

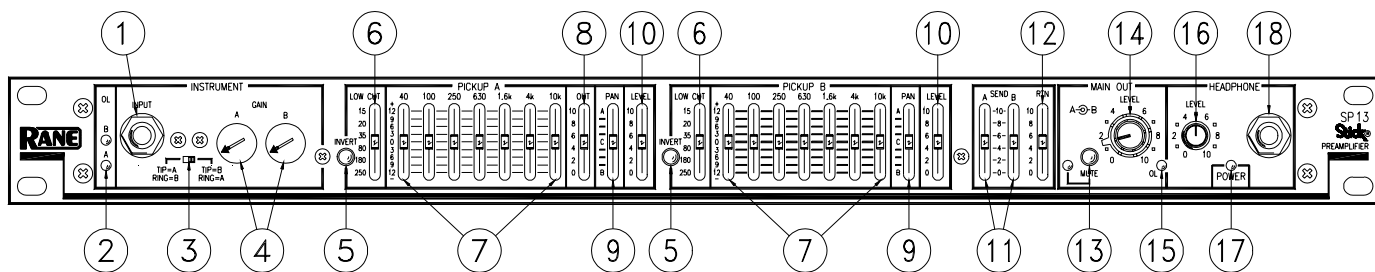
QUICK START

The SP 13 accommodates the signals from two pickups from a Stick® instrument, where the pickups are wired to the tip and ring of a standard stereo ¼" TRS (Tip, Ring, Sleeve) plug. You do not need internal preamps when using the SP 13.

1. Slide the Input Wiring switch to the correct position agreeing with your pickup wiring situation.
2. Turn the **MAIN OUT LEVEL** controls down.
3. Connect the SP 13 to your amplifier using the ¼" **MAIN OUTPUTS** or use the **HEADPHONE** jack.
4. Initially, turn the **A** and **B INSTRUMENT GAIN TRIM** controls half way up.
6. Move each **LOW CUT** slider to the top (15 Hz); center all EQ sliders; center the **PAN** sliders; leave the **INVERT** pushbuttons out; and position the **LEVEL** sliders to "4"
7. Plug in the instrument to the **INPUT** jack on the front of the SP 13 with a stereo ¼" TRS cable.
8. Power up the SP 13, then turn on your amplifier.
9. Play your instrument and slowly turn up the **MAIN OUT LEVEL** controls. You should hear sound from your speakers. If not, recheck all settings and wiring, and read the next few pages.

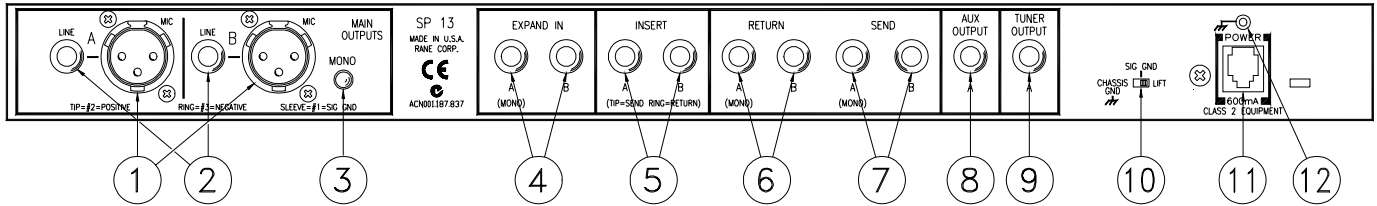
Never connect anything except an approved Rane power supply to the red thing that looks like a telephone jack on the rear of the unit. This is an AC input and requires special attention if you do not have a power supply exactly like the one originally packed with your unit. See the full explanation of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

