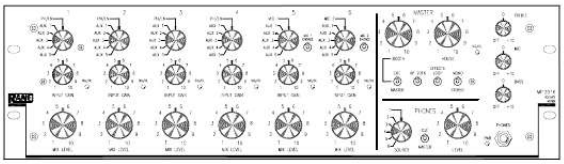
RANE **OPERATORS MANUAL** **MP 2016**
ROTARY DJ MIXER



QUICK START

The MP 2016 is not a UREI! The MP 2016 has many features absent in the UREI. To fully realize all of the benefits provided by these additional features, please read the entire manual. For those of you who should read the manual, but won't, here's the short version.

There are four dedicated phono preamplifiers. One each for Input Channels 1-4. Switches on the rear panel set each preamplifier for **LINE** or **PHONO** operation. Make sure you have these switches set correctly for your application.

There are two dedicated **MIC** preamplifiers, one each for Input Channels 5-6. Rear panel switches set each preamplifier for **LINE** or **MIC** operation. Make sure you have these switches set correctly. **MIC GAIN** controls adjust each preamplifier for the correct sensitivity. With a **MIC** selected and **ENGAGED**, set the **INPUT GAIN** control to "**10**" and adjust **MIC GAIN** to just keep the Input Channel **SIG/OL** indicator green, not red. Set the tone controls as desired. The **MIC ENGAGE** switch ducks the **BOOTH** Output by 12 dB unless defeated with internal jumpers.

All five stereo **AUX** Inputs are available for each of the six Input Channels.

Adjust **INPUT GAIN** controls so they blink the green **SIG/OL** indicator. If an indicator stays red, the **INPUT GAIN** control is set too high. This provides optimum signal to noise, dynamic range and **MIX LEVEL** control consistency.

The **BOOTH** may select **CUE** or **MASTER** as its source. **CUE** allows monitoring Inputs in the booth without headphones.

The **XP 2016** switch engages the optional XP 2016 processor. If the XP 2016 is not connected, the switch has no effect. See page Manual-7 for XP 2016 features.

The **EFFECTS LOOP** switch switches the Loop in (*up*) or out (*down*). If nothing is connected to the **EFFECTS LOOP RETURN**, the switch has no effect.

The **MASTER MONO/STEREO** switch influences both **BOOTH** and **HOUSE OUTPUTS**. It does not affect the **EFFECTS LOOP** or **TAPE OUTPUTS**.

Two **TAPE OUTPUTS** are provided. One is **PRE-EFFECTS** Loop and one is **POST-EFFECTS** Loop. The **POST-EFFECTS** Loop Tape Output has a **LEVEL** control and may be used as a pre-tone control **AUX** Output.

The MP 2016 uses high performance tone control circuits that isolate the signal into three bands. The level of each band is independently controlled, and then recombined. This topology provides full "kill" for **TREBLE**, **MID** and **BASS**.

The **MASTER SIG/OL** indicator monitors the master mix before and after the tone controls. This indicator should light green most of the time. It is OK for it to flash red on occasion. This provides optimum signal-to-noise and dynamic range. **HOUSE** and **BOOTH** level controls do not affect the **MASTER SIG/OL** indicator.

The **HOUSE OUTPUT** has both **BALANCED** and **UNBALANCED** Outputs. Always use the **BALANCED** Outputs for longer cable runs (typically greater than 10 feet, or 3 meters).

Headphone cueing allows monitoring **MASTER** or **CUE SOURCE**. If **MIX LEVEL** controls are operated at less than "7", be sure to turn the **PHONES LEVEL** down before selecting **CUE SOURCE** as it may be *much* louder than the Master Mix. The Headphone Output is low-impedance high-current, so ***do not*** short the tip and ring together or to ground.

Never connect anything except an approved Rane power supply to the red thing that looks like a telephone jack on the rear of the unit. This is an AC input and requires special attention if you do not have a power supply *exactly* like the one originally packed with your unit. See the full explanation of the power supply requirements elsewhere in this manual.

WEAR PART

The MP 2016 contains no wear parts. The XP 2016 contains the following wear part subject to the ninety (90) day warranty period described on page Service-1: *(1) Active Crossover Assembly F 60.*

Manual abstract:

@@@@There are four dedicated phono preamplifiers. One each for Input Channels 1-4. @@Make sure you have these switches set correctly for your application. There are two dedicated MIC preamplifiers, one each for Input Channels 5-6. Rear panel switches set each preamplifier for LINE or MIC operation. Make sure you have these switches set correctly. MIC GAIN controls adjust each preamplifier for the correct sensitivity. With a MIC selected and ENGAGED, set the INPUT GAIN control to "10" and adjust MIC GAIN to just keep the Input Channel SIG/OL indicator green, not red. Set the tone controls as desired. The MIC ENGAGE switch ducks the BOOTH Output by 12 dB unless defeated with internal jumpers.

