

## Quick Start

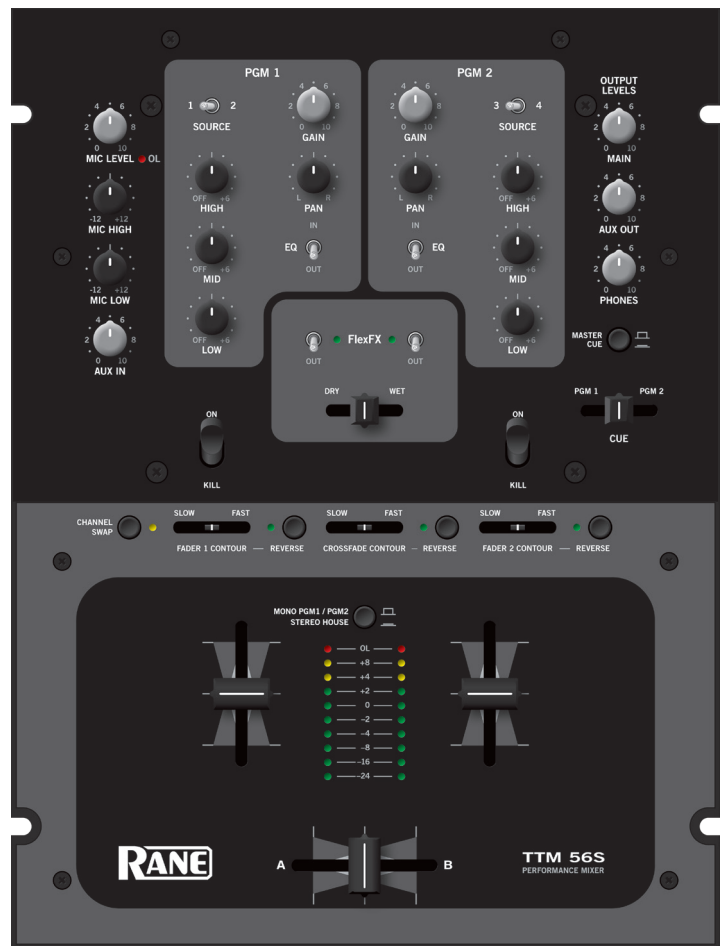
Congratulations! You are the proud owner of an exceptional performance instrument. Experienced turntablists will find the TTM 56S comfortable and familiar. The TTM 56S has many unique features which are mastered quicker if you read the manual. Right! We know you can't resist jumping right in, but please *read at least this portion of the manual*. It will help you get a good start.

About the faders: *The program faders and crossfader are magnetic, non-contact faders.* This means **No travel noise – No bleed – Ever!** The electrical performance of the faders is unaffected by use. Old habits are hard to break, but you really don't have to mess with these faders. The magnetic faders in this mixer are very different from what you are used to. Be sure and read the **Q** and **A** section on page Manual-6.

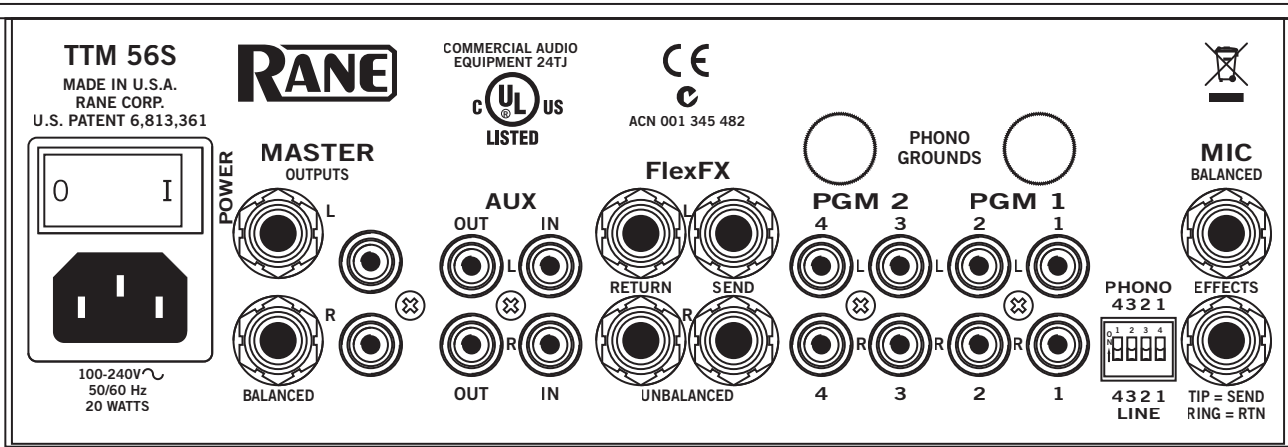
## Special Features:

