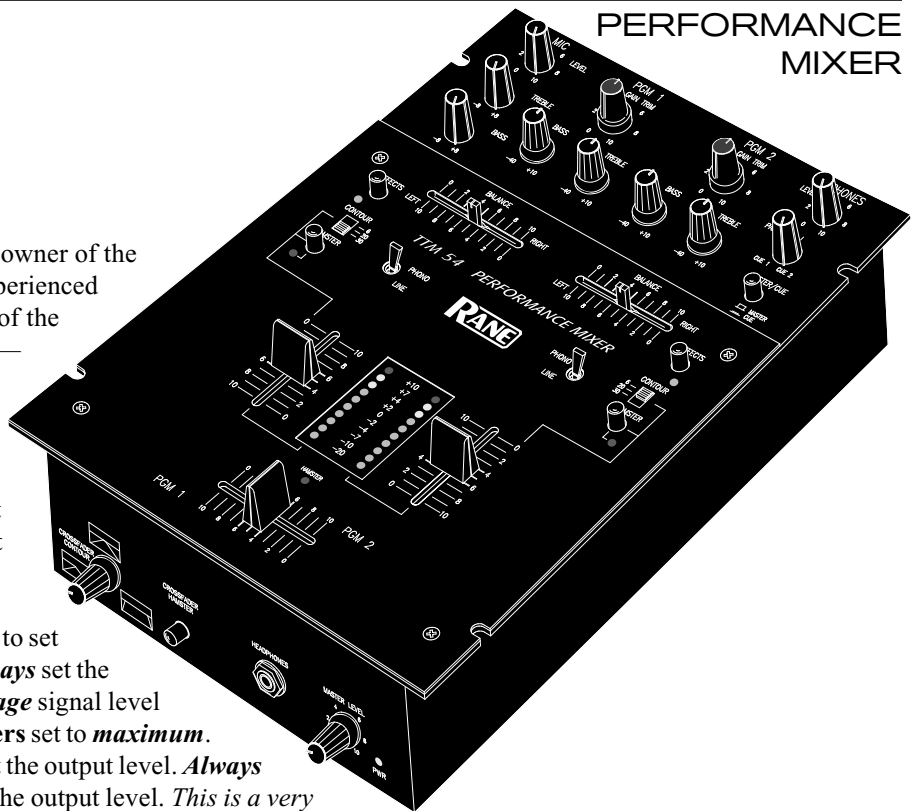


## Quick Start

Congratulations! You are now the proud owner of the best Performance Mixer available. For experienced turntablists, *ninety percent* of the operation of the **TTM 54 Performance Mixer** is obvious — however, the **TTM 54** also has many unique features. These new features will be mastered more quickly if you read the entire manual. *Right!* We know some of you can't resist jumping right in, so please read at least this portion of the manual. It will help you get a good start.



