# **Owner's Manual**

# **PM6200** Professional Powered Mixer





# WARNING

- 1. Read these instructions All the safety and operating instructions should be read before this product is operated.
- Retain these instructions The safety and operating instructions should be retained for future reference.
- Heed all warnings All warnings on the appliance and in the operating instructions should be adhered to.
- Follow all instructions All operating and use instructions should be followed.
- Do not use this apparatus near water The appliance should not be used near water or moisture - for example, in a wet basement or near a swimming pool, and the like.
- 6. Clean only with dry cloth.
- 7. Do not block any ventilation openings. Install in accordance with the manufacture's instructions.
- 8. Do not install near any heat sources such as radiators, heat registers,stoves,or other apparatus (including amplifiers) that produce heat.
- 9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the ther. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
- 11. Only use attachments/accessories specified by the manufacturer.
- 12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used,use caution when moving the cart/apparatus combination to avoid injury from tip-over.



13. Unplug the apparatus during lightning storms or when unused for long periods of time.

- 14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15. Please keep the unit in a good ventilation environment.
- 16. WARNING:To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall not be placed on apparatus.
- 17. WARNING: The mains plug or appliance inlet is used as disconect device, the disconnect device shall remain readily operable.
- 18. Power Sources This product should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply to your home, onsult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer the perating instructions.
- 19. Safety Check Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- 20. Don't touch conductive parts of output terminals to prevent hazardous electrical shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready made leads or cords.
- 21. This equipment is for commercial & professional use only
- 22. This product is in compliance with EU WEEE regulations. Disposal of end of life produc should not betreated as municipal waste. Please refer to your local regulations for instructions on proper disposal of this product.



23. To prevent hazardous electrical shock, do not touch the conductive parts of the output terminals. The external wiring connected to the terminals requires installation by an quallified technician or the use of ready made leads or cords.

Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.



This lightning flash is intended to alert the user to the presence of non-insulated "dangerous voltage" on the output terminals that may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.





CAUTION: To reduce the risk of electric shock, do not remove any cover. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of suf ficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.

**CAUTION:** To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

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# Introductions

# PM6200

# **Professional Powered Mixer**



# Welcome

A personal welcome to you from the management and employees of HPA.

All of the co-workers here at HPA are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products. We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to HPA, and thank you for becoming part of our worldwide extended family!

# Unpacking

Although it is neither complicated to install nor difficult to operate your set, a few minutes of your time is required to read this manual for a properly wired installation and becoming familiar with it's many features and how to use them. Please take a great care in unpacking your set and do not discard the carton and other packing materials. They may be needed when moving your set and are required if it ever becomes necessary to return your set for service. Never place the unit near radiators, in front of heating vents, to direct sun light, in excessive humid or dusty location to avoid early damage and for your years of quality

entertainment. Connect your complementary components as illustrated in the following page.

# **Features**

## -SIX INPUTS WITH TWO CHANNEL POWERED MIXER

Six Mono inputs, plus a 200W 2 Channel amplifier (400W in bridged mono mode).

# -MODE SELECT FOR BRIDGED MONO

Amp1 and Amp2 can be bridged together to provide 400 watts of power to a single loudspeaker

## -VERSATILE EQ CONTROLS

Three-band EQ on each input channel, plus seven-band graphic EQ on main output.

## - DSP FUNCTION : 100 SELECTABLE PRESETS

A built-in 24bit DSP(Digital Signal Processor ) with 100 selectable presets including Reverb, Delay and Chorus, offers dazzling studio quality effects.

# - PHANTOM POWER(+36V)

Phantom power is provided for easy connection of condenser microphones requiring an external power supply.

# - KICKBACK ENCLOSURE

## **1. CHANNEL CONTROL SECTION**



#### (1). EQ CONTROLS

These knobs provide continuous control of parametric EQ for the Input Channels. Three bands of equalization are provided: Low (80Hz), ±15dB,shelving type Mid (2.5kHz), ±12dB, peak type,High (12kHz), ±15dB, shelving type

#### (2). MONITOR CON-TROLS

These knobs provide continuous control of the level sent to the Monitor bus. The Monitor bus signal is sent to the Monitor Amp jacks in the Input/Output section.

