

### QUICK START

These virgin pages tremble at your touch. You're eyes, the first. Their desperate inquisitive scanning overwhelms. The summer air burns with anticipation. Do what you must, but whatever you do, don't stop...PLEASE DON'T STOP...reading that is, at least this section before you torch it.

Here's some quick highlights:

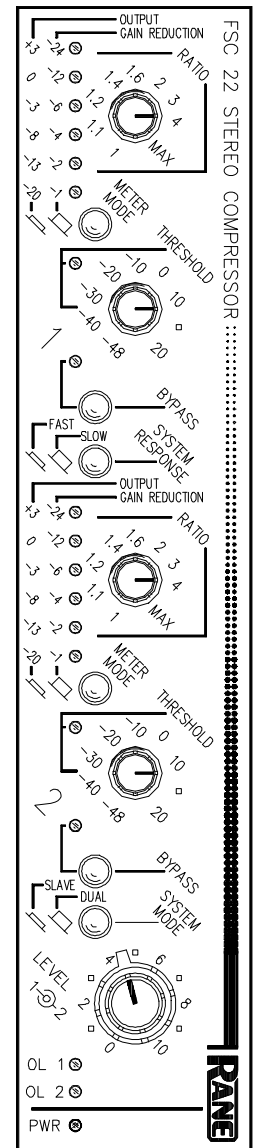
Set the rear **INPUT TRIM** switch for the appropriate gain for your signal levels. Don't be thrown by the combo Input connectors; they take either 1/4" TRS or 3-pin (XLR-type) plugs. Both Output connectors may be used at the same time if needed, e.g., splitting to different zones, etc.

Be sure the **SYSTEM MODE** switch is in its out (**DUAL**) position, as are the **BYPASS** switches. Initially press the **METER MODE** switch in. Now the meter reads Output Level in dBu—very useful during set-up. Remember to switch it out when through, so it returns to its main role of displaying Gain Reduction.

Set the **LEVEL** controls to "7" for unity gain—a good place to start. Use the **BYPASS** controls to A-B levels.

When used with true stereo program, press the **SYSTEM MODE** switch in to the **SLAVE** position. This causes both Channels to operate equally if either exceeds its **THRESHOLD** setting.

*NEVER CONNECT ANYTHING EXCEPT AN RS 1 OR OTHER APPROVED RANE AC POWER SUPPLY TO THE RED CONNECTOR 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 an operational power supply *EXACTLY* like the one originally supplied with your unit. A Rane Model FRS 8 or RAP 10 power supply is acceptable as well.



### SYSTEM CONNECTION

Locating the FSC 22 in your system depends on the application. When assembling a sound reinforcement system, place the FSC 22 between the equalizer (if used) and the active crossover, or the power amplifier if using passive crossovers.

In recording applications, locate the FSC 22 in the insert loops on the mixing console, or in series with the outputs before the recorder. Most consoles allow headphone monitoring of the processed signal (i.e., post inserts). A most useful feature.

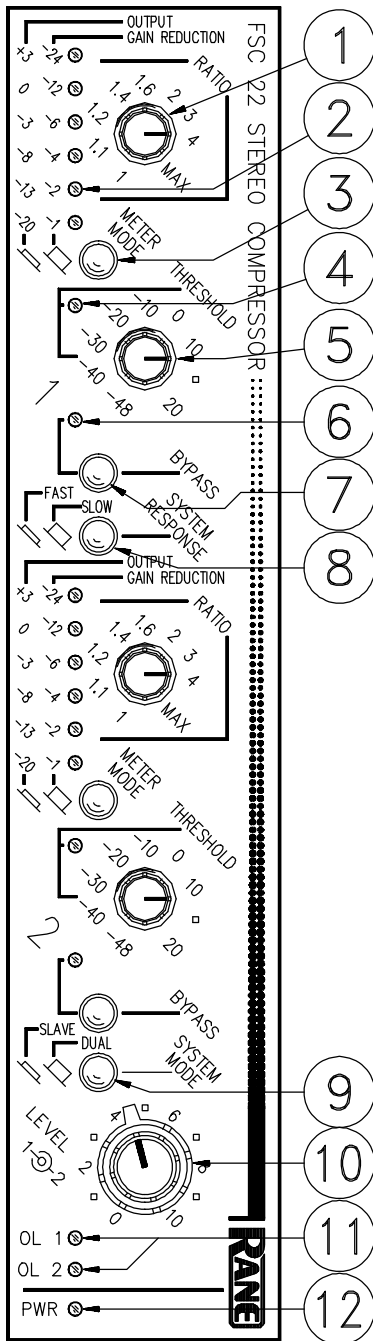
When using the FSC 22 on mixdown, connect it to the

output of the multichannel recorder, or in the inserts of the mixdown console.