FRONT PANEL DESCRIPTION



- ① **Stick® INSTRUMENT INPUT:** is a stereo ¼" TRS (Tip-Ring-Sleeve) INPUT jack for use with a Stick instrument with two pickups; Use a balanced or stereo ¼" shielded cable to connect your instrument to this Input. However, this also accepts a mono input. When using a mono cable, signal is routed to the TIP selected by the Input Wiring Switch (see ③).
- ② **A & B Input OVERLOAD indicators:** are useful in monitoring pickup level and initially in setting PICKUP GAIN TRIM controls. These indicators light approximately 4 dB before actual clipping, so occasional flickering is okay, but they should never be allowed to light steadily.
- ③ **Input wiring switch:** allows choice of Input wiring. Either TIP=A and RING=B, or vice-versa.
- ④ **Input INSTRUMENT GAIN trims:** set the proper Gain for each pickup. Range is from 6 dB minimum to 60 dB maximum.
- ⑤ **INVERT switches:** Invert the polarity (phase) of the A pickup with respect to the B pickup. Either A or B PICKUPS may be individually Inverted.
- ⑥ **LOW CUT frequency:** adjusts the corner frequency of the LOW CUT (high-pass) filter from 15 Hz to 250 Hz. Use to reduce unwanted low frequencies in either A or B Pickups.
- ⑦ **7-band graphic equalizer boost/cut controls:** set the amount of boost/cut for each of the indicated bands in both Pickups A and B. A grounded center detent guarantees flat response for filters not used.
- ⑧ **PICKUP A OUT control:** adjusts the level of the AUX OUTPUT jack. This Output is independent of the LEVEL and MAIN OUT LEVEL controls.
- ⑨ **PAN controls:** for both PICKUPS A and B allow signal routing anywhere between MAIN OUT A and B.
- ⑩ **LEVEL controls:** for both PICKUPS A and B set the overall Level of each signal.
- ⑪ **SEND A/B controls:** adjust the amount of signal at each of the SEND jacks (to external signal processing).
- ⑫ **RETURN control:** is a "stereo" Return. Controls the amount of *A and B* entering the RETURN jacks.
- ⑬ **MAIN OUT MUTE button:** cuts off the signal to both A and B Main Outputs. Does *not* affect the Headphone Output. The red LED indicates Muted Output.
- ⑭ **MAIN OUT A & B LEVELS:** are concentric controls used to separately set the Main A & B Output Levels.
- ⑮ **MAIN OUT OVERLOAD indicator:** monitors *both* A and B Main Outputs. An overload condition (within 4 dB of clipping) on *either* Output causes this red indicator to light.
- ⑯ **HEADPHONE LEVEL:** controls the volume of the HEADPHONE Output jack.
- ⑰ **POWER indicator:** glows yellow when the proper power supply is connected and powered.
- ⑱ **Headphone jack:** Accepts standard stereo headphones rated from 32-600 ohms equipped with a ¼" TRS plug.

REAR PANEL DESCRIPTION



- ① **MAIN OUTPUTS—MIC-level:** Two XLR connectors used as a direct feed to mixing console mic inputs. Pin 2 is “+” positive, pin 3 is “-” negative, and pin 1 is signal ground.
- ② **MAIN OUTPUTS—LINE-level:** Two ¼" TRS (Tip-Ring-Sleeve) connectors deliver the Main A & B Line Level Outputs. No surprises here: the tip is “+” positive, the ring is “-” negative and the sleeve is signal ground.
- ③ **MAIN OUTPUTS MONO button:** Engaging this pushbutton combines (or Monoes) the Main A & B Output.
- ④ **EXPAND IN A & B jacks:** Two unbalanced ¼" TS jacks used to expand the SP 13. These Inputs sum (pre-Main Level control) with the Main A & B signals. Mono expansion is done using *only* the EXPAND IN A jack. As long as nothing is plugged into the B jack, the signal from EXPAND A automatically drives EXPAND B. These jacks also provide an auxiliary input path from another mixer, instrument, tape, etc.
- ⑤ **INSERT loop A & B jacks:** Two unbalanced ¼" TRS jacks wired per the tip=send, ring=return convention. Allows placing an outboard signal processor in series with the main signal paths.
- ⑥ **RETURN A & B jacks:** Two unbalanced ¼" TS jacks used as the return path from the OUTPUTS of an outboard signal processor. Mono signals use *only* the RETURN A jack. As long as nothing is plugged into the B jack, the signal from RETURN A automatically drives RETURN B.
- ⑦ **SEND A & B jacks:** Two unbalanced ¼" TS jacks are used to connect to the *inputs* of an outboard signal processor. Mono effects units should wire *only* to the SEND A jack.
- ⑧ **AUX OUTPUT:** An unbalanced ¼" TS jack gives a direct dry Output signal from the A Pickup only. The PICKUP A OUT slider controls the amount of signal.
- ⑨ **TUNER OUTPUT:** An unbalanced ¼" TS jack used for tuner connection, fed by both pickups. Located post EQ but pre-LEVEL, this Output is unaffected by either the LEVEL or OUT controls. For convenience, the tuner may be left connected during performances.
- ⑩ **Ground lift switch:** provides the ability to separate chassis ground and signal ground. Normally, this switch should be in the “grounded” position. In some circumstances, moving it to the opposite position eliminates hum and buzz problems.
- ⑪ **Remote power supply input:** This unit is supplied with an RS 1 Remote AC Power Supply (RAP) suitable for connection to this input jack. The power requirements call for an 18 VAC center-tapped transformer. *This is not a telephone jack. Never use a power supply other than the one supplied or a replacement approved by Rane.* Using any other type of supply may damage the unit and void the warranty.
- ⑫ **Chassis grounding screw:** A #6-32 screw is used for chassis grounding purposes. See CHASSIS GROUNDING below.