If the Power Amp Select Switch (20) is set to the MAIN+MONITOR position, the signal is also sent to the Power Amp 2 jacks. The Monitor bus signal is pre-level volume, and is unaffected by the channel's Level Control (4).

## (3). EFFECTS CONTROLS

These knobs provide continuous control of the level sent to the Effects bus.

The Effects bus signal is sent to the internal DSP, and to the EFX Output.

The Effects output signal is post-level volume, and is directly affected by the channel's Level Control (4).

## (4). LEVEL CONTROLS

These knobs provide continuous control of the associated channel's output signal level.

## (5). PAD SWITCHES

These switches attenuate the input signal by –20dB. Activate this switch when connecting a line-level source to the associated channel, or when the input signal is distorted.

## 2. 24BIT DIGITAL EFFECT SECTION



# (6). EFX ON SWITCH

The EFX On switch is used to turn the internal Digital Effect on and off. The effects are by-passed whe the switch depressed and the display shows two.

(7). DSP PROGRAM SELECT SWITCH

The program knob selects one of the 100 built-in digital effects, for each number you select. 24 Bit Digital Effects processor with high quality, studio grade effects like Delay, Chorus and Reverb.

## (8). EFX LEVEL CONTROL

The EFX LEVEL control used to send the effect mix bus to an external effect device connected to the AUX2 SEND jack.

## 3. AUX IN AND TAPE IN SECTION



(9). AUX IN CONTROL

This knob provides continuous control of the level of signal sent from the Aux In jacks to the Main bus.

(10). TAPE IN CONTROL

This knob provides continuous control of the level of signal sent from the Tape In jacks to the Main bus.

(11). TAPE TO MONI-TOR SWITCH

When this switch is on, the signal of TAPE IN will be sent to the MONITOR bus.

## 4. MONITOR CONTROL SECTION



## (12). MONITOR OUTPUT LEVEL DISPLAY

This LED meter indicates the amount of signal sent to the MONITOR OUT jack. (Input/Output Section, Page 7)

### (13). MONITOR GRAPHIC EQUALIZER

Each slider controls the cut (decreased gain) or boost (increased gain) for its associated frequency band to the MONITOR bus. The middle position indicates flat response (no cut or boost). Moving the slider up increases that frequency's gain, while moving it down decreases the level of that frequency. The Monitor Graphic Equalizer affects both the Monitor bus signal that is output to the Monitor Amp and the line level signal output to the Monitor Out jack in the Input/Output section.

#### (14). MONITOR EFX RETURN CONTROL

This knob provides continuous control of the amount of built-in digital reverb sent to the MONITOR bus.

#### (15). MONITOR MASTER CONTROL

This knob provides continuous control of the level of the MONITOR bus sent to both the Monitor Amp and the MONITOR OUT jack. (Input/Output Section, Page 7)

#### **5. MAIN CONTROL SECTION**



#### (16). MAIN OUTPUT LEVEL DISPLAY

This LED meter indicates the amount of signal sent to the Main jack. (Input/Output Section,Page7)

#### (17). MAIN GRAPHIC EQUALIZER

Each slider controls the cut (decreased gain) or boost (increased gain) for its associated frequency band to the Main bus. The middle position indicates flat response (no cut or boost). Moving the slider up increases that frequency's gain, while moving it down decreases the level of that frequency.

The Main Graphic Equalizer affects the Main bus signal that is output to the Main Amp and the line level signal output to the Main Out jack in the Input/Output section.

(18). MAIN EFX RETURN CONTROL

This knob provides continuous control of the amount of signal returned from built-in digital reverb to the Main bus.

#### (19). MAIN MASTER CONTROL

This knob provides continuous control of the level of the Main bus sent to both the Main Amp and the Main OUT jack. (Input/Output Section, Page 7)

#### 6. POWER AMP SECTION



#### (20). AMP SELECT SWITCH

This switch selects between three output mode settings for the power amp.

## MAIN-MONITOR

The Main and Monitor sections are used independently. The MAIN bus signal is output from POWER AMP 1 output, and the MONITOR bus signal is output from POWER AMP 2 output.