All five stereo AUX Inputs are available for each of the six Input Channels. Adjust INPUT GAIN controls so they blink the green SIG/OL indicator. If an indicator stays red, the INPUT GAIN control is set too high. This provides optimum signal to noise, dynamic range and MIX LEVEL control consistency. The BOOTH may select CUE or MASTER as its source.

CUE allows monitoring Inputs in the booth without headphones. The XP 2016 switch engages the optional XP 2016 processor. If the XP 2016 is not connected, the switch has no effect. See page Manual-7 for XP 2016 features. The EFFECTS LOOP switch switches the Loop in (up) or out (down).

If nothing is connected to the EFFECTS LOOP RETURN, the switch has no effect. The MASTER MONO/STEREO switch influences both BOOTH and HOUSE OUTPUTS. It does not affect the EFFECTS LOOP or TAPE OUTPUTS. Two TAPE OUTPUTS are provided. One is PRE-EFFECTS Loop and one is POST-EFFECTS Loop. The POSTEFFECTS Loop Tape Output has a LEVEL control and may be used as a pre-tone control AUX Output. The MP 2016 uses high performance tone control circuits that isolate the signal into three bands. The level of each band is independently controlled, and then recombined. This topology provides full "kill" for TREBLE, MID and BASS. The MASTER SIG/OL indicator monitors the master mix before and after the tone controls.

This indicator should light green most of the time. It is OK for it to flash red on occasion. This provides optimum signal-to-noise and dynamic range. HOUSE and BOOTH level controls do not affect the MASTER SIG/OL indicator. The HOUSE OUTPUT has both BALANCED and UNBALANCED Outputs. Always use the BALANCED Outputs for longer cable runs (typically greater than 10 feet, or 3 meters). Headphone cueing allows monitoring MASTER or CUE SOURCE. If MIX LEVEL controls are operated at less than "7", be sure to turn the PHONES LEVEL down before selecting CUE SOURCE as it may be much louder than the Master Mix. The Headphone Output is low-impedance high-current, so do not short the tip and ring together or to ground. Never connect anything except an approved Rane power supply to the red thing that looks like a telephone jack on the rear of the unit.

This is an AC input and requires special attention if you do not have a power supply exactly like the one originally packed with your unit. See the full explanation of the power supply requirements elsewhere in this manual. WEAR PART The MP 2016 contains no wear parts. The XP 2016 contains the following wear part subject to the ninety (90) day warranty period described on page Service-1: (1) Active Crossover Assembly F 60. Manual-1 MP 2016 FRONT PANEL CONTROLS INPUT SELECTORS 1-4 Each six-position Input Selector chooses a dedicated PHONO/LINE preamplifier, or one of five stereo AUX Inputs as its Input Channel source.

(PHONO/LINE switches are located on the rear panel). INPUT SELECTORS 5-6 Each six-position Input Selector chooses a dedicated mono MIC Input, or one of five stereo AUX Inputs as its Input Channel source. (MIC GAIN trim, MIC/LINE switch and MIC tone controls are located on the rear panel). MIC ENGAGE MIC 1 and MIC 2 ENGAGE switches allow switching a mic on (up) or off (down). MIC Input must be selected and MIC ENGAGE on to activate a MIC Input.

When a mic is not in use, be sure to switch MIC ENGAGE off. The MIC ENGAGE switches also activate the Booth Ducker. This attenuates the Booth Output -12 dB whenever a MIC ENGAGE switch is on, even if MIC Input is not selected (internal jumpers allow disabling the Booth Ducker--see Mic/Line Inputs on page Manual-6). INPUT GAIN INPUT GAIN controls allow the user to match input levels. Adjust these controls to make the SIG/OL indicator flash green. If the indicators turn red, reduce the INPUT GAIN. Adjusting the INPUT LEVEL controls correctly maximizes dynamic range and provides consistent MIX LEVEL response. Input SIG/OL These dual color indicators provide help in setting correct input levels. A flashing green indication is optimal. The red indicator should remain off during normal operation.

MIX LEVEL These studio-grade controls determine the Master MIX LEVEL. For optimum performance, set the INPUT GAIN controls as indicated above, and then operate MIX LEVELS between "7" and "10" for full mix. Use the HOUSE and BOOTH LEVEL controls to set the output levels. Always set the MIX LEVEL controls to minimum when not in use. Manual-2 MASTER HOUSE Level This studio-grade control sets the HOUSE Output level. MASTER SIG/OL indicator This dual color indicator helps set correct MASTER mix levels. A flashing or steady green indication is optimal. The red indicator may flash only briefly on rare occasion...

regular flashing or steady-on means that distortion is imminent and Levels need reducing. XP 2016 switch This engages the optional XP 2016 external processor. If the XP 2016 is not connected, the switch does nothing. If an XP 2016 is connected and the switch is on (up), it routes the MIX LEVEL Outputs to the XP 2016 and returns a stereo MASTER signal to the MP 2016. EFFECTS LOOP switch This engages the EFFECTS LOOP when up.

