



HC 6

HEADPHONE CONSOLE



IMPORTANT SAFETY INSTRUCTIONS

For the continued safety of yourself and others we recommend that you read the following safety and installation instructions. Keep this document in a safe location for future reference. Please heed all warnings and follow all instructions.

Do **not** use this equipment in a location where it might become wet. Clean only with a damp cloth.

This equipment may be installed in an industry standard equipment rack. We recommend that all mounting holes be used, providing the best physical support. The equipment may be used as a table top device, although stacking of the equipment is dangerous and not recommended.

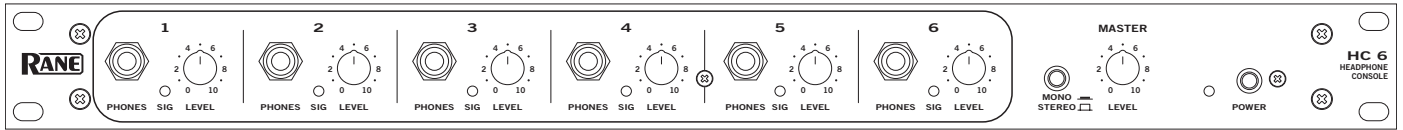
Do not directly block any of the ventilation openings. If rackmounting, please provide adequate ventilation. Equipment may be located directly above or below this unit, but note that some equipment (like large power amplifiers) may cause an unacceptable amount of hum or may generate too much heat and degrade the performance of this equipment.

Protect the power cord and plug from damage caused by being walked on or pinched. Protect the line cord, where it exits the unit, from excessive strain. Only use attachments and accessories specified by Rane.

Unplug this equipment during lightning storms or when unused for long periods of time.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug damage, spilled liquid, fallen objects into an opened chassis, exposure to rain or moisture, a dropped unit, or abnormal operation.





QUICK START

Okay, you're in a hurry. Well this section's just for you. It explains enough of the HC 6's workings to keep you out of trouble. It allows operation without reading the whole manual. Please read at least this section to ensure reasonable operation of the unit.

The HC 6 operates from either a common stereo or mono source, or from individual stereo sources. For a common stereo source, plug the left and right input plugs into the respective **MASTER INPUTS** jacks. The Inputs accept balanced or unbalanced sources. Just plug them in. This source is now routed to each of the six input Channels to drive all Outputs.

For a single mono source feeding all headphones, connect it to one of the **MASTER INPUT** jacks and engage the **STEREO/MONO** switch. Set the overall input level with the **MASTER CONTROL**, and use the **CHANNEL LEVEL** controls for individual headphone levels.

Use the separate stereo **IN** jacks when driving a pair of headphones with different program material than what is on the **MASTER INPUTS**. Connecting a plug into these jacks automatically disconnects that Channel from the Master Input program material. These Inputs may also be converted to balanced mono inputs by moving internal jumpers. See page Manual-4.

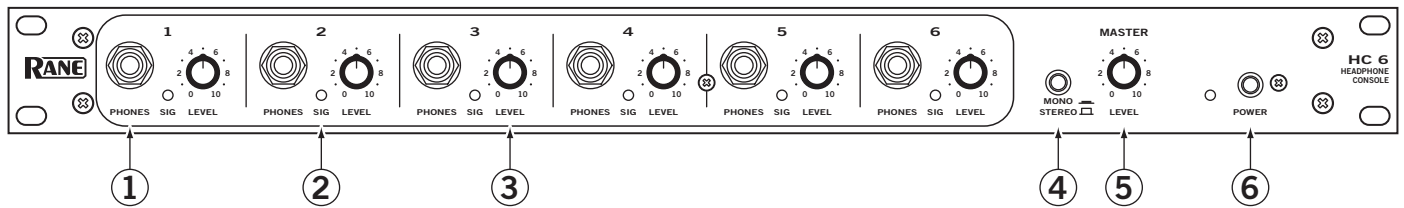
Never connect anything except a Rane power supply to the thing that looks like a telephone jack on the rear of the unit. This is an AC input and requires special attention if you do not have a power supply *exactly* like the one originally packed with your unit. See the full explanation of the power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

HC 6 CONNECTION

When first connecting the HC 6 to other components, *leave the power supply for last*. This gives you a chance to make mistakes and correct them without damage.