Many recording situations require connecting the FSC 22 to the patch bay in the system. This makes it easy to move from one signal path to another, as new applications dictate.

Use only fully balanced wiring of this and all components, without signal ground ever connecting between units. All shields should be chassis, i.e., earth grounded. Consult Rane Note 110, an application guide available from Rane Corporation or your local Rane dealer. This note details standard wiring conventions which help reduce noise and distortion.

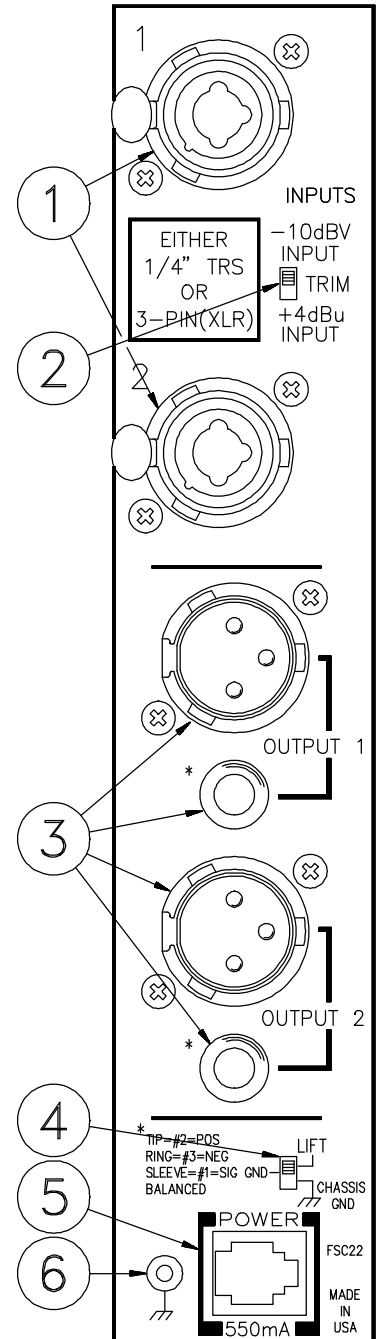
## FRONT PANEL DESCRIPTION



- 1. RATIO CONTROL.** This rotary control determines the slope of the compressor for signals exceeding threshold. Full counter-clockwise rotation of the **RATIO** control disables all Compressor activity.
- 2. DUAL FUNCTION METER.** This six segment LED meter indicates either Gain Reduction or Output Level as determined by the position of the Meter Mode Switch. **GAIN REDUCTION** mode displays the amount of reduction (below unity) applied to the audio signal by the VCA. **OUTPUT** mode displays the balanced output level in dBu, i.e. where 0dBu = 0.775 Vrms.
- 3. METER MODE PUSHBUTTON.** The *out*, or disengaged, position selects **GAIN REDUCTION** meter mode. The *in*, depressed, or engaged, position selects **OUTPUT** meter mode.
- 4. THRESHOLD LED.** This yellow LED illuminates any time the input signal exceeds the **THRESHOLD** setting.
- 5. THRESHOLD CONTROL.** The position of this rotary knob determines above what input level the Compressor/Limiter functions.
- 6. BYPASS LED.** A red LED indicating the **BYPASS** switch is engaged.
- 7. BYPASS SWITCH.** A passive switch used to bypass all active circuitry in this channel. Press *in* to Bypass. Useful for A-B comparisons and to restore signal path should power fail.
- 8. SYSTEM RESPONSE SWITCH.** Use this pushbutton to select the desired attack/release response. *Out* chooses **SLOW**; *in* chooses **FAST**.
- 9. SYSTEM MODE SWITCH.** In the *in* (**SLAVE**) position, this switch causes both Channels' Compressors to act together, i.e., they are "slaved". All controls for both Channels remain active, so independent settings are still possible; however, whenever a signal in either Channel exceeds its setting, then *both* Channels change by the same amount. In the *out* (**DUAL**) position, both Channels operate independently.
- 10. OUTPUT LEVEL CONTROLS.** This concentric control increases or decreases the output Level for each Channel. Up to 10dB of gain is available. Unity gain is about "7" for balanced outputs, and "8" for unbalanced outputs.
- 11. OVERLOAD LEDS.** Illuminates any time either output signal gets to within about 4dB of clipping. Occasional flickering is okay, continuous is not.
- 12. POWER INDICATOR LED.** Hey, if it's lit, you're fit; if not, call a doc. And while we're on the subject of power, let me take this opportunity to tell you just what I think about runaway government ...

