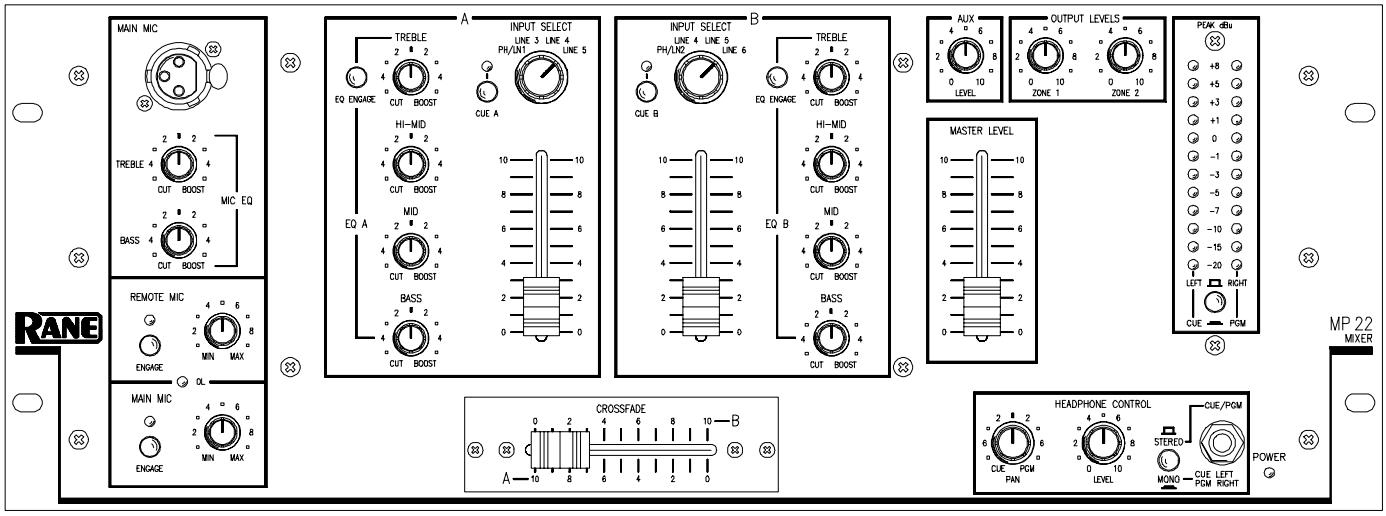


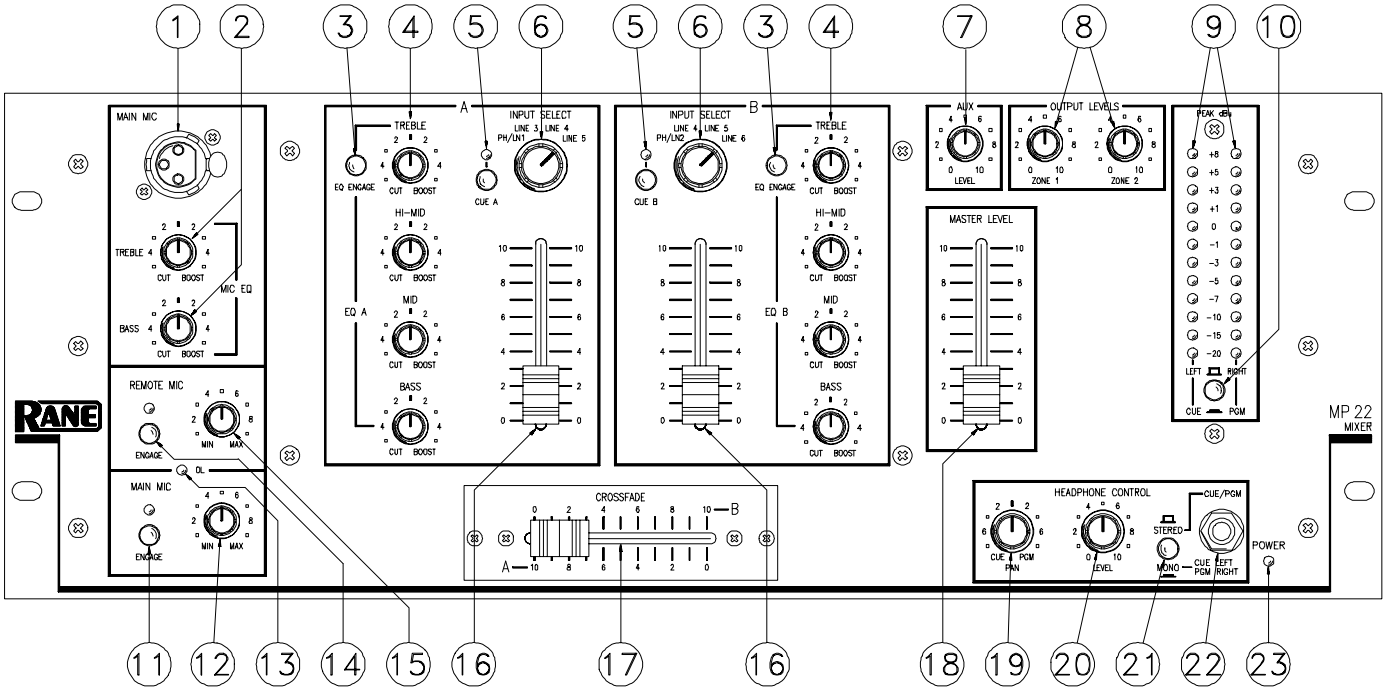
QUICK START

If you won't read the manual (we know how it is) here are a few basic "plug it in and get signal thru it" facts. The MP 22 has all unbalanced RCA connectors, except for the XLR & ¼" Mic Inputs, and ¼" Mic Loop. Be sure your amplifier is off while making connections. On the front panel, set all controls to the middle of their travel. Set all pushbuttons to their *out* position, slide the **MASTER LEVEL** all the way down. Turn the **INPUT SELECT** switch for Channel **A** or **B** to an Input with material playing. Turn your amplifier on. Now slowly turn up the **MASTER LEVEL** and see the material on the meters and hear it from the **MASTER OUTPUT** jacks.

There are two places where you can get lost. If you bring a phono signal into **PH/LN 1** or **2** be sure to keep the **LINE/PHONO** switch set to **PHONO**; likewise when using a CD player be sure this switch is set to **LINE**. If you plug into the **MASTER LOOP RETURN** the signal path thru the unit is broken, since these are switching jacks. They are looking for the return from an outside device that got its signal from the **MASTER LOOP SEND**, so only use these when you can make a complete loop. Now that was a pretty quick start, right?