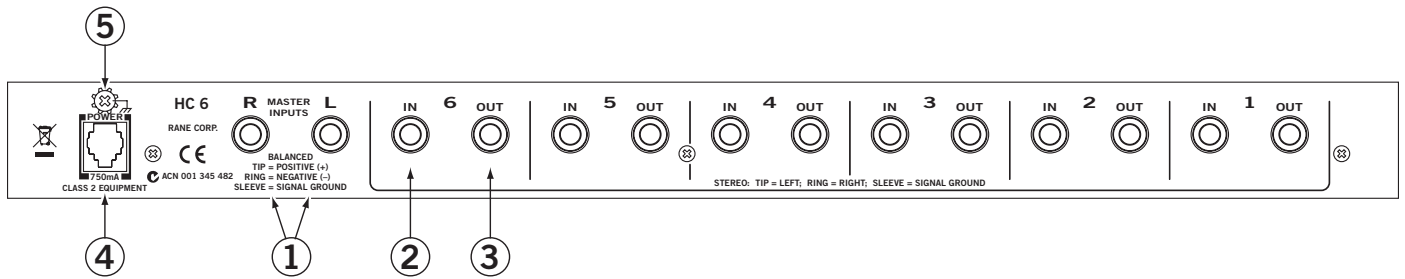
1. With the power switch in the *off* position, plug the power supply line cord into the rear panel. Locate the power supply away from the HC 6 and other hum sensitive equipment.
2. Plug the outputs from a mono or stereo source into the **MASTER INPUTS**. For unbalanced systems use a standard 1/4" TS cable. For balanced operation, use a stereo 1/4" TRS connector with pin 2 (+) wired to the Tip; pin 3 (-) wired to the Ring; and pin 1 (ground) wired to the Sleeve. Please consult the RaneNote, "Sound System Interconnection" (enclosed) for additional wiring arrangements.
3. When rack mounting the HC 6, you may wish to permanently wire the rear headphone Outputs to remote jack locations, such as in walls of a studio or other rooms. Use the front panel Outputs for local or control room monitoring.
4. You might also consider wiring the six direct stereo INs permanently to a patch bay or monitor mixer, but *only* if you do not plan to use the **MASTER INPUTS** as well. Whenever a plug is inserted into any individual stereo IN, the **MASTER INPUTS** are bypassed for that particular channel. So for maximum flexibility, we suggest that only the **MASTER INPUTS** be permanently wired and that the direct stereo INs be patched as necessary.

FRONT PANEL DESCRIPTION



- ① **Front panel PHONES Output jacks** are in parallel with the rear panel stereo Output jacks. Use them to monitor any of the six Channels for level or mix adjustments, or for easy access when the HC 6 is rack mounted. Plugging into these front jacks does *not* disengage the rear Outputs.
- ② **SIGnal present indicators** light (green) with any input signal above -20 dBu. See OPERATING INSTRUCTIONS (on page Manual-4) for complete details.
- ③ **Individual LEVEL controls** set the volume for each set of headphones, regardless of whether they are driven from the MASTER INPUTS or from the direct stereo INs. When using the front and rear panel headphone jacks together, this control varies the level of each headphone simultaneously.
- ④ **MONO / STEREO switch** converts the MASTER INPUTS from stereo to mono so that a single input cable drives both sides of the headphones.
- ⑤ **MASTER LEVEL** sets the volume simultaneously to all headphones driven from the MASTER INPUTS. This does not alter the volume on any headphones driven from the direct stereo INs.
- ⑥ **POWER switch.** Your basic, straightforward power switch. When the yellow LED is lit, the HC 6 is ready to go.

