PA4FX Powered Mixer with Digital Effects

Owner's Manual

Congratulations!

You are now the proud owner of one of the most versatile and economical powered mixers available, the Crate PA4FX Powered Mixer with Digital Effects. This compact unit features Crate's legendary performance and high quality construction in a rugged and easy to operate package. Each of the four channels features a combination 1/4"/XLR balanced input jack for low noise operation, as well as individual Low, High, Reverb and Main (level) controls for optimum flexibility and control. The Master control section features a three-band EQ, along with a Reverb Return and Master Level control. The internal power amplifier is capable of delivering 60 watts into 4 ohms but will also drive speaker loads as low as 2 ohms. A built-in limiter keeps the output clean even at full power. The front panel "Aux In" and rear panel Effects Loop give you even greater flexibility and open up even more possibilities for this small, power-packed unit.

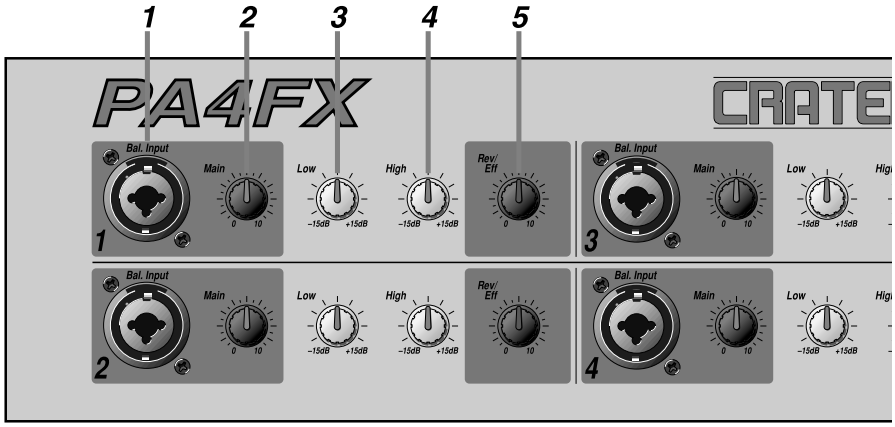
Your PA4FX was designed in America using only the best components. Extensive testing and Crate's Five-Year Warranty assure you that your new mixer is the absolute best it can be. In order to get the most out of it, we strongly urge you to read this manual before using the mixer.

And ***thank you*** for choosing ***CRATE Pro Audio.***

CRATE PRO AUDIO

PA4FX Powered Mixer with Digital Effects

FRONT PANEL:



1. BAL. INPUT: Connection to the mixer is made here by means of a balanced 1/4" high-Z or XLR-type low-Z plug. The wiring for this combination jack is as follows: 1/4" Tip = signal +, Ring = signal –, Sleeve = signal ground; XLR pin 1=signal ground, pin 2=signal +, pin 3=signal –.

2. MAIN: Adjusts the signal level of each channel, which proportions the signals sent to the Master section for a well balanced mix.

3. LOW: Adjusts each channel's low frequency output. The center position is "flat," that is, no boost or cut. Turning the control counter-clockwise reduces the low frequency output; turning it clockwise increases the low frequency output. This control provides 15dB of boost or cut at 80Hz and primarily affects the notes you "feel" such as those from a bass guitar or kick drum.

4. HIGH: Adjusts each channel's high frequency output. The center position is "flat," that is, no boost or cut. Turning the control counter-clockwise reduces the high frequency output; turning it clockwise increases the high frequency output. This control provides 15dB of boost or cut at 10kHz and primarily affects the "crispness" of the sound.

5. REV/EFF: Adjusts the amount of reverb/digital effect sent to the internal effects processor. In its full counter-clockwise position the signal will be "dry" (without any reverb/effect). As you turn the control clockwise the amount of reverb/effect increases. This control is post-EQ and post-Main.