- **GAIN TRIM:** These controls are intended to set the signal level *before* the Crossfader. *Always* set the **GAIN TRIM** controls to indicate an *average* signal level of +4 on the meter with the **Program Faders** set to *maximum*. *Never* use the **GAIN TRIM** controls to set the output level. *Always* use the **MASTER LEVEL** control to set the output level. *This is a very simple thing, yet makes a huge difference in the performance of your mixer.*
- **EFFECTS:** The assignable effects loop allows insertion of a stereo effects processor into:
  - Pre-Program Fader **PGM 1** ..... Engage **PGM 1 EFFECTS** only.
  - Pre-Program Fader **PGM 2** ..... Engage **PGM 2 EFFECTS** only.
  - Post-Crossfader **MASTER** ..... Engage *both PGM 1 and PGM 2 EFFECTS* switches.
  - Read sections ④ and ②⑩ for more information.
- **PHONES:** The headphone output of the TTM 54 is a *high power* output stage (unlike most you have used before). There are some notable differences...
  - The headphone output of the TTM 54 delivers *very high* volume into your headphones.
  - To avoid pain, *never* put headphones on your head and *then* plug them in.
  - *Always* start with the **PHONES LEVEL** turned down and then turn it up to the desired level.
  - Because of the high current and low output impedance, *never* short one side to ground *or* short left and right together as is possible with mono cup headphones. *Note: Low power headphone stages typically use large resistors on their outputs, which allow shorting, but prevent high power. The TTM 54 gives you high power but does not allow shorting.*
- **MIC LEVEL:** For best performance, keep this control at **0** when not in use.
- For instructions on *rotating Phono/Line* switches to the desired location, see page Manual-6.
- *Do not spray cleaner* or lubricant into the front of the **Program Faders** or **Crossfader**. The fluid will just run out the bottom of the unit. *Never use unapproved cleaner* or lubricants such as skateboard wheel lube, as corrosive damage may result, voiding the warranty. See page Manual-6 for cleaning and replacement instructions and cleaner recommendations.
- *Never connect anything except an RS 1 or other approved Rane AC power supply to the thing that looks like a telephone jack on the rear.* This is an 18 VAC center-tapped power unit. Consult the Rane factory for replacement or substitution.
- **WEAR PARTS:** This product contains the following wear parts subject to the ninety (90) day warranty period described on page Service-1: *FT 45 Active Crossfader & Channel Fader Assembly(3); ST 1 Phono/Line Switch Assembly (2).*

## Front and Rear Panel Descriptions

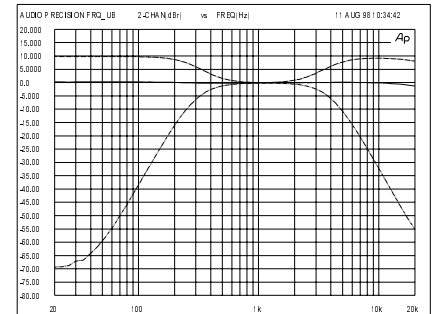
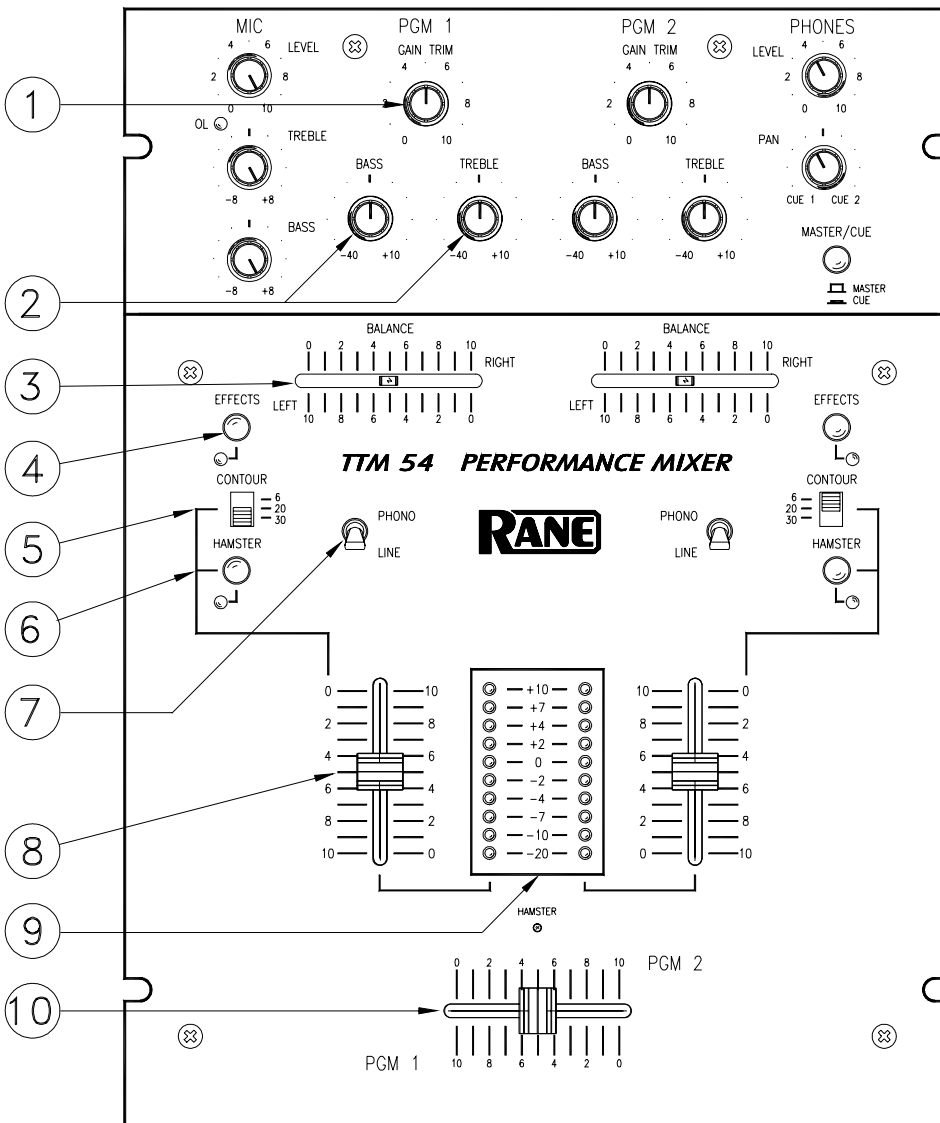