If nothing is connected to the EFFECTS LOOP RETURN, the switch has no effect. MONO/STEREO switch This sets the MASTER mix signal to MONO or STEREO operation. It effects both BOOTH and HOUSE Outputs. TREBLE tone control Allows adjusting the amplitude of frequencies above 4 kHz from +10 dB to OFF (full kill). MID tone control Allows adjusting the amplitude of frequencies between 300 Hz and 4 kHz from +10 dB to OFF (full kill).

BASS tone control Allows adjusting the amplitude of frequencies below 300 Hz from +10 dB to OFF (full kill). PWR indicator This yellow indicator lights whenever AC power is connected to the unit. MASTER BOOTH Level This studio-grade control sets the BOOTH Output level. BOOTH CUE/MASTER switch The BOOTH CUE/MASTER switch selects MASTER mix or CUE selection as its source. This allows CUE monitoring in the BOOTH without headphones. PHONES SOURCE selector The PHONES SOURCE selector determines the CUE source to be monitored by the headphones (or the BOOTH if CUE is selected as its source). PHONES CUE/MASTER switch The PHONES CUE/MASTER switch determines if the MASTER or CUE selection is monitored by the headphones. This switch does not affect the BOOTH source. PHONES LEVEL This studio-grade control determines the headphone output level.

If you are mixing with the MIX LEVEL controls below "7", be sure to turn the PHONES LEVEL down before selecting CUE source as it may be much louder than the Master Mix.

PHONES jack Plug your headphones in here. The headphone output is very low impedance and high current so do not short tip and ring together or tie to ground, as is common with many lowcost mono cups. Use resistors of 300 to 600 ohms in series with each output for mono applications, although this significantly reduces output power. Manual-3 REAR PANEL INPUTS & OUTPUTS MIC 1, MIC 2 XLR jacks The MIC 1 Input provides a dedicated balanced preamplifier for Input Channel 5, while MIC 2 provides the preamplifier for Input Channels 6. Each may operate in MIC or LINE mode. @@MIC/LINE switches These select MIC or LINE mode for the MIC Inputs. In MIC mode, the gain range is 20 to 50 dB. In LINE mode, the gain range is 0 to 30 dB. @@@@@@@@@@@@@@@@Each may operate in RIAA PHONO or LINE mode. @@Make certain these switches are set correctly for your source. @@@@@@@@@@@@@@@@@@@@@@@@BOOTH OUTPUT RCA jacks The unbalanced stereo BOOTH OUTPUT is normally used for booth monitoring. As previously outlined, very flexible source selection is provided as well as MIC ducking. Remember, the BOOTH OUTPUT is attenuated by 12 dB whenever one of the front panel MIC ENGAGE switches is active (unless ducking has been defeated with the internal jumper. See Mic/Line Inputs on page Manual-6). HOUSE OUTPUT jacks Both balanced (XLR) and unbalanced (RCA) jacks are provided.
For long runs, we highly recommend using the BALANCED outputs. The UNBALANCED outputs are intended for short runs of less than 10 feet (3 meters). Both may be used simultaneously if required. POWER jack The power jack receives the cable from the RS 1 power supply shipped with the unit. The chassis ground screw located just above the jack is intended for earth grounding the chassis.
(see Chassis Grounding note.) AUX INPUTS 1-5 RCA jacks These five stereo AUX Inputs are unbalanced, line level Inputs available for selection on all six Input Channels. XP 2016 EXTERNAL PROCESSOR The XP 2016 port provides the required socket for connecting the XP 2016 ribbon cable (supplied with the optional XP 2016). If an XP 2016 is not connected, the front panel XP 2016 engage switch has no effect. If ribbons longer than that suppliedhannels will be mixed at about 70% to 100% rotation. BOOTH and HOUSE level controls are then used to set the output volume. The MASTER SIG/OL indicator displays the signal level of the mix. The GREEN SIG indicator should flash or remain on. The RED OL indicator should remain off (it may flash occasionally). To correct an overload condition, one or more of the MIX LEVEL controls must be turned down.