Never connect anything except a Rane RS 1 to the thing that looks like a red telephone jack on the rear of the MP 22. This is an AC supply and requires some special attention if you do not have an operational power supply ***exactly*** like the one that came with your unit. Consult the Rane factory for a replacement or substitution.

FRONT PANEL DESCRIPTION



1. Front panel MAIN MIC input: Use this three pin connector for connecting a balanced microphone of any impedance.

2. MIC EQ controls: These two controls adjust the frequency contour of both Microphone Inputs. They have no effect on any other Inputs. Positioning these controls to the “12 o'clock” position turns the Mic Equalization off.

3. CHANNEL A & B EQ ENGAGE switches: Engaging this switch enables the Channel Equalizer to function. In the *out* position, the Equalizer is bypassed.

4. CHANNEL A & B EQ level controls: These four rotary controls, when enabled with the EQ ENGAGE switch, are used to contour the frequency response of the selected Input Channel. This is not designed to be the only Equalizer in the system, this is intended to provide EQ between varying program materials. We recommend an external graphic equalizer for best overall system sound, connected between the MASTER OUTPUTS and the amplifier.

5. CUE A or CUE B switch: Engaging any single or combination of CUE pushbuttons sends any program present at the respective Channel's INPUT SELECT selector to the Headphone and meter cue sections. The yellow LEDs adjacent to each CUE select button illuminate when the switch is engaged. Not recommended for beat sync lights. See OPERATING INSTRUCTIONS.