#### MAIN-MAIN

The MAIN bus signal is output from POWER AMP1 output, and from POWER AMP 2 outputs.

#### MAIN BRIDGE

The two power amp channels are bridged. Only the MAIN bus signal is output from the BRIDGE jack.

#### 7. PHAMTOM POWER SWITCH AND POWER LED



#### (21). POWER LED

This LED indicator is lit when the PM6200 is turned on.

#### (22). PHANTOM POWER SWITCH

This switch activates the phantom power supply for channels 1-6. When the switch is turned on, +36VDC power is supplied to pins 2 and 3 of each channel's input connector. Use phantom power when connecting condenser microphones, which require an external power supply.

**NOTE:** It is safe to connect most modern dynamic microphones or line level devices to the channel inputs when phantom power is activated. However, some older ribbon microphones may be damaged by phantom power, and certain unbalanced line level devices may malfunction or produce an audible hum when phantom power is active.

## 8. INPUT/OUTPUT CONNECTORS



#### (1).CHANNEL INPUT JACKS

#### MIC JACKS

A 3-pin XLR-type connector is used for balanced low impedance microphone inputs.(1: ground, 2: hot, 3: cold)

#### BALANCED LINE IN JACKS

A standard 1/4" phone jack is used for balanced or unbalanced line level signals. Examples of line level signals include most electronic keyboards, synthesizers, turn-tables(with appropriate pre-amps), tape decks and the line outputs from other mixers.

**NOTE:** When phantom power is turned on, +36V power is sent to the 3-pin XLR jacks of ALL six channels (1-6). To avoid damaging LINE devices, be sure sources not requiring phantom power are connected only to the LINE input 1/4" phone jacks.

#### (2). EFFECT (EFX) OUTPUT JACKS

Connect this to the input of an external effects processor.

The Effect Control on each Channel Input determines the level of signal sent to the Effect bus. The Effect Out Control in the Effect Section determines the amount of signal returning from the Effect Bus.

#### (3). FOOT SWITCH JACK

Connecting an on/off foot switch here will provide on/off control of the built-in digital reverb. The Digital Effect switch on the front panel must be in the "ON" position.

#### (4). EXTERNAL INPUT JACKS

Connect line level devices such as effects processors to the Aux In jack, and stereo devices such as CD or cassette decks to the Tape In jacks.

#### (5). EXTERNAL OUTPUT JACKS

These outputs send line level signals to external devices:

Rec Out: These are unbalanced outputs on RCA jacks, for connection of an external recording device. The output signal is pre-EQ and pre-Master output level control.

Monitor Out: This is an unbalanced 1/4" phone jack, for connection of a separate monitor speaker.

Main Out: These are unbalanced 1/4" phone jacks, for connection of the main output speakers. The signal is post-EQ and post-Master output level control.

# **Rear Panel Controls**



#### 1. SPEAKER OUTPUT JACKS

The PM6200 contains a two-channel power amp. The two channels can be used independently to supply 200W+200W, or bridged to provide 400W output power.

**NOTE:** Use the front panel MODE switch to select which signal is sent to the speaker output jacks, and to activate BRIDGE mode

If the two power amplifiers are used for MAINS operation, two 8 ohm speakers can be "daisy-chained' together and connected to the AMP 1 jack, and two more 8 ohm speakers can "daisy-chained" together and connected to the AMP2 jack, for a total of four speakers.See the diagram on page 9.

The total impedance load for each amplifier must not be less than 4 Ohms, therefore in the example above, two speakers with an impedance of 8 ohms each are connected to each amp's output jacks.

If you wish to use two amplifiers independently, let's say for Main and Monitor operation, use a 4 through 8 ohm speaker. Again the total impedance load for each amplifier must not be less than 4 ohm. Therefore two speakers with impedance of 8 ohms can be "daisy-chained" together and then connected each amp's output jacks.

If the two amplifiers are use in a BRIDGE more, only one speaker can be connected to the BRIDGE jack. The total impedance load while operating in Bridge mode must not be less than 8 Ohms. If you are connecting a speaker to the BRIDGE jack, use an 8 through 16 Ohm speaker.