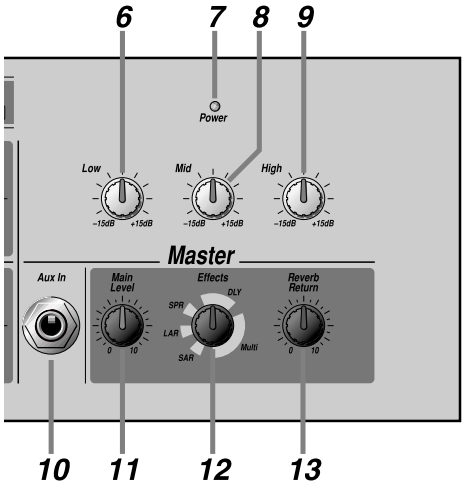
MASTER SECTION:

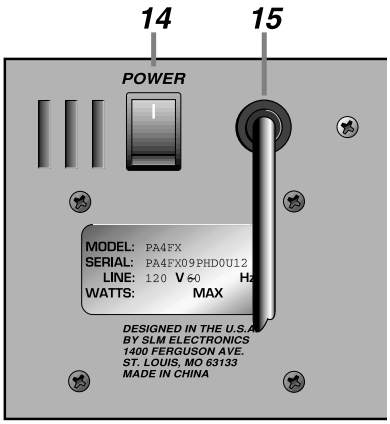
The Master tone controls serve as a three-band EQ to adjust the output of the mixer to compensate for room acoustics or to fine tune the overall sound. The Low control is useful to reduce boominess. The Mid control greatly enhances the vocals and helps control feedback. The High control helps compensate for heavily draped, acoustically absorbent rooms, or bare walled, acoustically reflective rooms, and can be used to help control feedback.

6. LOW: Adjusts the mix's low frequency output. The center position is "flat," that is, no boost or cut. Turning the control counter-clockwise reduces the low frequency output; turning it clockwise increases the low frequency output. This control provides 15dB of boost or cut at 50Hz.

7. POWER LED: This LED illuminates when the unit is plugged in and turned on. (If the LED does not illuminate when you turn on the power switch, check for a good connection to the power outlet.)

REAR PANEL:





8. MID: Adjusts the mix's midrange level. The center position is "flat," that is, no boost or cut. Turning the control counter-clockwise reduces the midrange output; turning it clockwise increases the midrange output. This control provides 15dB of boost or cut at 600Hz.

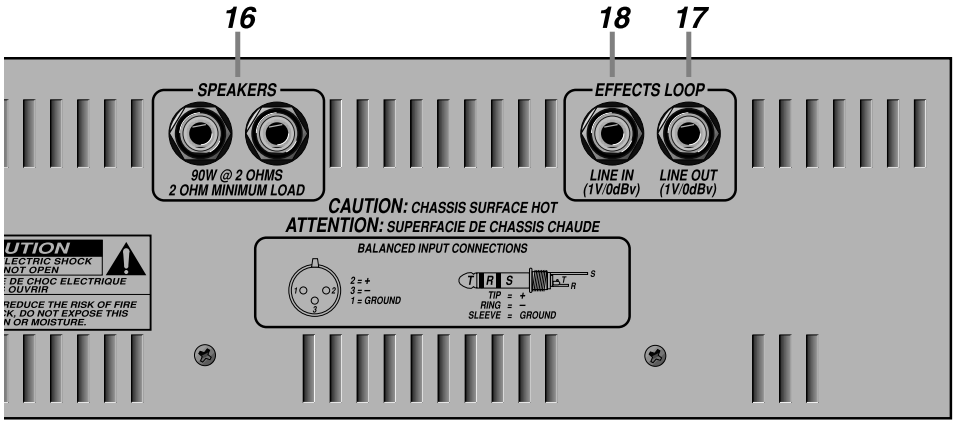
9. HIGH: Adjusts the mix's high frequency output. The center position is "flat," that is, no boost or cut. Turning the control counter-clockwise reduces the high frequency output; turning it clockwise increases the high frequency output. This control provides 15dB of boost or cut at 10kHz.

10: AUX IN: Adding an external signal source, such as a CD player, tape deck or similar device can be accomplished by simply by plugging the OUTPUT of the unit into this jack. The jack is a mono 1/4" input which means that a stereo signal will have to be mixed down to a mono signal by using an appropriate summing device. The Aux In signal is pre-Master EQ and pre-Master Level.

11: MAIN LEVEL: Adjusts the level of the mix sent to the unit's internal power amplifier. To reduce the risks of overdriving the amp, this control should be run at a setting near the 1 or 2 o'clock position. This will insure sufficient headroom to handle any large peaks (and therefore extreme power demands) in the program material.

12. EFFECTS: Choose which of Crate's on-board digital effects you want added to the signal with this control. (See "About the Digital Effects" on page 4.)