- **KILL** switches behave like transform controls, to quickly cut a signal in or out. Be sure these switches are *up* to get sound!
- Separate **CONTOUR** controls for each fader and the crossfader allow continuous adjustment from smooth blend to fast cut.
- The **CHANNEL SWAP** switch allows the left-hand or right-hand fader to control PGM 1 or PGM 2.
- Auxiliary Inputs and Outputs, with independent level controls, give session mixing ability.  
**AUX** Inputs may be used for a drum machine, keyboard, etc.  
**AUX** Input comes in after the Crossfader and after the FlexFX loop.  
**AUX** Outputs may be used for recording, booth monitoring, or a second zone.  
**AUX** Output is the same mix as the Master.
- **FlexFX™** allow individual assignment of PGM 1, PGM 2 or both to the effects loop. The effects loop is *post-fader*. You get great results when using the program faders or crossfader with reverb or other delay effects. For instance, reverb and echo tails are still heard after the fader is off. The **WET/DRY** pan lets you control how much of the effect is in the mix.
- Three-band **Accelerated-Slope™** EQ allows full cut of each band. The **EQ** engage switches lets you A/B compare or quickly transform the EQ effect.
- Two 10-segment meters provide Dual-Mono-Cue *or* Stereo-Master operation.
- Yes, we included a power switch on the rear.

The flexibility of the TTM 56S can result in some initial confusion. The **CHANNEL SWAP** switch, **KILL** switches, **REVERSE** switches, Faders and Crossfader are all different ways to cut the signal. We recommend trying one thing at a time. Check that the **KILL** switches are *ON* (*up* position). Make sure the **CHANNEL SWAP** switch (and its yellow LED) is *off*. Start by changing the Contour of each fader, one at a time. See the diagrams on page Manual-5 to understand the fader responses under different settings, with **REVERSE** on and off. Once you understand the controls, start creating!



# Rear Panel Hook-up



## Power

The TTM 56S features an internal universal switching power supply that operates on any AC mains 100 to 240 VAC, 50 or 60 Hz (most places in the world). All that is required when traveling is the appropriate IEC line cord available in each country. The universal supply is a major plus for the traveling DJ. The **POWER** switch is just above the power connector. You know what to do with this, but leave it off until everything is connected.

## Inputs

**PGM 1** and **PGM 2** each have two inputs, each assignable PHONO or LINE. For a turntable input with RIAA compensation, push the corresponding switch up to **PHONO**. For all other sources such as CD or MP3 players, push the corresponding switch down to **LINE**.

**PHONO GROUNDS** provide independent ground connect points for turntables. It is very important that each turntable have a very good ground connection to one of these terminals. The thumbscrews will come off if they are over-rotated, so be careful not to spin them off and lose them.

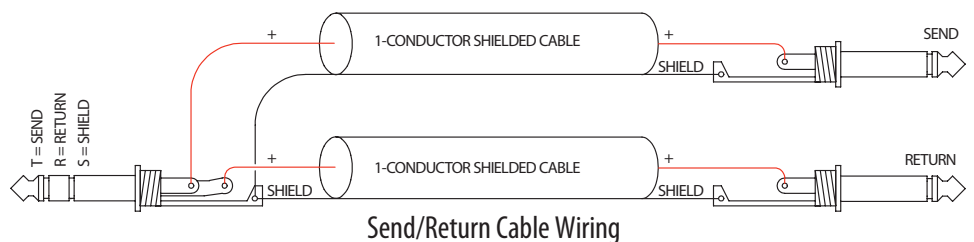
**AUX IN** may be used with a drum machine, groovebox, sampler, or another mixer's output for session mix. This Input is mixed *after* the Cross-fader and FlexFX loop.

**MIC INPUT** is a balanced input specifically designed for a dynamic mic (a condenser mic will not work).

## Effects Loops

**MIC EFFECTS** insert jack is unbalanced. It is wired for ¼" TRS, meaning Tip=Send, Ring=Return and the Shield or 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 a plug inserted and an effects box connected. If you are connecting to an effects processor with a Send/Return jack, a single TRS cable will work. If your effects processor has separate Send and Receive jacks, you need a "Y" cable. You can buy a Send/Return cable from your local music store, or you can make one of your own, as shown below.

**FlexFX EFFECTS** jacks are unbalanced mono ¼" TS (Tip and Sleeve). This stereo loop is used for output to (send) and input from (return) an effects processor. The SEND jacks provide the output *to* your effects processor. The RETURN jacks provide input for the signal returning *from* your effects processor. If you have an effects device with a single ¼" TRS, tip=send, ring=return jack, you need a "Y" cable, as shown below.



## Outputs

**AUX OUT** may be used for recording, booth monitoring, a second playback zone, or connecting another mixer for session mix. **AUX OUT** is the same signal as the Master Mix with its own Level control.