CHASSIS GROUNDING NOTE

If after hooking up your system it exhibits excessive hum or buzzing, there is an incompatibility in the grounding configuration between units somewhere. 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.
3. Units with outboard power supplies do not ground their chassis through the line cord. Make sure that these units are grounded either to another chassis which is earth grounded (such as the amplifier), or directly to the grounding screw on an AC outlet cover.

Please refer to RaneNote 110, “Sound System Interconnection” (included with this manual) for further information on system grounding.

OPERATING INSTRUCTIONS

OPTIMIZING PICKUP GAIN CONTROLS

The Gain of each pickup input is adjusted via recessed INSTRUMENT GAIN trims on the front of the SP 13. Unity Gain is located at approximately 9:00. To set the Gain use a screw driver, guitar pick, or other suitable tool to turn the trims clockwise until a very strong input signal (e.g. strumming a loud chord) causes the overload LED to flicker occasionally. For extra headroom, turn the trims slightly counterclockwise.

SETTING UP EACH PICKUP

Start by turning one of the Pickup LEVEL controls to off or "0", and the other one to "10". Now play your instrument and use the active Pickup's LOW CUT filter and EQ sliders to adjust for the desired timbre. Now turn this Pickup's LEVEL control *off* and repeat the procedure for the other pickup. When through, adjust both LEVEL controls for optimum loudness balance and use the PAN sliders to create a panoramic sound field between the A and B Outputs.

If the sound seems thin or lacks bass when both Pickups are turned up, try using one or the other of the INVERT pushbuttons. This problem often occurs when pickups are out-of-phase and their outputs are canceling instead of combining.

EFFECTS LOOPS

Most often the SEND/RETURN loop is used for a reverb, while something more specialized like a compressor or multi-effects processor fills the INSERT loop.

Hookup is simple: connect the SENDs to the *inputs* of the reverb and run the *outputs* back to the RETURN jacks. *To send mono and return stereo*, connect only the SEND A (MONO) jack to the input and return both outputs to the RETURN jacks; *or to send and receive mono* use just the A (MONO) SEND and RETURN jacks. The SP 13 splits and sums the mono input equally with the A and B Outputs. Adjust the SEND & RETURN sliders as necessary for correct levels.

The INSERT loops are the single ¼" send/return type where tip=send and ring=return. Use standard stereo (2-conductor) cable with a stereo jack on one end, then split it out into two mono (1-conductor) cables with mono jacks on the other. These are common enough, you shouldn't have to make them. There are no controls to worry about with this loop.

SEND/RETURN vs. INSERT

An effect unit will deliver a full "wet" signal when patched into the INSERT. A standard TRS insert style (tip-send, ring-return) Y-cord gets input and output from the INSERT jack to the effects unit. In the SEND and RETURN loop, the most you can obtain is a 50% effects signal, because the dry signal is internally mixed with the return.

Another effects tip: If you want to put one effect on just the A, and a different effect on just the B, but you want a mono output, just pan everything hard left and right for stereo and push the MONO switch on the rear of the SP 13.

EXPAND JACKS

Signal entering the SP 13 through these jacks sums (post-EQ and effects loops) with the internal signal. Mono signal applied to the A (MONO) EXPAND IN jack sums equally into Main A and B Outputs.

MAIN OUTPUTS

Two sets of Main Outputs exist. Both are fully balanced, both may be used at the same time. The ¼" TRS jack operates at line-level and should be used to drive additional signal processing, your power amplifier, or any line-level inputs.

The XLR connectors are intended for mic-level inputs on mixers, tape recorders or a snake. This level is 40 dB less than the line-level outputs. It is, in effect, a built-in attenuator.