## REAR PANEL DESCRIPTION

- 1. INPUT CONNECTORS.** An active balanced input utilizing a combo connector compatible with either a 3-pin (XLR-type) or a 1/4" TRS plug. Polarity follows the AES/ANSI/IEC standard of pin 2 (tip) positive, pin 3 (ring) negative and pin 1 (sleeve) signal ground.
- 2. INPUT TRIM SWITCH.** In its **+4dBu** position, the input gain is unity. In the **-10dBV** position, the input gain is increased by 12dB (although mathematically suspicious, it really is 12dB, not 14dB). This compensates for so-called "semi-pro" (which I guess means you sorta get paid) recording equipment. **THE FRONT PANEL CALIBRATION MARKS ASSUME THIS SWITCH IS IN THE +4dBu POSITION.** The only exception to this is the Output Meter Mode marks which remain accurate in either position.
- 3. OUTPUT CONNECTORS.** These connectors follow the polarity convention outlined above. Wired in parallel, both connectors may be used simultaneously, if needed.
- 4. GROUND LIFT SWITCH.** In its **LIFT** position, signal ground and chassis ground are not connected.
- 5. REMOTE POWER SUPPLY INPUT.** This unit is supplied from the factory with a Model RS 1 Remote Power Supply suitable for connection to this input jack. This unit's power requirements call for an 18 volt AC center-tapped transformer only. *THIS IS NOT A DC INPUT. IT IS NOT A TELEPHONE JACK. NEVER USE A POWER SUPPLY OTHER THAN THE ONE SUPPLIED OR AN EXACT REPLACEMENT OBTAINED FROM RANE CORPORATION.* Using any other type of supply may damage the unit and void the warranty.
- 6. CHASSIS GROUND POINT.** A 6-32 screw is used for chassis grounding purposes. See **CHASSIS GROUNDING** note on last page for details.



## OPERATING INSTRUCTIONS

After properly wiring the FSC 22 into your system, normal operation begins. If any of the following procedures do not produce the required results, take a step backwards and check your wiring.

**PRE-FLIGHT CHECKLIST:** Before proceeding, set all controls to the following recommended positions:

1. **REMOTE POWER...Off**
2. **RATIO...Full CCW**
3. **METER MODE... In (OUTPUT)**
4. **THRESHOLD...Full CW**
5. **BYPASS...Out**
6. **SYSTEM RESPONSE...Out (SLOW)**
7. **SYSTEM MODE...Out (DUAL)**
8. **OUTPUT LEVEL...Full CCW**
9. **INPUT TRIM...+4dBu or -10dBV, as required**
10. **GROUND LIFT...LIFT**

With all of the preceding properly set, turn the Remote Power on. Gradually rotate the **LEVEL** controls CW until sound is heard. Use the **BYPASS** switch to set the **LEVEL** control for unity gain operation (around "7" for balanced use). At unity gain, cycling the **BYPASS** switches with audio passing through the unit should yield no difference in level or sound dynamics. The **OUTPUT** meters indicate the output level in dBu. Once gain is correct, release the **METER MODE** pushbutton to convert the meter to **GAIN REDUCTION** use.

**COMPRESSION.** Set the **THRESHOLD** control for the desired level at which you want compression to begin. You should see the **THRESHOLD** LED illuminate as signal goes above and below this level. Use the **RATIO** control to set the required gain reduction slope. Watch the meter to observe the gain reduction action for all signals above the **THRESHOLD** setting.

**LIMITING.** Rotate the **RATIO** control fully CW to its "MAX" position. This produces a limiting slope of at least 10:1. Assuming your input signal has peaks in excess of -20dBu, you should be able to set the **THRESHOLD** control CCW to see some gain reduction occur on the meter simultaneously with a randomly illuminating **THRESHOLD** LED. You should begin to hear the difference. Leave these controls at whatever Limit level is appropriate.

**STEREO.** When using the FSC 22 as a true stereo processor, e.g., Left signal in Channel 1 and Right signal through Channel 2, it is a good idea to operate the unit in the **SLAVE** mode to prevent large balance and image shifts. While in the **SLAVE** mode, both Channels attenuate equally whenever either one exceeds **THRESHOLD**, thereby maintaining the stereo image.

For additional information on compressor operation, please ask your dealer or the Rane factory for a copy of Rane Note 130, "The DC 24 Users Guide".

## IMPORTANT NOTE

### CHASSIS GROUNDING

Rane commercial equalizers are supplied with a rear mounted ground-lift switch. The unit is shipped with this switch in the "grounded" position, tying circuit ground to chassis ground. If after hooking up your system it 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.
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 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 Rane Note 110 (supplied with your unit and available on request at no charge if you lose it) for further information on system grounding.