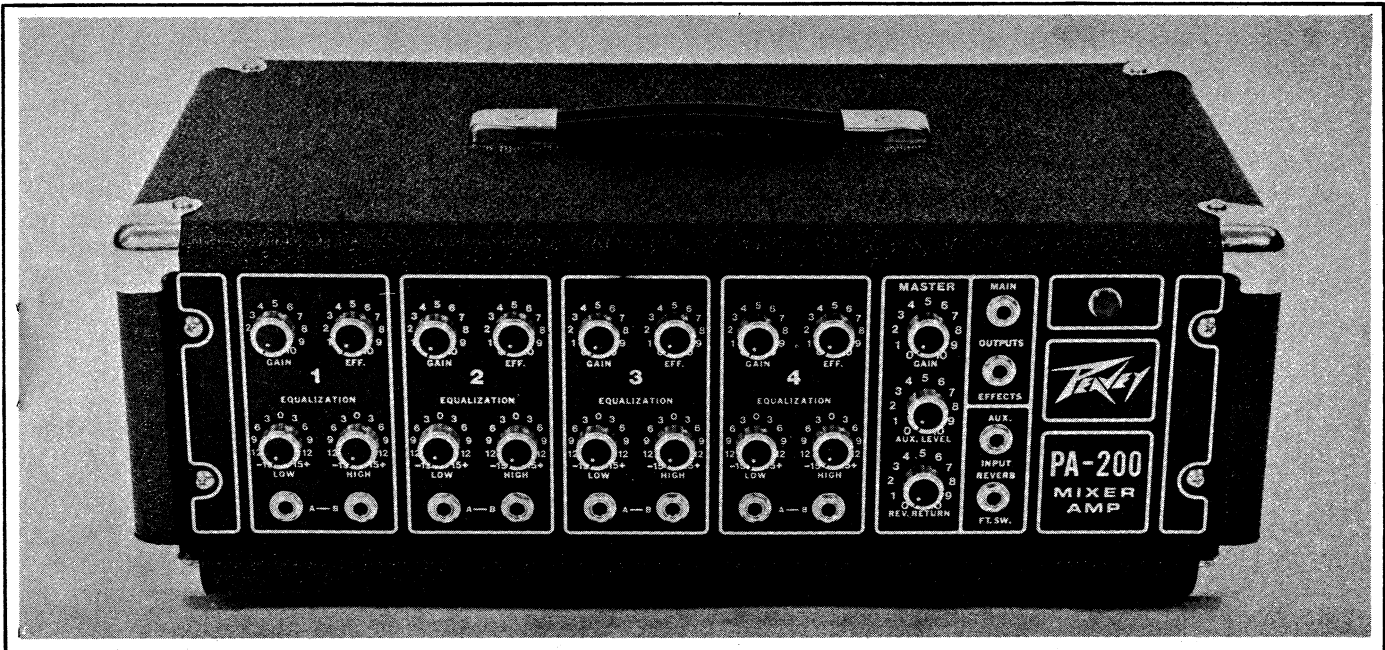


PA 200

MIXER AMP

OWNER'S MANUAL



POWER AMPLIFICATION SECTION:

200 MODULE

Output Power @ 1 kHz @ 117 VAC Line:

1. Rated Power: 100 W RMS @ Rated Load: 4 Ohms
2. Power vs. Distortion:

LOAD IMPEDANCE	8	4	OHMS
OUTPUT @ 1% THD	60	90	W
OUTPUT @ 5% THD	70	100	W

Peak Output @ Rated Load: 7 Amps & 28 Volts, 200 Watts

Music Power Output @ Rated Load: 130 Watts RMS @ 1% THD

Frequency Response: 3 dB Down @ 50 Hz & 15 kHz

Sensitivity @ Rated Power & Load: 300 mV

Input Impedance: 22 k Ohms

PRE-AMPLIFIER SECTION:

Input Characteristics: (Tone Controls Flat, Volume @ Maximum, Master @ 12:00)

1. Sensitivity: 4 mV @ 1 kHz
2. Input Impedance: 100 k Ohms Unbalanced
3. Noise: 56 dB (Open Circuit), 60 dB (50 k Ohms), 66 dB (Short Circuit)

Distortion @ 1 kHz @ Rated Output: Less than 0.1% THD

Frequency Response: 3 dB Down @ 40 Hz & 20 kHz

Tone Controls: ± 15 dB @ 50 Hz & 10 kHz

Reverb/Effects Send Control: Continuously variable each channel

MASTER SECTION:

Reverb Return Control: Continuously variable with footswitch cut-off

Main/Monitor Output Level: 2.0 V RMS into 10 k Ohms

Effect Output Level: 1.0 V RMS into 10 k Ohms



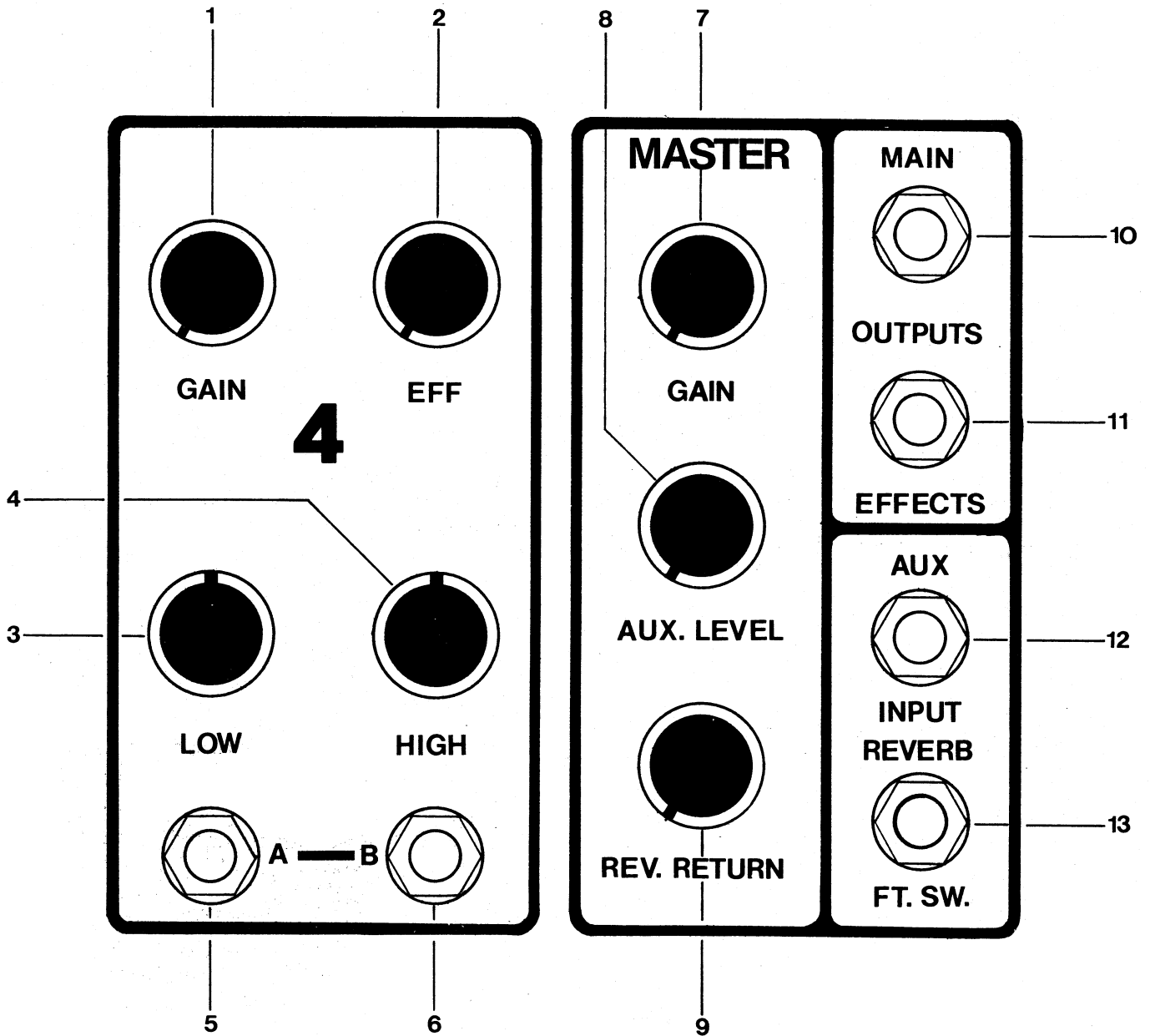
on each of the channels have adequate control variation.

It is possible to use the internal reverb unit and, at the same time, provide an output signal for an external effects or echo unit from the effects output jack (11). The output or return signal from this external effect unit may be connected to the auxiliary input (12) and controlled by the auxiliary level control (8).

10. The **main output jack** provides a signal out from the main mixing amplifier. This output may be used to patch into other mixers or power amplifiers and may be used as a tape recording output. This output pro-

vides approximately 1.0 V R.M.S. at 10 k Ohms output impedance. This output is not suitable to drive headphones.

11. The **effects output jack** provides an output signal from the effects mixing buss. The signal mix from the effects buss is simultaneously applied to the effects output jack, and the reverb drive amplifier. This effects out jack may be used for supplying a mixed down signal to external effects or echo units or may be used as a monitor output if the reverb is cut off by using the footswitch jack. Remember that the mix as well as the output level is controlled by the settings of the channel effects send controls.



The new PA-200 is a compact portable sound reinforcement MIXER/AMPLIFIER featuring a rugged 100 Watt power stage. This compact but powerful unit is capable of handling most any club or lounge performance, as well as the smaller concerts. Because of the super heavy duty silicon output devices and the large aluminum heat-sink, the PA-200 has the extra measure of durability required for demanding commercial applications.

The PA-200 is a four channel mixer/amplifier with the capability of handling up to eight microphones or instruments because of its extremely wide dynamic range. Each channel of the 200 features separate volume, low and high equalization, and effects controls to enable the operator to control each microphone or instrument's tone and response characteristics. The master section of the PA-200 provides controls for added flexibility. These master controls enable the operator to more fully control the output in order to create a more balanced sound. The reverb effect is controllable from the optional remote footswitch.