Figure 1. Bass & Treble Controls

- ① **PGM 1** and **PGM 2** input **GAIN TRIM** controls are used to adjust input level. *With the **Program Faders** (see ⑧) at maximum*, set controls to give a *peak reading* of +4 on the meter. Set the **Master Level** to minimum while adjusting). It is *always* best to run the input level at +4 to +7. Use the **MASTER LEVEL** (see ⑰) control to adjust the volume at the **MASTER OUT** (see ⑱).
- ② **BASS** and **TREBLE** controls provide deep cut, *Accelerated Slope™* EQ for **PGM 1** and **PGM 2**. This unique EQ design makes it possible to eliminate “high end” or “bass beat” without changing the sound of the vocals. The graph shown in Figure 1 indicates the response of the filters.
- ③ **BALANCE** controls are used for **LEFT/RIGHT** balance of **PGM 1** and **PGM 2** or for **LEFT/RIGHT** Pan effect. Push the control to the left and sound moves to the left channel. Push the control to the right and sound moves to the right channel.
- ④ **EFFECTS** engage switches are provided for **PGM 1** and **PGM 2**. *These two switches determine the location of a single, assignable, stereo EFFECTS LOOP.*
  - With **PGM 1** and **PGM 2** **EFFECTS** switches both out, the **EFFECTS LOOP** is not engaged.
  - Push **PGM 1** **EFFECTS** switch *only*, and the **EFFECTS LOOP** is inserted pre-**Program Fader PGM 1**.
  - Push **PGM 2** **EFFECTS** switch *only*, and the **EFFECTS LOOP** is inserted pre-**Program Fader PGM 2**.
  - Push *both* **PGM 1** and **PGM 2** **EFFECTS** switches, and the **EFFECTS LOOP** is inserted post-**Crossfader Master**.

⑤ **CONTOUR** switches provide three tapers for **PGM 1** and **PGM 2 Program Faders**. The numbers **6**, **20** and **30** indicate the mid-point attenuation. Settings can provide smooth fade or cut and scratch effects. Note from the graph shown in Figure 2, that the **6 dB** setting provides a *quick on* contour for cut and scratch (0% travel is with Program Fader up). When used with the **HAMSTER** reversal switch, the **Program Fader** operates very similar to the **Crossfader**, allowing the same hand motion for cut and scratch operation. The **20 dB** setting provides a normal audio taper while the **30 dB** setting provides a more rapid fade out.

