 / 071-8520-060

Type Specification: PR179 / PR189

Power Specification: 120V Version: 120VAC, 60Hz, 10A Max.  
230V Version: 230VAC, 50Hz, 5.2A Max.

### **POWER AMPLIFICATION SECTION**

Power Output: 520 Watts

Rated Load Impedance: 2 Ohms

Distortion at 520 Watts: Less than .2% @ 1KHz into 2 Ohms

Input Sensitivity: 1.28 Volts R.M.S.

Input Impedance: 22K Ohms

DELTA COMP™ Range: 20dB

### **PRE-AMPLIFIER SECTION**

LOW-Z Input Impedance: 1.82K Ohms

HI-Z Input Impedance: 18.2K Ohms

HI-Z Input Sensitivity for 520W: 55mV R.M.S.

MAIN MASTER and Channel  
MAIN at maximum, all tone  
controls and GEQ at "0"  
detent, power amp at 520  
Watts, 4 Ohms.

Channel Tone Controls: LOW +/- 15 dB at 100 Hz  
MID +/- 15 dB at 750 Hz  
HIGH +/- 15 dB at 10 KHz

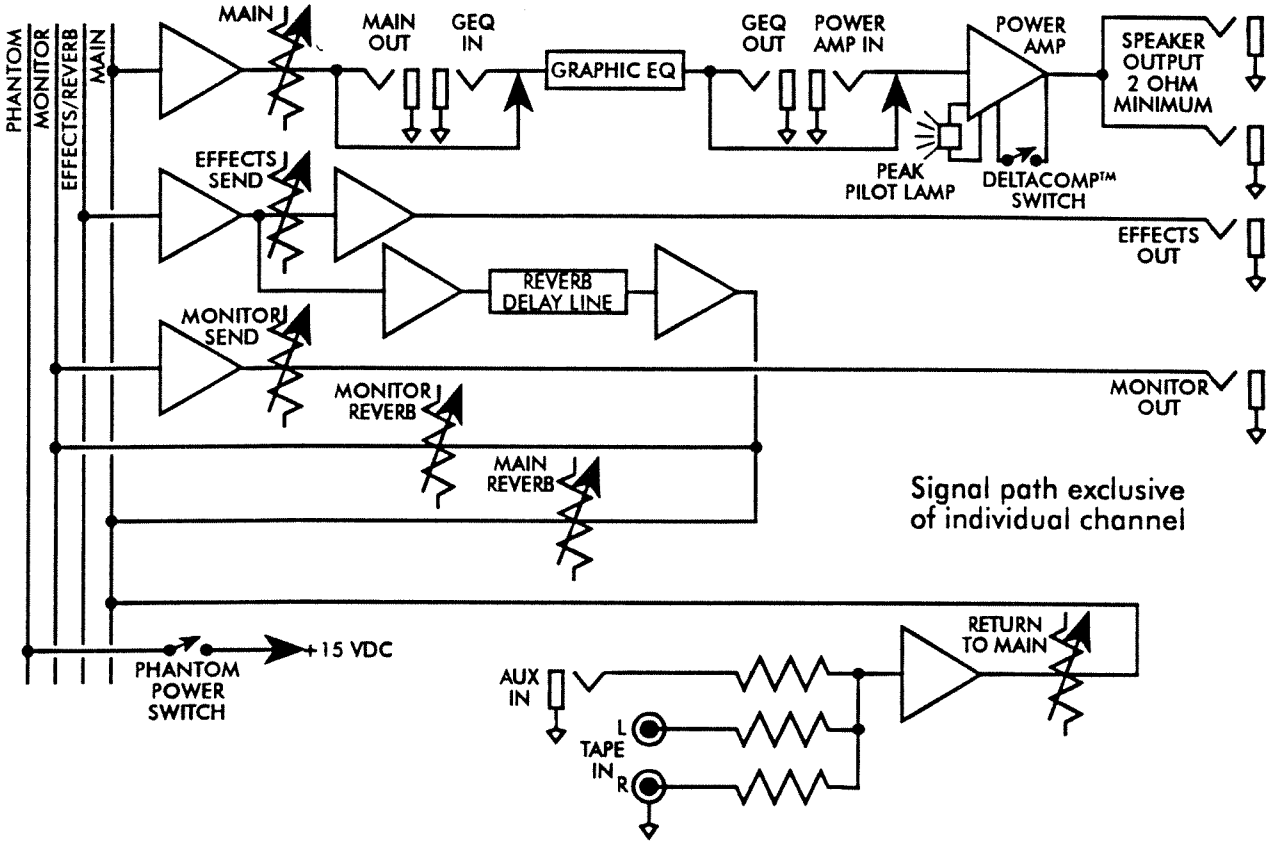
Graphic Equalizer: +/- 12dB at 63, 125, 250, 500, 1K, 2K, 4K, 8K and  
16K Hz.