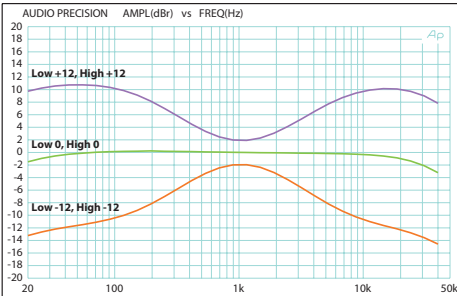
**MASTER OUT** includes two sets of stereo outputs: The ¼" TRS jacks provide balanced (Tip-Ring-Sleeve) output. Use this balanced output whenever driving equipment with a balanced input, or when running distances greater than 10 feet (3 meters). *Never* use a mono ¼" Tip/Sleeve (no ring) plug in this jack. Use the RCA unbalanced outputs for shorter runs connecting to unbalanced devices. See the RaneNote "Sound System Interconnection" if you need to convert between balanced and unbalanced or run long distances.

## Mic Section

**MIC LEVEL** sets the gain of the Mic Input. The range is off to +44 dB. There is no engage switch, so set the Mic Level to zero (0) when you aren't using it. The Mic Input minimum gain is 26 dB, so a line-level mic source (such as a wireless receiver) must be padded.

The **OL** indicator lights 6 dB before clipping. Adjust the Mic Level so the OL indicator flashes only when you really shout into the mic.

**MIC HIGH** and **LOW** tone controls provide as much as 12 dB of boost or 12 dB of cut. These controls have no effect when the controls are set to their center detent (12 o'clock).



Combined response of the Mic tone controls

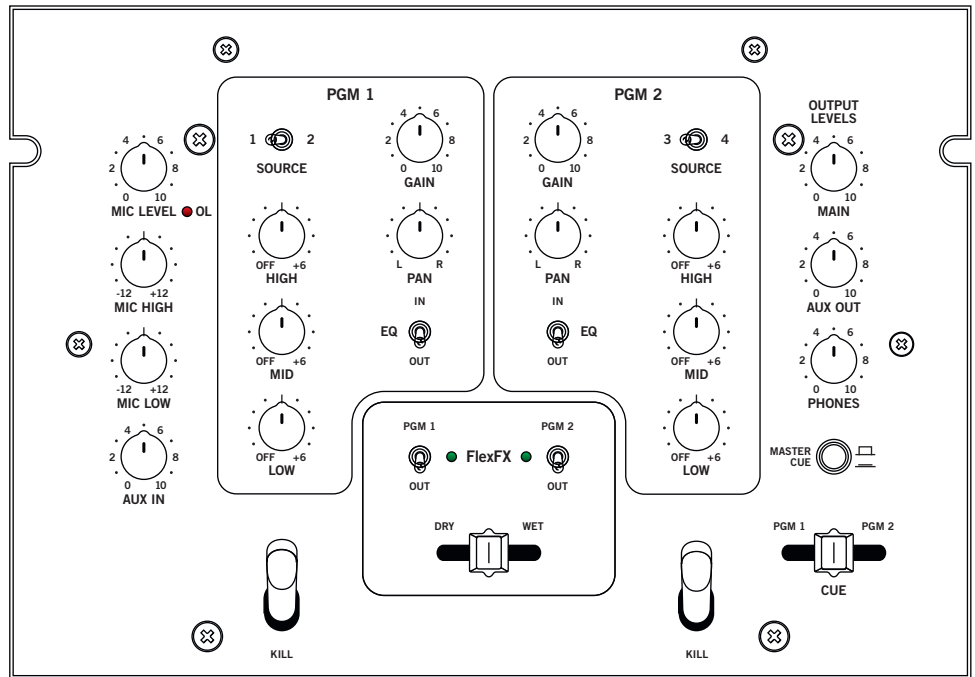
## Program Sections

**PGM 1** inputs are sent to the left side of the crossfader. (with the Fader 1 Reverse switch *out* and LED *off*)

**PGM 2** inputs are sent to the right side of the crossfader. (with the Fader 2 Reverse switch *out* and LED *off*)

**SOURCE** switches select which inputs are assigned to each of the Programs. PGM 1 can switch between inputs 1 and 2. PGM 2 can switch between inputs 3 and 4.

**GAIN** controls adjust the signal level before it gets to the Faders. Set the Gain controls to indicate an average signal level of +4 on the meter with the program faders set to maximum. Don't use the Gain controls to set the output level...use the Main Level control to set the output level. This is a very simple thing, yet makes a huge difference in mixer performance.



**EQ** switches engage the 3-band tone controls. EQ switches may be used in conjunction with the High, Mid and Low controls as “kill” switches by turning any or all of them Off. Set the rotary controls and flip the switch.