⑥ **HAMSTER** switches are provided for **PGM 1** and **PGM 2 Program Faders**. These switches reverse the operation of the adjacent **Program Fader**. When engaged, signal is *off* with the **Program Fader up**, and *maximum* with the **Program Fader down**.

⑦ **PHONO / LINE** source select switches are provided for **PGM 1** and **PGM 2**. These are “clickless” switches suitable for “transform scratch” applications. The switches are field replaceable and may be rotated in 45° increments. See Figure 4 on page Manual-6 for rotation and replacement instructions.

⑧ **Program Fader** controls for **PGM 1** and **PGM 2** are ultra low noise, long-life, monorail devices. An *ActiveFader™* design completely isolates the control element from the audio, providing the highest reliability and performance. See page Manual-6 for cleaning and replacement instructions.

⑨ **PGM 1** and **PGM 2 Meters** provide true L+R Dual Mono indication of **Post-Program Fader** signal levels. Ten segment resolution is provided with a one second peak hold indication. With the Program Fader set to maximum, the input **GAIN TRIM** should be set to indicate an average level of about +4.

⑩ **Crossfader** control is implemented using Ranes’ proprietary *ActiveFader™* design. As with the **Program Faders**, all audio is isolated from the control element, greatly extending the life and performance of the control. See page Manual-6 for cleaning and replacement instructions

⑪ **CROSSFADER CONTOUR** 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 shown in Figure 3.

⑫ **CROSSFADER HAMSTER** control allows reversing the operation of the **Crossfader**. With the combination of *ActiveFader™*, **CONTOUR** control, and **HAMSTER** control, the **TTM 54** provides a level of flexibility and performance previously unavailable.