13. REVERB RETURN: Adjusts the level of the signal returned to the master section from the internal effects processor. In its full counter-clockwise position the output signal will be "dry" (no reverb/effect at all). As you bring the control clockwise you increase the amount of reverb/effect as determined by the settings of each channel's Rev/Eff controls. This control is pre-Master EQ and pre-Master Level.



14. POWER: This heavy-duty, rocker-type switch is used to turn the mixer ON when the top of the switch is depressed, OFF when the bottom of the switch is depressed. The front-panel "POWER" LED (#7) will illuminate when the power is on.

15. POWER CORD: This heavy-duty, grounded, three wire power cord is to be plugged into a safely-wired, grounded, 120 volt, 60 cycle, AC power outlet. DO NOT attempt to defeat the ground connection of this cable! If your mixer was purchased outside of the United States, see the unit's rear panel for its power rating and follow the above guidelines.

16. SPEAKER OUTS: Using a 1/4" mono phone plug, connect the output of the mixer to your speaker cabinets with these jacks. Be sure to use heavy gauge speaker cable – NOT instrument patch cords – for these connections. The jacks are wired together in parallel.

NEVER CONNECT THE MIXER TO ANY COMBINATION OF SPEAKERS THAT HAVE A TOTAL IMPEDANCE BELOW 2 OHMS!

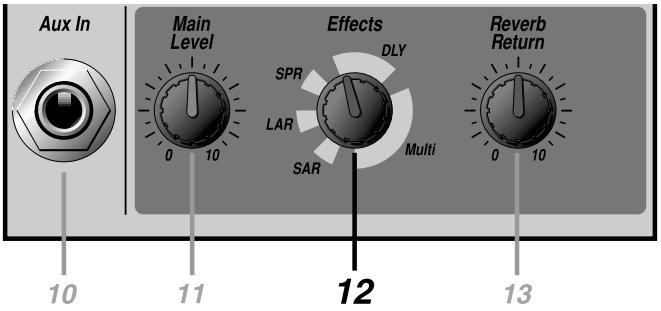
The chart to the right can help you determine the total impedance when connecting various combinations of speakers in parallel.

SPKR IMP.	# OF SPKRS	TOTAL IMP.
4 ohms	2	2 ohms
8 ohms	2	4 ohms
8 ohms	4	2 ohms
16 ohms	2	8 ohms
16 ohms	4	4 ohms
16 ohms	8	2 ohms

17. EFFECTS LOOP LINE OUT: Connecting an external signal processor, such as a digital delay or echo, can be accomplished through the Line In and Line Out jacks. Connect the Line Out jack to the INPUT of the device using a shielded cable with mono 1/4" phone plugs. This sends a line level signal ***OUT*** from the mixer. The Line Out jack is post-Master EQ and post-Master Level, therefore its tone and output level are governed by the setting of the Master controls. The Line Out jack may also be used to connect to a tape deck or external power amplifier and does not interrupt the signal going to the power amplifier.

18. EFFECTS LOOP LINE IN: Connect the OUTPUT of an external signal processor to the Line In jack using a shielded cable with mono 1/4" plugs. This connects the line-level signal ***IN*** directly to the mixer's internal power amplifier. The Line In jack is post-Master EQ and post-Master Level.

ABOUT THE DIGITAL EFFECTS:

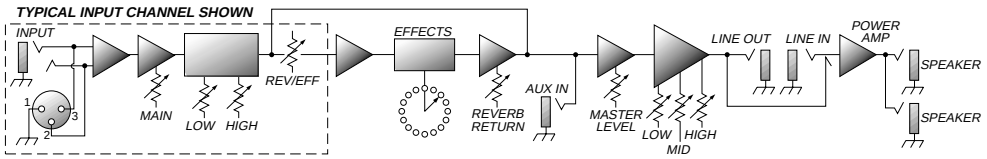


The PA4FX features Crate's On-Board *Digital Signal Processing* (**DSP**) technology that was designed specifically for use with instruments and vocals. This provides a large selection of digital reverbs, effects and delays. Select the type of effect desired by rotating the Effects control (#12). This control is divided into five sections: Small Area Reverbs (**SAR**), Large Area Reverbs (**LAR**), Special Reverbs (**SPR**), Delays (**DLY**) and Multiple Effects (**Multi**).

The following chart provides a list of the **DSP** settings along with a brief description of each effect.