6. INPUT SELECT A & B: These four position rotary switches provide Input selection between the various phono/line inputs for their respective mixing Channels.

7. AUX LEVEL control: This rotary control adjusts the LEVEL from the AUX LINE IN jacks.

8. ZONE LEVEL controls: Control the output LEVEL of ZONE 1 and ZONE 2.

9. PEAK dBu CUE/PROGRAM meter: This meter can switch between two display modes. Refer to the CUE/PROGRAM switch description below.

10. Meter CUE/PROGRAM switch: In the *out* position, the meter indicates Master Program output level in PEAK dBu in LEFT and RIGHT stereo. In the *in* position, mono CUE level is displayed on the LEFT side and mono ProGraM level is displayed on the RIGHT side.

11. MAIN MIC ENGAGE switch: This pushbutton ENGAGES the MAIN MIC Input. The adjacent red LED flashes whenever the switch is pressed *in*, signalling that the Main Mic is on.

12. MAIN MIC LEVEL control: This control adjusts the LEVEL of the front panel MAIN MIC Input.

13. MAIN & REMOTE MIC OVERLOAD indicator: This red LED monitors *both Microphone Inputs*, before and after the MIC EQ. It lights whenever these levels exceed 4dB below clipping. *Occasional flickering is normal; however, it should not be allowed to light steadily*.

14. REMOTE MIC ENGAGE switch: This pushbutton ENGAGES the REMOTE MIC Input. The adjacent red LED flashes whenever the switch is pressed in, signalling the Remote Mic is on.

15. REMOTE MIC LEVEL control: This control adjusts the LEVEL of the rear panel REMOTE MIC Input.

16. A & B Input Channel faders: These faders control the Levels of the Input selected on each Channel.

17. CROSSFADER: This fader controls the relative level of the Inputs assigned to the A and B Channels. When this fader is at its far left, only Channel A is heard from the Outputs. As the fader is moved toward the right, the volume of Channel B is increased. When the fader is centered, both Channels deliver equal volume. As you might expect, at the far right only Channel B is heard from the Outputs. The entire crossfader assembly is replaceable from the front panel without disassembling the entire unit.

18. MASTER LEVEL fader: This control determines the final LEVEL at the MASTER and ZONE OUTPUTS. Unity gain is approximately "6".

19. HEADPHONE PAN control: This control serves two purposes. When the Headphone Mode switch (see #21) is in STEREO mode, this controls the relative levels of the CUE and ProGraM mixed together in Stereo. When the Mode is switched to MONO, this controls the balance between Mono CUE in the left earcup and the Mono ProGraM in the right.

20. HEADPHONE LEVEL control: Clockwise rotation of this rotary control increases the Headphone drive LEVEL.

21. HEADPHONE mode switch: In the *out* position, this switch feeds STEREO CUE and ProGraM to both earcups. In the *in* position the headphone circuit provides MONO CUE to the Left ear and MONO ProGraM to the Right ear.

22. HEADPHONE Output jack: A ¼" tip-ring-sleeve stereo jack provides for the insertion of stereo headphones.

23. POWER "ON" indicator: This yellow LED illuminates anytime the MP 22 is connected to an appropriate power source (see #14, rear panel).