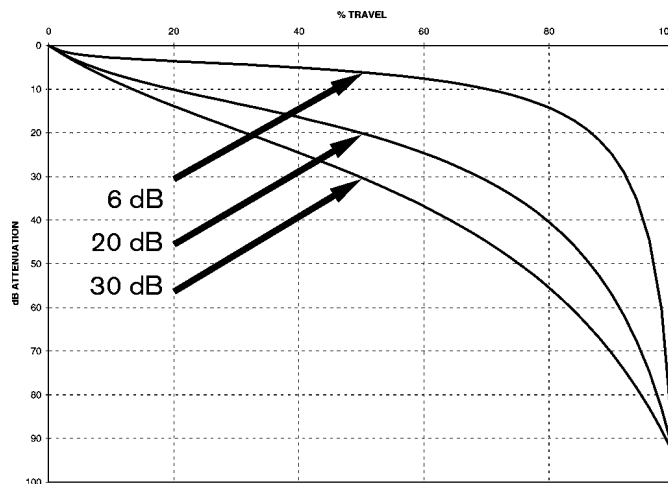


Figure 2. Contour Switch

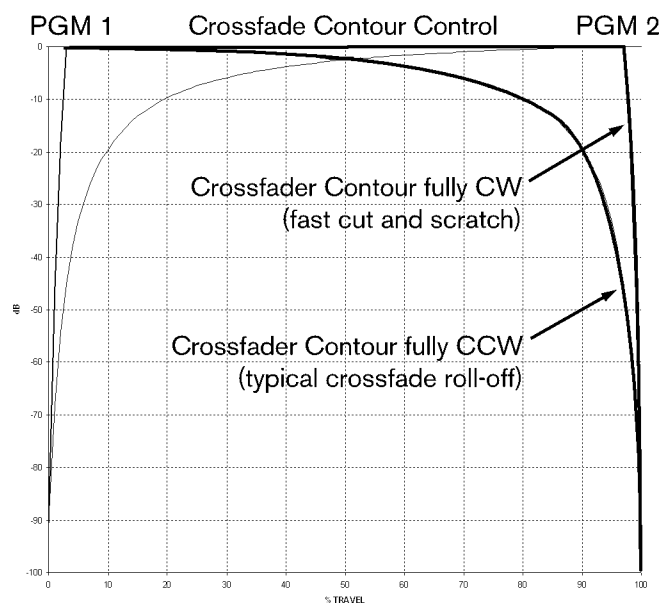
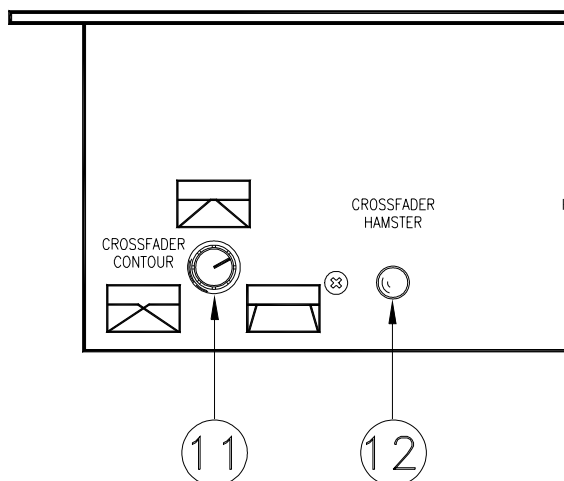
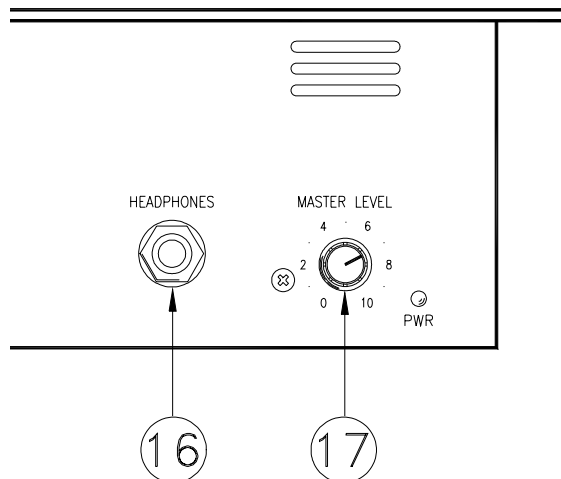
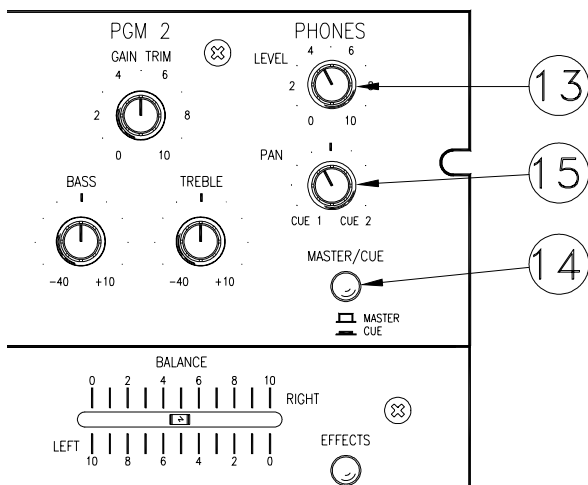


Figure 3. Crossfader Contour control



- ⑬ **PHONES LEVEL** control adjusts the loudness of the Headphone output signal. Always start with the **LEVEL** at minimum (CCW) and increase to a comfortable level with signal present and your headphones on. This prevents tossing them across the room after you put them on and plug in with the level set too high. The **TTM 54** Headphone Amplifier delivers *very high* sound pressure levels (SPL) into most headphone loads. Because of the high current and low output impedance, *never* short one side to ground *or* short left and right together as is possible with mono cup headphones. *Note: Low power headphone stages typically use large resistors on their outputs, which allow shorting, but prevent high power. The TTM 54 gives you high power but does not allow shorting.*
- ⑭ **MASTER / CUE** switch is used to select the **HEADPHONES** monitor source:
- Use **MASTER** to rehearse your performance. This signal is the same as that at the **MASTER OUT**, but is *not* affected by the **MASTER LEVEL** control.
  - Use **CUE** to monitor the Program Input signal, so you can “Cue” a signal before fading in. This signal is *not* affected by the **Program Faders** or **Crossfader**.
- ⑮ **PHONES PAN** control is only active when **CUE** is selected. This control allows you to **PAN** between **Program 1** or **Program 2**.
- ⑯ **HEADPHONES** jack provides a high current output, capable of driving headphones between 8 ohms and 600 ohms. Because the amplifier is capable of high current drive, it is important that the outputs are not shorted together or to ground. *Do NOT use single cup phones that short tip and ring.*
- ⑰ **MASTER LEVEL** adjusts the **MASTER OUTPUT** level for both the balanced and unbalanced outputs.