1. The **gain control** serves to vary the gain of the preamp. The preamps of the new 200 PA are of the variable feedback type which allows lowest noise and maximum performance.

2. The **effects send control** determines the amount of signal from each channel mixed into the effects/reverb system. This control is used to determine the amount of drive to the internal reverb unit as well as determining the amount of signal delivered to the effects output jack (11).

3. The **low equalization control** determines the low frequency response of the individual channel. The 200 PA low control is a type of electronic crossover which acts as a volume control for the low frequencies. Because of the design of this control, it is possible to obtain both low boost and cut. The vertical position (0) will yield a flat response. Clockwise operation results in a boost and counter-clockwise operation results in a cut.

4. The **high equalization control** determines the high frequency response of the individual channel. The high control is part of an electronic crossover and functions as a volume control for the high frequencies. The vertical (0) position yields flat response, while clockwise settings boost highs and counter-clockwise settings yield a high cut.

5,6. Each channel of the PA-200 is equipped with two input jacks which are connected in a unique circuit that allows a wide range of inputs to be handled. When only one microphone is used, the "A" input jack is more sensitive than the "B" input jack. This high and low gain feature enables optimum microphone matching. If a high output microphone is overloading the sensitive "A" input, simply reconnect this mike into the low gain "B" jack. When two inputs are used in each channel, the input circuit automatically balances to equalize the gain in both jacks. This simple, but effective, switching system gives the user much greater flexibility in choice of input sensitivities and overload protection.

MASTER SECTION

The PA-200 master section contains the necessary controls to enable the user to obtain overall control of the mixing functions as well as providing an additional clear channel to enable use of an additional mic or effects unit. A complete patch panel is provided for using the PA-200 in conjunction with other equipment.

7. The **master gain control** controls the level of the master mixer by use of variable negative feedback. The use of active mixing allows your PA-200 Mixer/Amplifier to perform as well as many studio mixing consoles. This method is the same used on the latest recording mixers and yields the least distortion and noise than any other method. The master gain sets the level for the entire system. The master gain should be set approximately in the middle position (4-6), and fine adjustment in volume should be made with the individual controls on each channel.

8. The **auxiliary level control** is a clear channel input that is capable of handling either a microphone or outputs from effects units. This auxiliary channel feeds into the main mixing buss and is actually an additional unequalized input channel. The auxiliary input (12) is the jack associated with this control. This channel is ideal for use with echo or effects units with the signal for these being derived from the effects output jack.

9. The **reverb return** is the control that determines how much of the delayed (reverb) signal is blended back into the master mixer. The reverb return level control must be turned up before any reverb effect is heard at the output. The reverb return level should be set so that the individual effects send controls

12. The **auxiliary input jack** is the input to the clear channel provided in the PA-200 for use with additional mics or external effects/echo units. This input works in conjunction with the auxiliary level control (8) and feeds into the main mixing buss.

13. The **reverb footswitch jack** provides a method for reverb cutoff by use of the optional remote footswitch. Any footswitch with the proper plug (standard phone plug) and a shielded cable will work with this jack. In the event you should decide to use the effects mixing buss for monitor, the reverb unit may be shut off by use of this feature.

14. The **pilot light** indicates when power is applied to the amplifier.

15. The **three wire line cord** has been provided for your protection and should be connected to the proper line voltage as indicated on the back panel. **DO NOT REMOVE THE GROUND PIN ON PLUG.**

16. The **fuse** is located within the cap of the fuse holder and should be replaced with one of the proper value if it should fail. It is necessary that the proper value fuse be used to avoid damage to the equipment and to avoid voiding the warranty. Models that have circuit breakers can be reset by depressing the red button. If the breaker trips repeatedly, take the unit to a qualified service center for inspection.

17. The **line power switch** is of the three position type with the center position being off. The three position switch has two on positions which are used to ground the amplifier properly. One of the on positions will

yield the least hum or popping when the microphone is touched, and this is the position that should be used. Export models have two position on/off switches and polarity information above is to be disregarded.

18. The **speaker output jacks** are designed to be used with a total load of FOUR OHMS. Speaker systems of higher impedance can be used with a slight loss in output power. Speaker systems with less than a total of four Ohms can be used with the risk of overloading the power amplifier. Slightly less power will be delivered to lower impedances because of the unique limiting action of our integral protection system. The power amplifier is built on a large aluminum heatsink to cool the output devices. A thermostat is connected to this heatsink to shut the system down in case of overheating. Low speaker impedances tend to cause the amp to run hotter than normal, and could cause the automatic cutoff to operate if the output stage becomes hot enough to endanger the output devices. The thermostat is self-resetting and normal operation will be restored when the unit reaches safe operating temperatures. If thermal shutdown is apparent, then you are overloading the system and continued use in this manner will damage the system. Never use less than a four Ohm total load on the 200 module. The output voltage available from this unit is approximately 22 V R.M.S. into four Ohms with proper AC line input.

19. The **large line cord retainers** on the rear panel are provided for your convenience in storing the AC line cord during transport of the unit.



Printed in U S A
Part No. 80361028

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