**HIGH** tone controls affect frequencies above 4 kHz. The range of control is +6 dB to Off (full kill). The center detent position leaves this filter inactive. This filter is just above the vocal range, and can make small tonal changes, or eliminate high frequency signals.

**MID** tone controls affect frequencies from 300 Hz to 4 kHz (vocal mid-range). The range of control is +6 dB to Off (full kill). The center detent position leaves this filter inactive. Use for small tonal changes or to cut midrange signals.

**LOW** tone controls affect frequencies below 300 Hz. The range is +6 dB to Off (full kill). The center detent position leaves the filter inactive. These filters influence signals below the vocal range. Use to adjust or eliminate bass beats.

**PAN** controls adjust the Left and Right balance of PGM 1 and PGM 2.

**KILL** switches provide quick program mute, much like the Transform switches on the previous TTM 56. The signal is **ON** in the *up* position, the straight out position Kills the signal.

## Aux Input

**AUX IN** adds another line-level input to the mix. This input comes in *after* the Crossfader and FlexFX Loop.

## FlexFX Loop

**FlexFX** switches send PGM 1, PGM 2 or both to the stereo effects loop. The effects loop is post-fader and post-crossfader. You get great results when using the program faders or crossfader with reverb or other delay effects. The effects loop provides separate stereo send and return jacks. The green indicator lights when FlexFX is engaged for either Program.

**WET/DRY** pan control lets you set the amount of effect in the mix. **DRY** equals no effect, **WET** gives maximum effect.

## Output Levels

**MASTER** control sets the level for both the unbalanced and balanced Master Outputs.

**AUX OUTPUT** control sets the level going to the Auxiliary Outputs.

## Faders

The **program faders and crossfader** are *magnetic, non-contact* faders. This means **No travel noise or bleed!** The electrical performance of the faders is unaffected by use. The program faders and crossfader each have their own Contour and Reverse (hamster) controls. Magnetic faders are very different from what you are used to. Read **Maintaining Magnetic Faders** on pages Manual 8-9.

**CHANNEL SWAP** switch allows the left-hand or right-hand Fader to alternately control PGM 1 or PGM 2. (Don't confuse with the REVERSE switches, see below.)

**CONTOUR** controls allow smooth, continuous adjustment of contour. The range of control is from SLOW blend to FAST cut, adjustable independently for each fader and the crossfader. See the illustrations on the next page.

**REVERSE** switches change the direction of the faders. When a Reverse switch is engaged on a PGM fader, up is down and down is up (hamster). When the Reverse switch is engaged on the Crossfader, PGM 1 goes to the B side and PGM 2 goes to the A side.

## Meters

**Meters** provide switchable true stereo Master Mix or dual-mono PGM1 / PGM2 indication of Pre-Program fader signal levels. Ten-segment resolution is provided with a one second, peak hold. Use the meter to set the GAIN controls. With the program fader set to maximum, the input GAIN should be set to indicate an average level of about +4 dB.