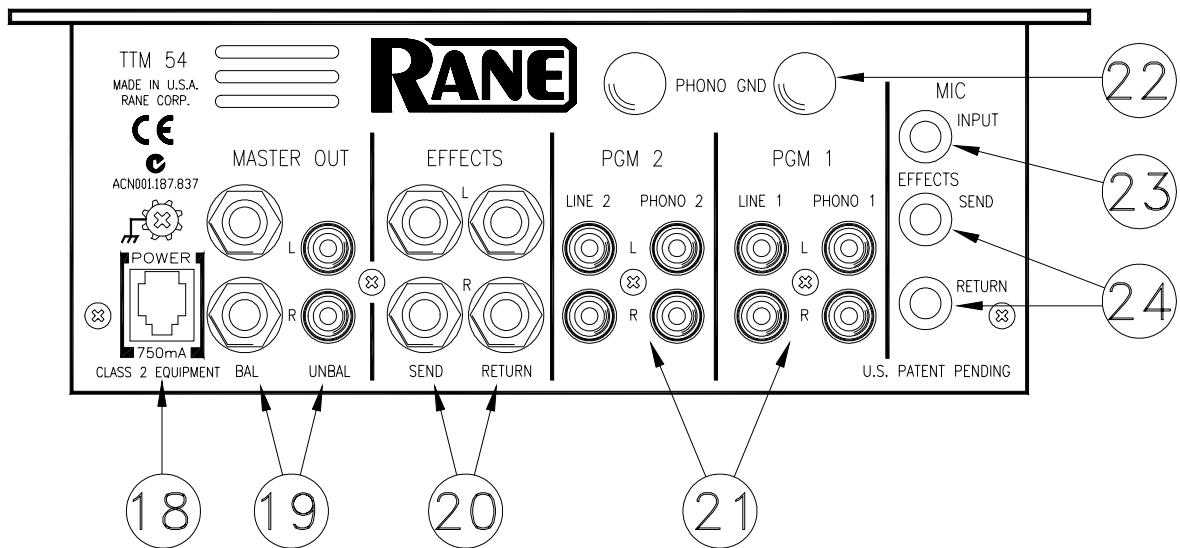
## Important Note

### CHASSIS GROUNDING

If your system exhibits excessive hum or buzzing, there is an incompatibility in the grounding configuration between units somewhere. Here are some things to try:

1. Check that the turntable grounding wires are connected to the PHONO GND posts (see ⑳).
2. Try combinations of lifting grounds on units that are supplied with ground lift switches or links.
3. 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, or tied to the ground screw located just above the POWER jack.
4. This unit's outboard power supply does *not* ground the chassis through the line cord. Make sure that this unit is grounded either to another chassis which is earth grounded, or directly to the grounding screw on an AC outlet cover by means of a wire connected to a screw on the chassis with a star washer to guarantee proper contact.

Please refer to RaneNote 110 “*Sound System Interconnection*” (supplied with this manual and available on request or at our web site) for further information on system grounding.



⑱ **POWER** connector. *This is not a telephone jack!* Connect only the **Rane RS 1** power supply included with your **TTM 54**.