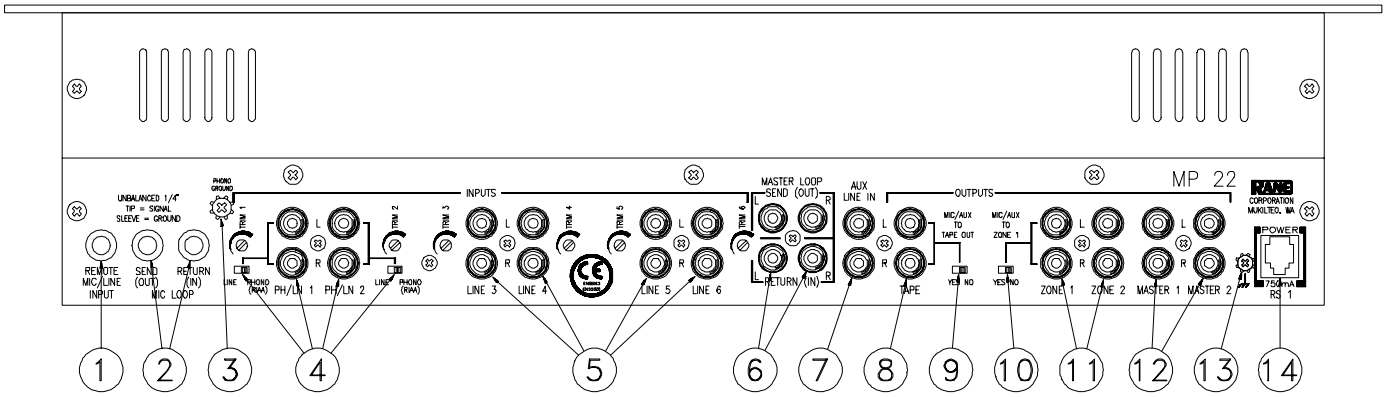
Fader Care:

With heavy use in harsh environments, the faders may need lubrication. Rane recommends spraying one or two bursts of CaiLube MCL into the fader. Work the fader back and forth a few times after spraying. This treatment extends longevity and can make used faders as good as new.

Order CaiLube MCL® from:

CAIG Laboratories, Inc.
16744 W. Bernardo Drive
San Diego CA 92127-1904
Phone 619-451-1799
Fax 619-451-2799
Web www.caig.com

REAR PANEL DESCRIPTION



1. REMOTE MIC/LINE INPUT: This ¼" tip-sleeve INPUT is for wireless mics or other high-impedence sources.

2. MICROPHONE LOOP jacks: These ¼" tip-sleeve connectors are for inserting external signal processing in the microphone circuit only. These jacks do not effect the other INPUTS.

3. PHONO GROUND screw: This GROUND SCREW can facilitate your hum chasing, buzz eliminating experiments. This provides a place to connect those extra wires coming out of the turntables. See CHASSIS GROUNDING note, next page.

4. PHONO/LINE 1 & 2 INPUTS: These stereo Inputs are switchable from a PHONO (RIAA) stage for magnetic cartridges to a LINE level INPUT suitable for any line level device such as a CD player. Each INPUT may be adjusted with its TRIM control for level matching purposes if desired.

5. LINE 3,4,5 & 6 INPUTS: These stereo pairs of RCAs connect LINE level INPUTS only. Each INPUT may be adjusted with its TRIM control for level matching purposes if desired.

6. MASTER LOOP SEND & RETURN: These stereo pairs of RCA connectors are for inserting external signal processing in the MASTER, ZONE and HEADPHONE circuits. This feature does not affect the operation of the MIC or AUX INPUTS. These are switching jacks—always finish the loop when connecting send or return. Only connect to a device that is capable of returning signal back to the MP 22.

7. AUX LINE INPUT: This stereo pair of RCA connectors is an extra set of LINE level Inputs with an independent front panel LEVEL control (see #7, Front Panel).

8. TAPE OUTPUT: These RCA connectors are line level Outputs intended for use with a tape recorder, but not necessarily restricted to that purpose. You may be creative. These Outputs are not affected by the MASTER LEVEL fader.

9. MIC & AUX TO TAPE OUT switch: In the YES position the MIC and AUX signals with all INPUTS are routed to the TAPE OUTPUT. In the NO position only program material from INPUTS 1 through 6 will appear at the TAPE OUTPUT.

10. MIC & AUX TO ZONE 1 switch: In the YES position the MIC and AUX signals along with all INPUTS are routed to the ZONE 1 OUTPUT. In the NO position only program material from INPUTS 1 through 6 will appear at the ZONE 1 OUTPUT. *Note: MIC and AUX are never routed to the ZONE 2 OUTPUT.*

11. ZONE OUTPUTS: These stereo pairs of RCA connectors are LINE level OUTPUTS with an independent front panel LEVEL control (see #8, Front Panel) and are not affected by the MASTER LEVEL control.