### **PHYSICAL SPECIFICATIONS:**

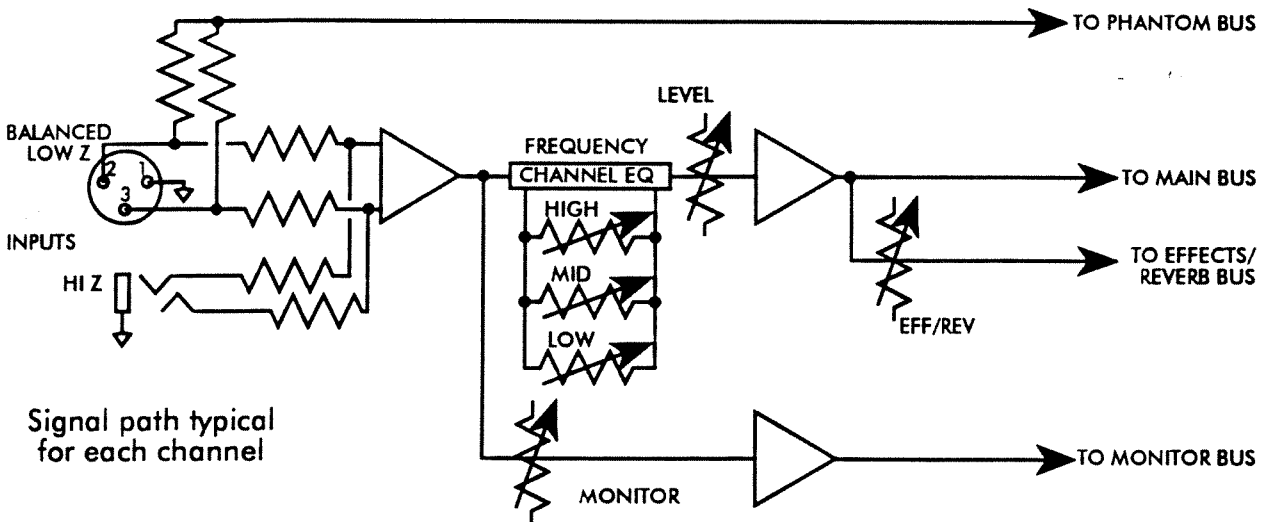
	<b>SR6520P</b>	<b>SR8520P</b>
Height:	10-7/16 Inches ( 26.5 cm )	Height: 10-7/16 Inches ( 26.5 cm )
Width:	21-5/8 Inches ( 54.9 cm )	Width: 25-5/8 Inches ( 65.1 cm )
Depth:	12 Inches ( 30.5 cm )	Depth: 12 Inches ( 30.5 cm )
Weight:	38.5 Lbs. ( 17.5 Kg )	Weight: 40.5Lbs. ( 18.4 Kg )



# 1-2 Block Diagram



Signal path exclusive of individual channel



Signal path typical for each channel

A Product of:  
**Fender Musical Instruments Corp.,**  
 Brea, Ca 92621