⑲ **MASTER OUT** includes two sets of stereo outputs:

- The 1/4" **TRS** jacks provide high current **BAL**anced output, which should be used whenever driving equipment with a balanced input or running distances greater than about 10 feet. Due to the high drive capability and low impedance, *never* use a mono 1/4" Tip/Sleeve (no ring) cable in this jack; this grounds one side of the **BAL**anced output.
- Use the **UNBAL**anced output for shorter runs, such as connecting to a recorder, looping to another mixer, or to other *local* signal processing or amplifiers.

⑳ **EFFECTS** jacks are unbalanced mono 1/4" Tip/Sleeve. This stereo loop is inserted in the signal path as in section ④.

- The **SEND** jacks provide the output *to* your effects processor.
- The **RETURN** jacks provide an input for the signal returning *from* your effects processor.

㉑ **PGM 1** and **PGM 2** inputs include both **PHONO** and **LINE** input.

- **PHONO 1** and **PHONO 2** inputs are RIAA compensated inputs with 18 dB per octave, 20 Hz rumble filters.
- **LINE 1** and **LINE 2** inputs are unbalanced line level inputs with a nominal sensitivity of -10 dBV.
- **PHONO/LINE** selection is made as described in section ⑦.
- **PGM 1** inputs are sent to the left side of the Crossfader. (HAMSTER switch out)
- **PGM 2** inputs are sent to the right side of the Crossfader. (HAMSTER switch out)

㉒ **PHONO GND** terminals provide an independent ground connect point for two turntables. It is very important that each turntable have a very good ground connection to one of these terminals. The thumb screws *are not captivated*, so use care not to spin them off and lose them.

㉓ The **MIC INPUT** is a balanced input specifically designed for a *dynamic microphone*.

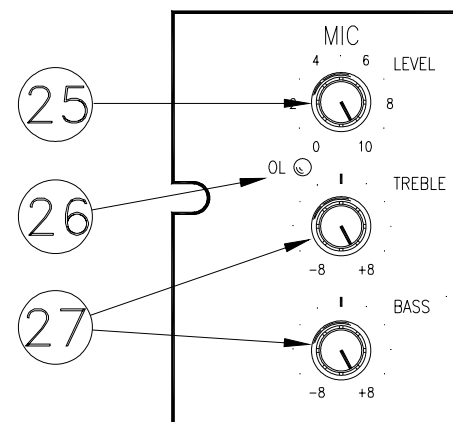
㉔ **MIC EFFECTS** jacks are unbalanced mono 1/4" Tip/Sleeve. This is an independent Effects Loop for the mic. There is no engage switch, so the mic signal is always processed when you have an effects box connected.

- The **SEND** jack provides the output *to* your effects processor.
- The **RETURN** jack provides an input for the signal returning *from* your effects processor.

㉕ **MIC LEVEL** sets the gain of the Mic Input. The range of operation is off to +60 dB. There is no engage switch, so set the **MIC LEVEL** to **0** when not in use.

㉖ The **OL** indicator lights 6 dB *before* clipping. Adjust the **MIC LEVEL** so that the **OL** indicator flashes only when you shout into the microphone.

㉗ **MIC TREBLE** and **BASS** controls provide as much as **8 dB** of boost or **8 dB** of cut. Response is flat when the controls are set to center detent.