12. MASTER OUTPUTS 1 & 2: This stereo pair of RCA connectors provides two identical stereo LINE level OUTPUTS.

13. Chassis ground point: This screw is provided for connection, if required, to chassis ground. See the CHASSIS GROUNDING note on the next page.

14. POWER input connector: This is not a telephone jack! Connect an 18 volt AC center-tapped transformer only. Use only a Rane model RS 1, shipped with the unit, or other RS 1 compatible power supply approved by Rane.

SYSTEM CONNECTION

When first connecting the MP 22 to other components, *leave the power supply for last*. This gives you a chance to make mistakes and correct them without damaging your fragile speakers, ears and nerves.

All of the line level inputs are unbalanced RCA connectors. Inputs PH/LN1, LINE 3, LINE 4 and LINE 5 appear on Channel A; while PH/LN2, LINE 4, LINE 5 and LINE 6 each appear on Channel B. The only restriction is the assignment of the PHONO Inputs, one per Channel A and Channel B. So for you phono only users, Inputs are pretty simple; PHONO 1 is on Channel A and PHONO 2 is on Channel B. If you bring a PHONO signal into PH/LN 1 or 2 be sure to set the appropriate LINE/PHONO switch to PHONO. Like a mic input, a phono requires a lot of gain plus RIAA equalization.

The AUX LINE INPUT has its own LEVEL control on the front panel and basically sums with the other signals before the MASTER and ZONE LEVEL controls.

The MAIN MIC Input on the front panel allows use of a gooseneck mounted microphone. The connector is rotated such that a right angle connector may be used when connecting via mic cable. The REMOTE MIC Input is located on the rear panel and has enough range on it's Level control to accommodate MIC or LINE level inputs. The MIC LOOP has an unbalanced ¼" TS (Tip/Sleeve) Output (send) and a separate ¼" TS (Tip/Sleeve) Input (return). The *effect* in this LOOP *affects* both Mics simultaneously.

Inserting plugs into the MASTER LOOP RETURN breaks the signal path thru the unit unless they contain the return from an outside device that got its signal from the MASTER LOOP SEND. In other words, these are switching jacks—only use a stereo effects device that passes signal completely patched through.

The MIC and AUX can be switched to appear or not appear on the ZONE 1 Output, and the MIC and AUX can be switched to appear or not appear on the TAPE Output, determined by the YES/NO switches on the rear panel.

If you are connecting balanced devices (3 conductor) to either the Input or Output of the MP 22, consult the included RaneNote “Sound System Interconnection” for proper wiring procedures.

IMPORTANT NOTE

CHASSIS GROUNDING

If your system exhibits excessive hum or buzzing, there is an incompatibility in the grounding configuration between units somewhere. Your mission, should you accept it, is to discover how your particular system wants to be grounded. Here are some things to try:

1. Try combinations of lifting grounds on units that are supplied with ground lift switches or links.
2. If your equipment is in a rack, verify that all chassis are tied to a good earth ground, either through the line cord grounding pin or the rack screws to another grounded chassis like the amplifier.
3. Units with outboard power supplies do NOT ground the chassis through the line cord. Make sure that these units are grounded either to another chassis which is earth grounded, or directly to a known ground by means of a wire connected to a screw on the chassis with a star washer to guarantee proper contact.

Please refer to Rane Note 110, “Sound System INterconnection included with this manual for further information on system grounding.

OPERATING INSTRUCTIONS

INITIAL OPERATION

For starters, connect a CD player to LINE 1 input and set the PHONO/LINE switch to LINE. If a turntable is used, set this switch to PHONO. Make sure all faders are set to zero, the MIC and EQ are disengaged (switches out) and that all rotary controls are either fully CCW (LEVEL controls) or in their center detents (EQs), whichever applies. Leave the rear panel INPUT TRIMS at full CW (factory preset). Switch the Channel A INPUT SELECT to PH/LN 1. Simultaneously raise the Channel A fader and the MASTER LEVEL fader. Before you cover much travel on the faders you should begin to hear the results. If you do not, shut everything down and recheck your connections, power to the mixer (look for the yellow POWER light) and ancillary devices (EQs, crossovers, power amplifiers, etc.) Once you have established an output from whatever is connected to LINE 1, go ahead and try the other Inputs.