The MASTER SIG/OL indicator monitors the signal before and after the tone control, so if you use a lot of boost, remember to monitor this indicator. TONE CONTROLS The MP 2016 uses high performance tone control circuits that isolate the signal into three bands. The level of each band is independently controlled, and then recombined. This topology provides full "kill" for TREBLE, MID and BASS. If all three bands are set to the same level, there will be no change in frequency response, only amplitude. It is the difference in settings that determines the tonal quality of the signal. These advanced tone controls provide excellent dynamic response with fixed phase shift. Control is smooth and predictable. The tone controls can isolate beats, vocals and "high-hat," as well as adjust general tonal quality. Remember that the dedicated Mic tone controls (on the rear panel) are used to equalize the Microphone Inputs. Q R L W D X Q H W W $ 5RWDWLRQ MIC/LINE INPUTS Input Channels 5 and 6 each have dedicated preamplifiers. A switch on the rear panel allows setting these Inputs for MIC or LINE level signals. Make sure you have the switch in the correct position for your application. While these Inputs are designed for use with dynamic microphones (no phantom power) or wireless microphones with line level output, they will accept just about any mono signal. While balanced operation is highly recommended, these Inputs may be operated unbalanced with sources that are close to the MP 2016 (less than 10 feet or 3 meters).
@@@@@@The mixed signal is returned to the MP 2016. @@If the XP 2016 engage switch is not active, the MASTER signal gets the normal MP 2016 mix. CHANNEL 1-6 TREBLE Allows adjusting the amplitude of frequencies above 4 kHz from +10 dB to OFF (full kill). CHANNEL 1-6 MID Allows adjusting the amplitude of frequencies between 300 Hz and 4 kHz from +10 dB to OFF (full kill). CHANNEL 1-6 BASS Allows adjusting the amplitude of frequencies below 300 Hz from +10 dB to OFF (full kill).
CHANNEL 1-6 A/POST/B assign These switches assign each of the six input channels to the A side of the Crossfader, B side of the Crossfader or POST Crossfader CROSSFADER This implements using Ranes' proprietary Active CrossfaderTM design. All audio is isolated from the control element, greatly extending the life and performance of the control. See page Manual-8 for cleaning and replacement instructions. CROSSFADER CONTOUR This control allows adjusting the "shape" of the Crossfader response from a gentle curve for smooth, long running fades, to the steep pitch required for top performance cut and scratch effects. (See the graph in the Data Sheet.) PEAK PROGRAM/CUE METER The stereo 10-segment Meter on the XP 2016 monitors the same signal as the headphones. If MASTER is selected as the source, the Meter will indicated the MASTER signal level before the HOUSE and BOOTH level controls. If CUE is selected as the source, the meter will indicate the level of the selected CUE signal. PWR indicator This yellow indicator lights whenever AC power is connected to the unit. Manual-7 This is the required socket to connect the XP 2016 to the MP 2016, using the ribbon cable supplied with the XP 2016.

If a ribbon longer that that supplied with the XP 2016 is used, crosstalk may increase, and immunity to RF, magnetic and conducted interference may be compromised. So don't do it! POWER This power jack receives the cable from the RS 1 power supply shipped with the unit. The chassis ground screw located just above the jack is intended for earth grounding the chassis (see Chassis Grounding note on page Manual-4). XP 2016 Ribbon Connections: (PIN 1 marked) 1) GND 2) GND 3) MIX RIGHT OUT 4) MIX LEFT OUT 5) GND 6) METER LEFT IN 7) METER RIGHT IN 8) GND 9) CH 6R IN 10) CH 6L IN 11) GND 12) CH 5R IN 13) CH 5L IN 14) GND 15) CH 4R IN 16) CH 4L IN 17) GND 18) CH 3R IN 19) CH 3L IN 20) GND 21) CH 2R IN 22) CH 2L IN 23) XP 2016 ENABLE (GND) 24) CH 1R IN 25) CH 1L IN 26) GND Fader Cleaning With heavy use in harsh environments, the faders may need lubrication. This treatment extends longevity and can make used faders as good as new. The fader assembly must be removed from the XP 2016 for proper cleaning.

We recommend any of the following cleaning solutions: Caig Cailube MCL 100% spray lubricant Caig Cailube MCL 5% spray cleaner CRC 2-26 Order CaiLube MCL from: CAIG Laboratories, Inc. 12200 Thatcher Ct. Poway, CA 92064 Phone 858-486-8388 Fax 858-486-8398 Web http://www.caig.com CLEANING INSTRUCTIONS A. Fader assembly removal 1. Remove (2) 3mm screws. 2. Draw fader assembly out through hole. 3. Remove ribbon cable. B. Fader cleaning 1. Hold the fader assembly away from the mixer. 2. Position the fader at mid-travel. 3. Spray cleaner/lubricant into both ends of the fader. 4. Move the fader over its full travel back and forth a few times. 5. Shake excess fluid from the fader assembly. 6. Wipe off excess fluid.

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