## Headphone Cueing

**PHONES** Level control sets the output level of the headphone amplifier.

**MASTER / CUE** switch is used to select the headphone monitor source:

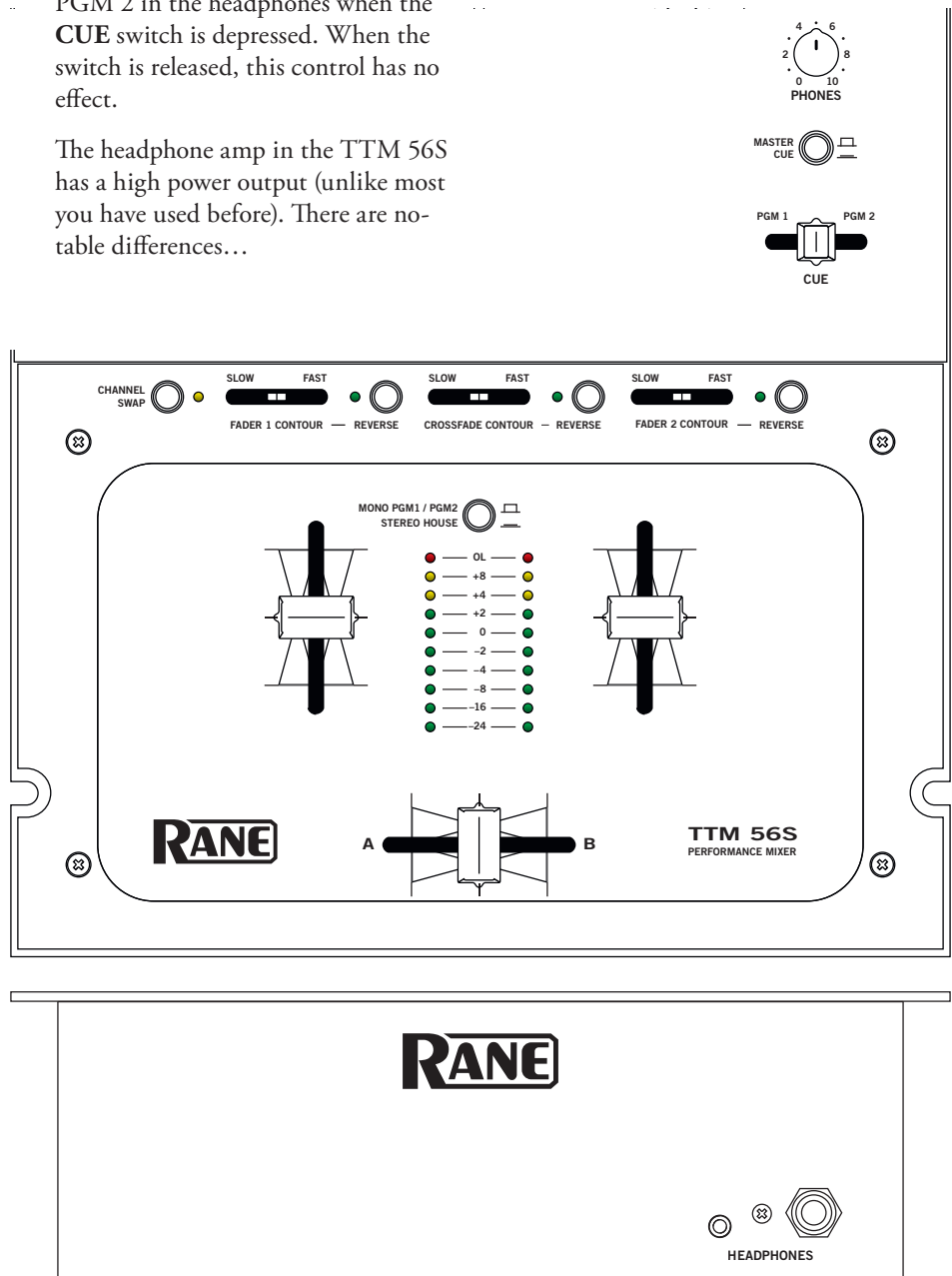
Use **MASTER** (*out*) to rehearse your performance. This signal is the same as the Master Out, but is not affected by the Master Level control.

Use **CUE** (*in*) to monitor the Program Input signal before fading in. This signal is not affected by the Program Faders or Crossfader. *Because the Effects Loop is after the Fader, you will not hear effects in the Cue.*

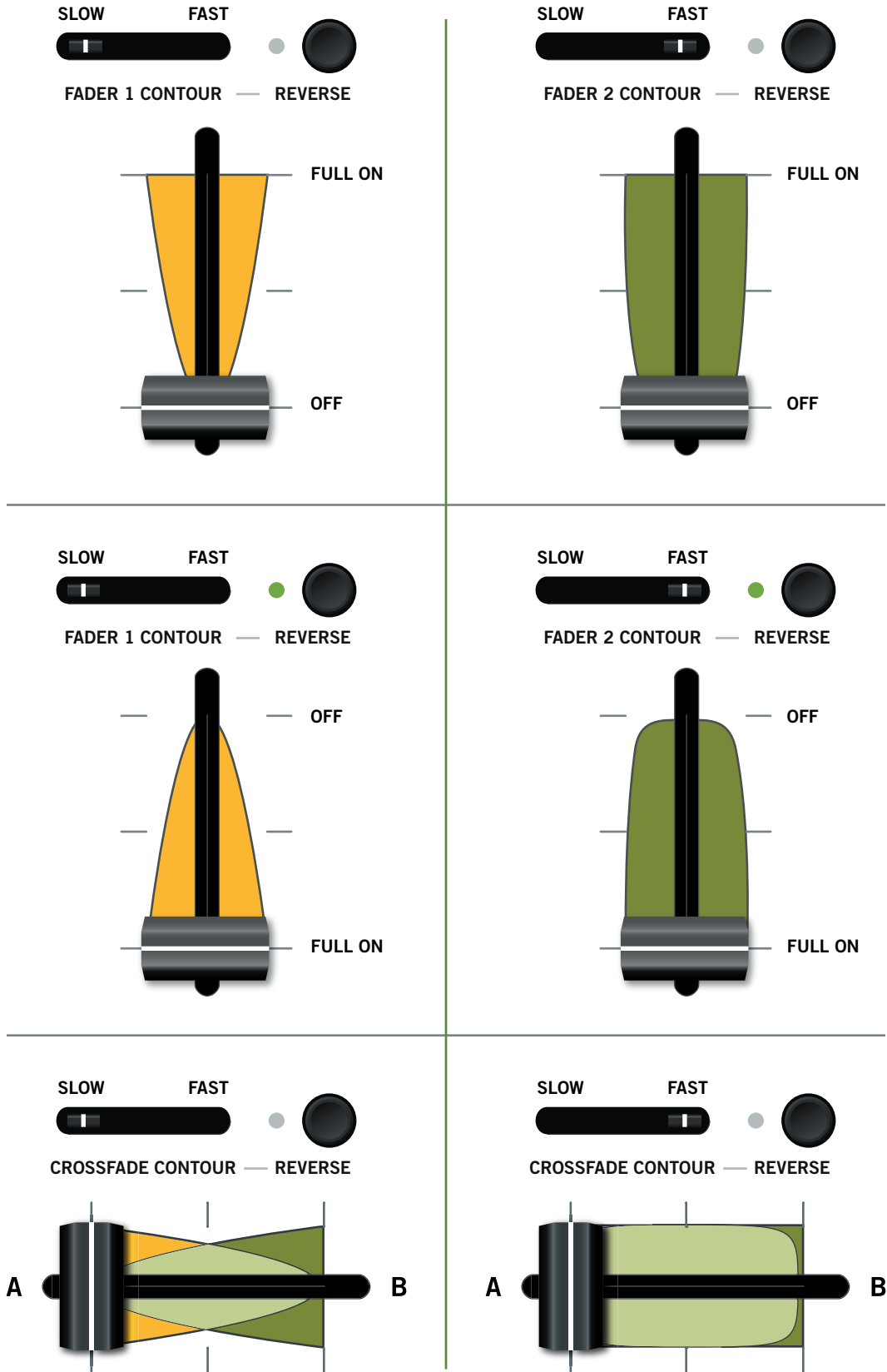
**CUE** slider Pans between PGM 1 and PGM 2 in the headphones when the **CUE** switch is depressed. When the switch is released, this control has no effect.