INPUT FADERS

The Input Channel faders should be set near their maximum levels to preclude requiring excessive gain from the Output stage. Achieve optimum noise performance by running the majority of the gain on the Input stages. Taking the least amount of gain on the Output stage ensures that the system doesn't have to amplify the unavoidable noise generated by the input buffers and summing amplifiers.

INPUT TRIMS

The TRIMS allow various devices to drive each INPUT equally. If you have two CD players, you might want to play the same CD on each player. Now lower the TRIM on the louder player (the other one should be up all the way) so the MP 22 meter peaks match for both players. You can use a similar method with the same recording on different formats to match a turntable to a CD, or a cassette to a CD or video deck. If your source has an Output VU of its own, push the Input Channel fader all the way up, set the MASTER LEVEL control to "6" (unity gain), and adjust the TRIM so that both meters reach 0 dB at the same time.

HEADPHONE CONTROL (CUE) SYSTEM

First, you must have signal present at one of the Inputs. (Well, at least you do to make sure it works.) Depressing the CUE switch for the respective Input Channel presents this signal to the headphone amplifier. An LED illuminates next to the Input CUE switch, attesting to the fact that it is pushed *down*. There are two choices of listening to the CUE. With the STEREO/MONO switch *down*, you get Mono Cue in the Left ear and Mono Program in the Right, and the PAN controls the amount of each. With this switch *up*, you get Stereo Program in both ears or Stereo Cue in both ears, depending on the rotation of the PAN control. The overall volume is then controlled by the HEADPHONE LEVEL control.

When a CUE is active at either Input Channel, and if the Meter CUE/ProGraM switch is *down*, the monoed Cue signal is routed to the LEFT side of the PEAK dBu Meter, while monoed Program is displayed on the RIGHT. This is useful to match a source before it is faded in to the level of the program currently playing, or for visual beat matching.

USING THE CROSSFADE

The two Input Channels volume begins from the faders on Channels A and B. Their outputs are under the control of the Crossfader. When in its left-most position, only Channel A appears at the Outputs. In the center, both Channels are present in equal levels, and only Channel B will be heard once the far right is reached. The sound pressure level does not change as this transition progresses. This is a constant power Crossfader, which means that if the two input signals are equal, a steady volume level will be maintained no matter where the Crossfader is positioned from far left to center for A, and from far right to center for B. Thus it can get a bit sticky to predict when one song may be in terminal fade-out as you Crossfade from one to another which is just getting up to full steam.

MICROPHONE OPERATION.

Connect the mic to the appropriate connector. Leave the MASTER LEVEL fader in roughly the same location as it was for the music that's been playing, press the MIC ENGAGE switch (notice the flashing LED) and adjust the MAIN MIC (or REMOTE MIC) LEVEL. The tonal balance may be adjusted via the MIC EQ controls. Modifying the sound of the mic in this way won't affect the EQ of the music in the system. The three Equalizer sections (Mic and Input A and B Channels) are totally independent. When the mic is not in use, release the MIC ENGAGE switch again to its *up* position, extinguishing the LED. Should the microphone preamp become overloaded, the red LED OverLoad light illuminates. If this is a problem, lower the appropriate MIC LEVEL control and increase the level of the MASTER LEVEL fader to restore desired microphone level.

ZONE OUTPUTS

The ZONE OUTPUTS are additional stereo Outputs with their own ZONE LEVEL controls that can be routed to amplifers that feed the bar, another tape recorder, etc. If you would like the MIC and AUX signals to be removed from the ZONE 1 OUTPUT place the rear panel switch in the NO position. In the YES position, you do get MIC and AUX signals in ZONE 1.