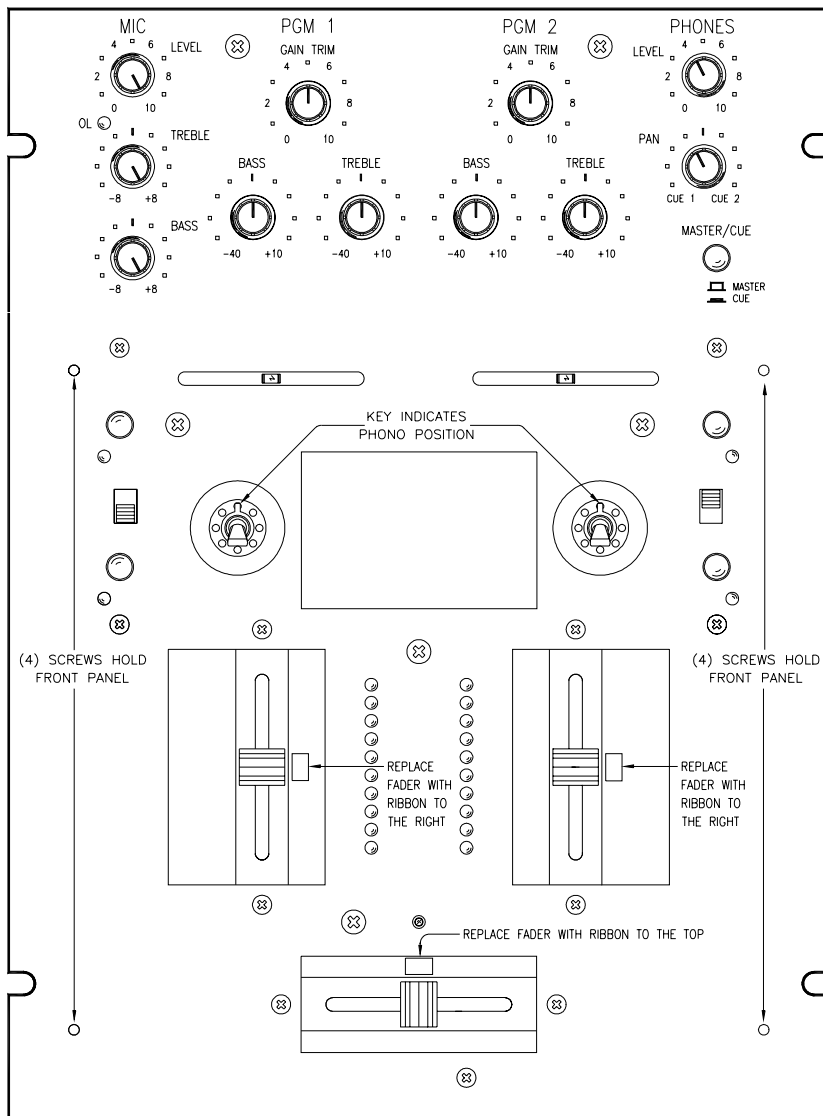


Figure 4. Phono/Line switch rotation or replacement

## Rotating or Replacing Phono/Line Switches

1. Remove the metal faceplate with a #2 philips screwdriver.
2. Remove nut and key washer while holding the bottom of switch assembly.
3. Rotate or install switch with key pointing to desired PHONO position.
4. Install key washer.
5. Install nut, tighten securely with a 5/16" nut driver.
6. Replace faceplate.

## Replacement Parts

### Replacement Phono/Line switch assembly: ST 1

### Replacement Fader Assembly:

**FT 45**

*Follow steps A, B and D in the Fader Cleaning instructions to the right.*

**Replacement assemblies available from your local Rane dealer.**

## 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 TTM 54 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 619-486-8388  
Fax 619-486-8398  
Web <http://www.caig.com>

## CLEANING INSTRUCTIONS

### A. Front panel removal

1. Disconnect the power cord.
2. Remove (3) slide fader knobs.
3. Remove (4) #4-40 front panel screws.  
*Faders and switches are now accessible.*

### B. Fader assembly removal

*To remove any single fader:*

1. Remove (2) 3mm screws.
2. Draw fader assembly out through hole.
3. Remove ribbon cable.

### C. 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.

### D. Fader assembly installation

1. Connect the ribbon cable to the fader assembly.
2. Place the fader assembly in position with the ribbon connector to the right side or top, as shown.
3. Line up the fader screw holes with the mixer mounting holes.
4. Install (2 provided) 3mm screws. *Using the wrong screw will ruin the fader!*
5. Replace the front panel and knobs.