SAR:	**Small Room**	8' x 8' empty room w/hardwood floor
	Small Rehearsal Hall	20' x 40' hall, wood floors, hard walls
LAR:	**Large Hall**	50' x 100' hall, about 50 persons
	Concert Hall	5000-seat hall, full crowd
SPR:	**Plate Reverb**	Simulates studio steel plate reverb
	Spring Reverb	Simulates multi-spring reverb tank
DLY:	**Slapback, short**	125ms delay + reverb
	Slapback, Med-short	240ms delay + reverb
	Slapback, Medium	350ms delay + reverb
	Slapback, Long	557ms delay - 630' travel time
Multi:	**Short Med. Surface**	280ms delay w/21.8% regen + reverb
	Medium Hard Surface	335ms delay w/26.5% regen + reverb
	Chor-Delay	400ms delay with modulation
	Chor-Verb	Hall reverb w/modulated pre-delay
	Slap-Verb	Medium hall w/200ms pre-delay
	Instrument Doubler	Simulates second track slightly out-of-sync

SYSTEM BLOCK DIAGRAM:



PA4FX Powered Mixer

TECHNICAL SPECIFICATIONS:

Output Power Rating		60 watts RMS @ 5% THD, 4 ohm load, 120VAC (2 ohm minimum load)
Channel EQs	Low High	30dB range @ 80Hz 30dB range @ 10kHz
Master EQs	Low Mid High	±15dB @ 50Hz ±15dB @ 600Hz ±15dB @ 10kHz
Input Impedance	1/4” XLR	22k ohm 3.5k ohm
Input Sensitivity	1/4” XLR Aux In	165mV RMS 35mV RMS 650mV RMS
Max. Input Signal	1/4” XLR Aux In	10V RMS (28V peak-to-peak) 1.5V RMS (4.25V peak-to-peak) 10V RMS (28V peak-to-peak)
Effects Loop	Line Out/Line In	1V RMS
Size and Weight		6-1/4”H x 18-1/2”W x 8-1/2”D 19 lbs.

Crate continually develops new products, as well as inproves existing ones. For this reason, the specifications and information in this Crate manual are subject to change without notice.

The PA4FX is covered with a durable, high quality carpet-like material. Brush clean as needed. Never spray cleaning agents onto the cabinet. Avoid abrasive cleansers which would damage the finish.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

ATTENTION
RISQUE D'ELECTROCUTION
NE PAS OUVRIR

ATTENTION: POUR REDUIRE D'ELECTROCUTION NE PAS ENLEVER LE COUVERCLE. AUCUNE PIECE INTERNE N'EST REPRABLE PAR L'UTILISATEUR. POUR TOUTE REPARATION, S'ADRESSER A UN TECHNICIEN QUALIFIE.

VORSICHT
ELEKTRISCHE SCHLAGGEFAHR
NICHT OFFENEN

VORSICHT: ZUR MINIMIERUNG ELEKTRISCHER SCHLAGGEFAHR NICHT DEN DECKEL ABENHMEN. INTERNE TEILE KONNEN NICHT VOM BENUTZER GEWARTET WERDEN. DIE WARTUNG IS QUALIFIZIERTEM WARTUNGSPERSONAL ZU UBERLASSEN.

THIS EQUIPMENT HAS BEEN DESIGNED AND ENGINEERED TO PROVIDE SAFE AND RELIABLE OPERATION. IN ORDER TO PROLONG THE LIFE OF THE UNIT AND PREVENT ACCIDENTAL DAMAGES OR INJURY, PLEASE FOLLOW THESE PRECAUTIONARY GUIDELINES:

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN CHASSIS; DO NOT DEFEAT OR REMOVE THE GROUND PIN OF THE POWER CORD; CONNECT ONLY TO A PROPERLY GROUNDED AC POWER OUTLET.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION: NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION: OUR AMPLIFIERS ARE CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS. CONTINUED EXPOSURE TO HIGH SOUND PRESSURE LEVELS CAN CAUSE PERMANENT HEARING IMPAIRMENT OR LOSS. USER CAUTION IS ADVISED AND EAR PROTECTION IS RECOMMENDED IF UNIT IS OPERATED AT HIGH VOLUME.

EXPLANATION OF GRAPHICAL SYMBOLS: = "DANGEROUS VOLTAGE" = "IT IS NECESSARY FOR THE USER TO REFER TO THE INSTRUCTION MANUAL"

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