CAUTION: When using a bridge connection, do not connect anything to the AMP1 and AMP2 jacks. Likewise, when using the POWER AMP1 and POWER AMP2 jacks, do not connect anything to the BRIDGE jack.

#### 2. POWER SWITCH

This switch is used to turn the unit on and off. When the unit is on, the front panel Power Indicator LED is lit.

# Connections

CAUTION: When connecting devices to your PM6200, avoid using non-standard plugs and cables.

# -SPEAKER CONNECTION

The diagram below presents three approved PM6200 speaker setups. Please take notice of the speaker impedance ( $\Omega$ ) requirements of each and be careful to avoid impedances lower than those specified.



# **BRIDGE CONNECTION**



# **Basic Operation**

# -CONNECTING MICS, INSTRUMENTS AND DEVICES

- 1. Turn off any powered instruments, mics, or devices before connecting to your PM6200. Also be sure to turn down all channel and main output levels before making connections.
- 2. Connect cables to your mics, instruments, and devices before inserting the other end firmly into the appropriate 3-pin XLR or 1/4" high phone jacks on channels 1-6. For proper signal level, turn on the PAD switch when connecting line level devices to channels 1-6 and please note the low(mic) and high(line) impedance inputs cannot be used simultaneously.
- 3. Turn devices on in the order they are connected to your PM6200. Reverse the order when turning power off.
- 4. Set the Main section's Master control to the nominal position.
- 5. To set correct input channel levels, adjust the Input Channel Level control so that the "0" LED of the Main section's peak level meter illuminates intermittently.
- 6. Rotate the Input Channel EQ knobs to change that channel's tone.
- 7. Use the Main section's Master control and Graphic EQ to adjust the overall volume and tone.

# -CONNECTING MICS, INSTRUMENTS AND DEVICES

- 1. After setting levels and adjusting EQ, press the DSP ON switch in the DSP section.
- 2. Using the Effect Select switches in the DSP section, select a reverb most appropriate for all the mics and/or instruments connected. Your one hundred choices are:

0 - 9	Performance
10 - 19	Hall Reverb
20 - 29	Plate Reverb
30 - 39	Spring Reverb
40 - 49	Echo
50 - 59	Flange + Verb
60 - 69	Chorus + Verb
70 - 79	Echo + Verb
80 - 89	Chorus
90 - 99	Flange

- 3. Turn up the Input Channel's EFX control on the channels you want reverb, until the desired amount of reverb is heard.
- 4. Using the Main/Monitor section's EFX RTN knob, adjust the total amount of reverb now returning from the built-in digital reverb.

*NOTE:* If the reverb's sound is distorted even with the EFX RTN turned all the way down, you will need to lower the EFX level of one or more channels.

# **Examples Setup**

This section provides some ways in which the PM6200 can be used, and explains connections and operation.

## As a conference PA system/installed sound system

Here is an example of using the PM6200 as a conference PA system or as installed sound system



# Connection

#### Connect mics to channels 1-6.

If you wish to use an external device such as a CD player or MD player, connect the outputs of the device to the TAPE IN jacks of the PM6200.

If you wish to record the audio to a cassette deck, connect the TAPE OUT jacks of the PM6200 to the input jacks of the cassette deck.

Connect the main speakers to the AMP1 and AMP2 jacks then set the power amp select switch to "MAIN-MAIN".

#### To Play Back a CD player

1. Turn the power on to the CD player and then to the  $\mathsf{PM6200}.$ 

2. Set the MAIN section's MASTER control to the nominal position.

3. Begin CD playback.

Adjust the level coming from the CD player with each CHANNEL level control such that the 0 LED of the MAIN section's peak level meter illuminates intermittently

# As a band PA

Here is an example of using the PM6200 as a small PA for a band. In this example, the monitor speakers are being sent a mix that is independent of the MAIN speaker mix. An external effect such as delay or reverb is also being used.

# Connections

Connect mics or instruments, such as keyboards, to the channel input jacks 1-6.

Connect the main speakers to the AMP1 jack, and connect the monitor speaker to the AMP2 jack. Then, set the power amp select switch to "MAIN-MONITOR."