The headphone amp in the TTM 56S has a high power output (unlike most you have used before). There are notable differences...

- The headphone output of the TTM 56S delivers very high volume.
- To avoid pain, never put headphones on your head before plugging them in.
- Always start with the **PHONES** Level turned down, and then turn it up.
- 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.
- Low power headphone stages typically use large resistors on their outputs, which allow shorting, but prevent high power. The TTM 56S gives you high power, but does not allow shorting.



# Fader Response



Channel faders and Crossfader illustrating the effects of the Reverse and Contour controls.

## Magnetic Fader Q and A

**Q: Will I damage the faders if I spray them with bad stuff or spill bad things in them?**

**A: No.** The faders in the TTM 56S are designed with materials highly resistant to corrosion and most chemicals. *There are no electrical contacts to clean or damage.* While bad things may change the feel of the faders, bad things will not affect the sound. To clean faders that have had a bad thing put in them, follow the simple instructions on page Manual-8.

**Q: Can I install magnetic faders in any other mixer?**

**A: Sorry.** The connectors may be similar, but the circuits are very different. Connecting the faders to anything other than the intended cable in the TTM 56S could permanently damage them.

**Q: Can I install other faders in my TTM 56S?**

**A: No.** The cable connections are specially designed for Rane magnetic faders.

**Q: Can I install a different magnetic fader in my mixer or swap the position of my faders?**

**A: No.** In order to achieve the highest possible accuracy, each magnetic fader is factory calibrated for the location in which it was shipped. For information about replacement or calibration, contact Rane Customer Service. If you remove the faders for cleaning, make sure you mark them. This helps you to put them back in the same location.

**Q: Is the same fader used in the TTM 56 as the TTM 56S?**

**A: Yes.** We finally get to say yes.

## Maintaining Magnetic Faders

*There are no electrical contacts to clean!*

The faders in the TTM 56S are designed with materials highly resistant to corrosion and most chemicals. While the faders will handle millions of operations, they may become dirty over time. Bad things may be spilled or sprayed into the faders. In either case, the faders are not damaged and the sound quality is unaffected. *Cleaning is only required to maintain the feel of the faders.*

The faders are self-lubricating and with normal use, should not require additional lubrication. If you wish, you can use a light silicone lubricant rated for use with electrical parts. This will help maintain the feel. We recommend Caig DeoxIT FaderLube F100 spray lubricant.

**Order DeoxIT® F100 from CAIG Laboratories, Inc.**

12200 Thatcher Ct.

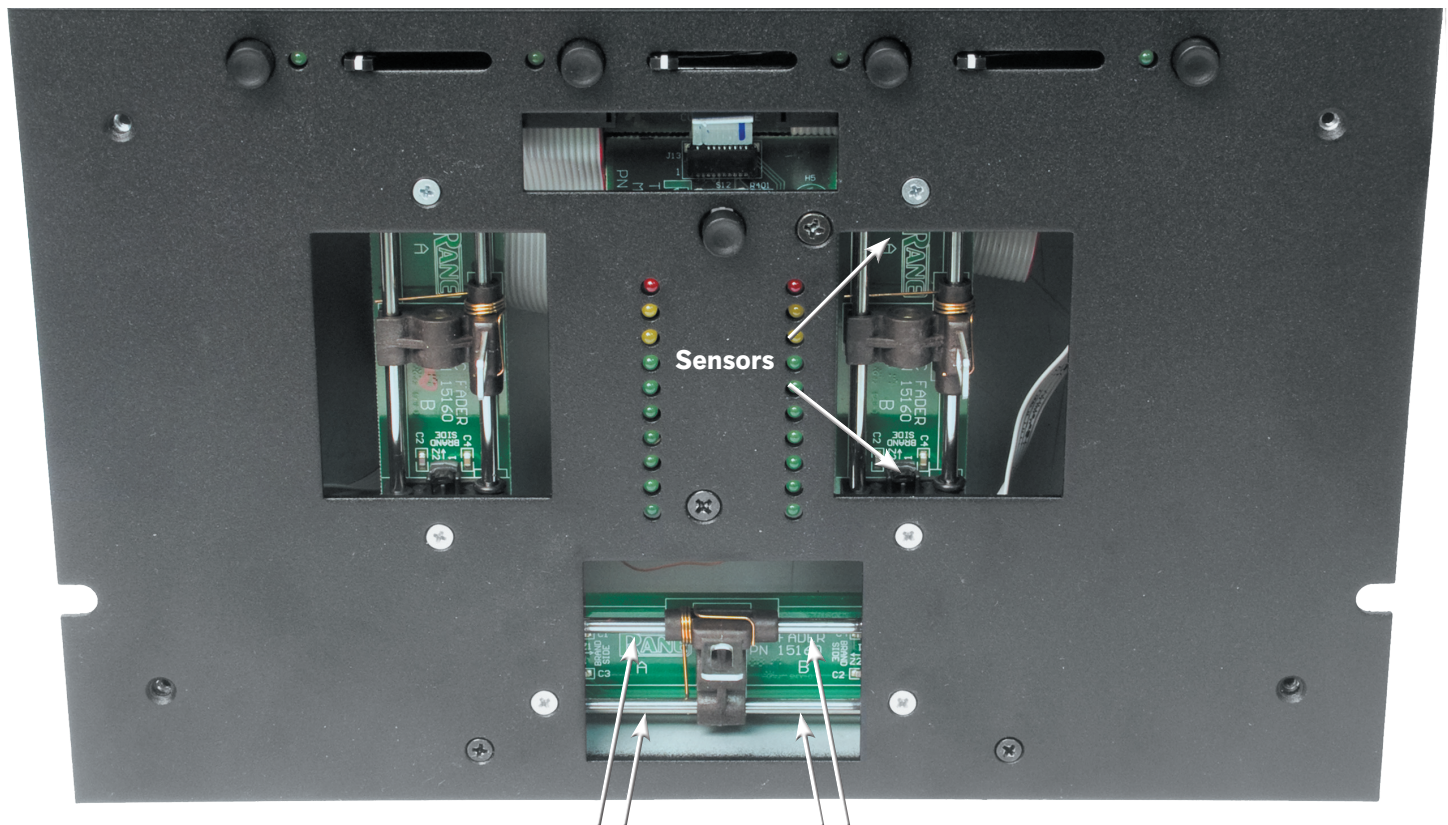
Poway, CA 92064

Phone 858-486-8388

Fax 858-486-8398

Web [www.caig.com](http://www.caig.com)

**Never use a heavy lubricant or grease.** Doing so will not damage the faders, but can undo the feel. If grease was used, it may be removed by following the cleaning instructions. Light lubrication is possible with the Lexan plate on. A couple of drops or a short spray are all that is required. Make sure the products you use are suitable for use with electrical parts that contain plastic.