If you will be using an external effect such as delay or reverb, connect the PM6200's EFFECT OUT jack to the input jack of the external effect, an connect the output jack of the external effect to the PM6200's AUX IN jack.



### Sending an Independent Mix to the Monitor Speakers

-Set the Monitor section's Master control to the nominal position.

-Using the MON controls, adjust each channel's level. This creates your independent monitor mix.

-Use the Graphic Equalizer and the Master controls of the Main/Monitor sections to adjust the overall tone and volume.

#### **TIP: USING AN EXTERNAL EFFECT**

-Set the Monitor section's Master control to the nominal position.

-Using the EFX controls on the desired channels, adjust the amount of effect applied to each channel.

-Adjust the input level of the external effects device so it gets enough level but doesn't distort.

-Use the PM6200's AUX IN control to adjust the level returning from the external effects device to the M6200's effects buss.

# Installing an optional rack mount kit

You can rack-mount the PM6200 using an optional rack mount kit(RK-88).

Rack mount kit PK-88 \*Bracket x 2

\*Screw x 6



# Installing the rack mount bracket

1.Remove the carrying handle by loosening and removing four screws.



2.Attach one of the rack mount brackets to the side of the PM6200 using three included screws.



3.Attach the other rack mount bracket in the same way.



# **Block diagrams**



# **Specifications**

# \*0dB=0.775Vrms, 0dBV=1VRMS -General Specifications

Maximum Output power	200W + 200W/4Ω@ 1% THD at 1khz
	400W/8 Ω1% THD at 1khz(BRIDGE)
T.H.D	<1% @ 200W output into 4 Ω(AMP OUT 1,2)
	<0.1% @+14dB 20Hz ~ 20kHz (MAIN, MONITOR,EFX OUT)
Frequency Response	20Hz ~ 20kHz, +1/-2dB @1W output into 4Ω(AMP OUT 1,2)
	20Hz ~ 20kHz, +1/-2dB @ +4dB output (MAIN, MONITOR,EFX OUT)
Hum and Noise (Average, Rs=150Ω) (with 20Hz ~ 20kHz BPF)	-121dB equivalent input noise -95dB residual noise (MAIN OUT, AUX1 /AUX2 )
	-88dB (MAIN MONITOR OUT) * Master VR at nominal level and all channel VR Minimum.
	-75dB (EFX OUT) * Master VR at nominal level and all channel VR Minimum.
	66dB MIC IN TO AMP
	48dB MIC IN TO MAIN OUT, MONITOR OUT
Maximum Voltage Gain	54dB MIC IN TO AUX2/EFX
	32dB LINE IN TO MAIN OUT, MONITOR OUT
	38dB LINE IN TO AUX2/EFX OUT
	26 dB TAPE IN TO MAIN OUT
Crosstalk (at 1kHz)	-70dB between input channels -70dB between output channels
Input Channel Equalization	HIGH: 12kHz shelving, MID : 2.5kHz peaking LOW: 80Hz shelving * Turnover/roll off frequencies: located 3dB below maximum boost/cut
LED Meters	7 POINTS LED METER(-20, -10, -7, -4, 0, +3, +6dB) MAIN,MONITOR OUT
Graphic Equalizer	7 bands (63, 160, 400, 1K, 2.5K, 6.4K, 16K) ±12dB maximum
Internal Digital Effect	100 selectable presets
	FOOT switch (ON/OFF)
Phantom Power	+36V DC
CLIP indicators	Turns on : THD<0.1%
Protection Circuit	Power switch on/off, Mute, DC fault Detection, Temp(Heatsink)
Power Source/Power Con- sumption	AC 120V/230V/240V, 50/60Hz, 600W (full)
Weight	13.25kg
Dimensions (W x D x H)mm	480 x 310 x 262mm

\* Specifications and design subject to change without notice for improvements.

# Service

# Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

# Schematic

A Schematic is available by contacting your warranty provider.

# **Parts List**

A Parts List is available by contacting your warranty provider.

# **Variations and Options**

# Variations

Products supplied through legitimate sources are compatible with local AC power requirements.

# Options

No optional items are available for this product.

# Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact HPA directly or the authorized HPA Distributor for your specific country or region. PM6200