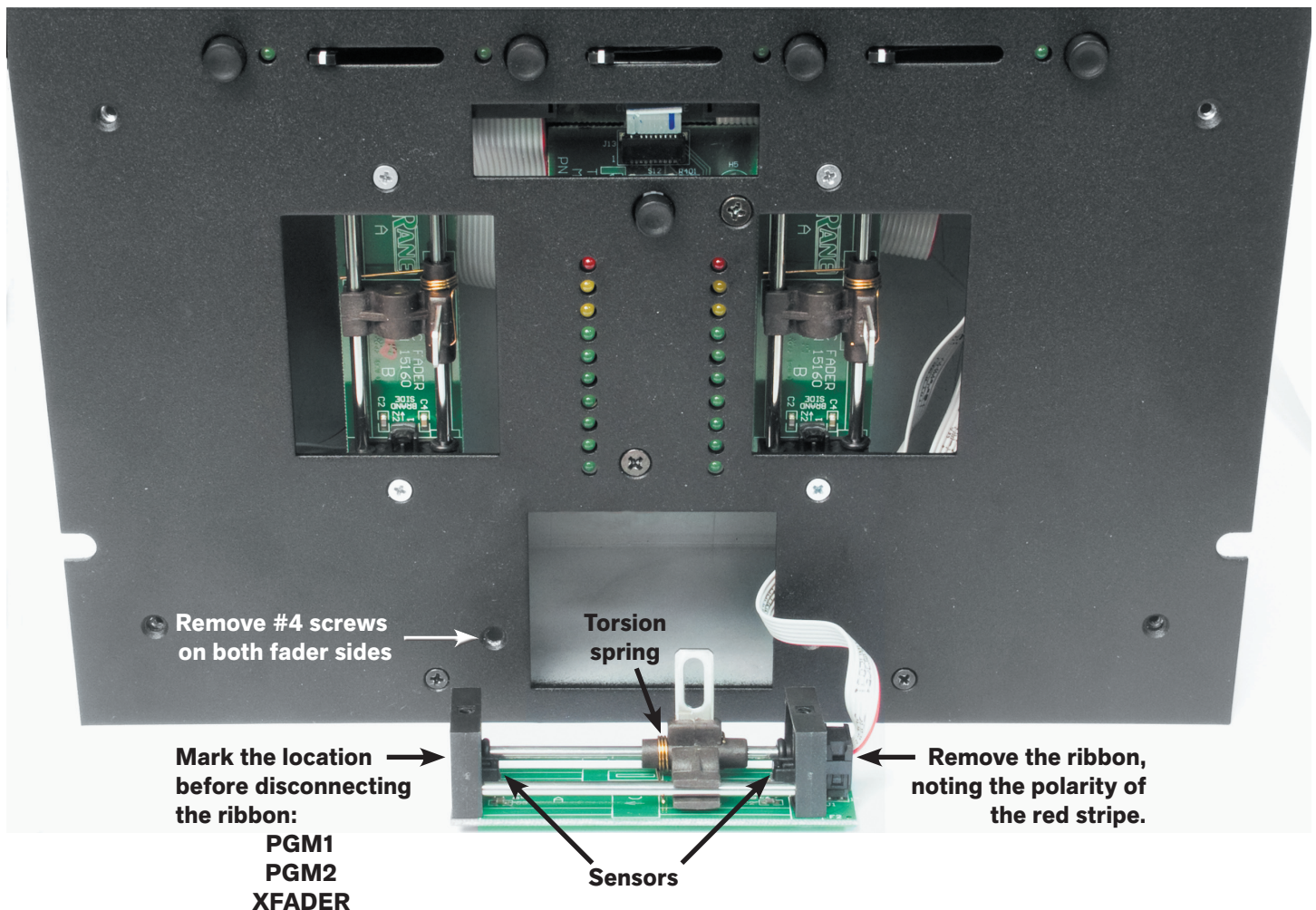
### Magnetic Slider Rail Cleaning

- Move the carrier all the way to one side.
- Use a soft lint-free cloth to wipe off rails.
- Add a drop of silicone lubricant (or quick spray from aerosol) to the center of each rail.
- Move the carrier back and forth to distribute lubricant.
- Do not bend torsion spring or touch sensors.

## Fader Removal

For more effective cleaning and lubrication, follow the directions outlined below:

1. Required tools: #1 Philips screwdriver and a pair of clean hands.
2. Disconnect the power.
3. Remove the fader caps by pulling them away from the Lexan faceplate.
4. Remove the four 4-40 screws attaching the Lexan faceplate.
5. Remove the Lexan faceplate. See the picture and instructions. The fader rails are now accessible for normal cleaning and lubrication.
6. If more thorough cleaning is required, or the fader needs replacing, remove the fader by removing the two #4 screws securing it.
7. **NOTE:** Do not disturb the position of the small sensors at each end of the Fader. If you do, make sure the parts are standing straight before reinstalling.
8. **NOTE:** In order to achieve the highest possible accuracy, *each magnetic fader is factory calibrated* for the location in which it was shipped. If you remove all the faders for cleaning, *make sure you mark them*. This helps you to put them back in the correct location.
9. Disconnect the ribbon cable, noting the orientation of the red stripe.
10. Sugary liquids spilled into a fader may be removed by thoroughly rinsing the part in hot water. Removal of grease or other stubborn debris may require alcohol or contact cleaner.
11. Make sure the part is clean and dry before lubricating or reinstalling.
12. To reassemble, reverse the disassembly procedure.
13. Problems? Contact Rane Corporation customer service at 425-355-6000.



# TTM 56S Block Diagram