REAR PANEL DESCRIPTION



- ① **MASTER INPUTS** are automatic balanced/unbalanced Inputs, which accept either a ¼" TRS (tip-ring-sleeve) plug for balanced operation, or a ¼" TS (tip-sleeve) plug for mono operation. You do nothing different when hooking up balanced or unbalanced lines. The HC 6 is one smart dude. He *knows* what you are doing so you better watch out.
- ② **Direct Stereo INs** allow each stage to be driven separately, from any source. Whenever a plug is inserted into one of these Inputs, the MASTER INPUTS are disconnected from that stage (and only that stage). I told you the dude be smart!
 These are ¼" TRS (tip-ring-sleeve) Input jacks, each accepting both left and right channels. If you plug a regular TS (tip-sleeve) into this jack, you will only connect the left channel. If you want to feed this input with an unbalanced mono signal, use a TRS plug and wire the tip and ring together. When using balanced mono sources, set the internal jumpers as shown on page Manual-4.
 To build a cable that will transfer separate left and right cables to a single ¼" TRS, follow the diagram below, connecting all shields. RCA connectors can be substituted for the ¼" connectors.
- ③ **Stereo Headphone OUTs** allow any headphone with an impedance from 32 to 600 Ω. Then kick back and enjoy. (Lower and higher impedance headphones may be used; they just won't be very loud.
- ④ **Remote POWER supply input.** The unit is supplied from the factory with a Model RS 1 remote power supply suitable for connection to this input jack. The power requirements of the unit call for an 18 volt AC center-tapped transformer only. *This is not a telephone jack. Never use a power supply with your unit other than the one supplied or a replacement approved by Rane Corporation.* Using any other type of supply may damage the unit and void the warranty.
- ⑤ **Chassis ground point.** A #6-32 screw used for chassis grounding purposes. See the CHASSIS GROUNDING note below.

IMPORTANT NOTE

CHASSIS GROUNDING

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 the chassis grounding screw.

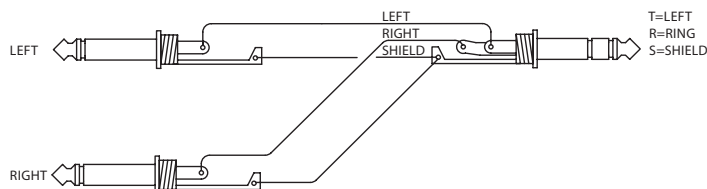


Figure 1. Dual Mono to Stereo TRS Wye Cable.

See ② above.

OPERATING INSTRUCTIONS

PLUG IN

Once connected as described in the HC 6 CONNECTION section on page Manual-1, the HC 6 is ready to drive any impedance headphones from 32 to 600 Ω . Plug your headphones into any of the six Outputs on the front or rear.

MASTER STEREO INPUTS

Apply a source program to the MASTER INPUTS and turn up the MASTER LEVEL until the green signal-present LEDs light up. Further adjustment of this control raises or lowers the volume level in all headphones simultaneously, i.e., all those being driven from the MASTER INPUTS. The MASTER LEVEL does *not* affect channels driven from the direct stereo INs.

INDIVIDUAL LEVEL CONTROLS

These adjust the level in each set of headphones to the desired loudness. When using the direct stereo IN, only this control affects the volume in the headset—the MASTER LEVEL is bypassed.

DIRECT STEREO INPUTS

These allow completely independent operation of up to six different stereo programs. These Inputs are stereo only, and wired to accept unbalanced signals, using the tip=left, ring=right convention. Unbalanced mono sources require using a stereo 1/4" TRS plug and shorting the tip and ring together.

When using balanced mono sources, internal jumpers must be moved as in the diagram below. Jumpers are wired at the factory for stereo. Jumpers must be moved for balanced mono operation. Each jack is jumpered separate, so any combination of input types is possible within a single HC 6.

Any Channel not directly driven is automatically driven from the MASTER INPUTS.

SIGNAL-PRESENT LEDs

These light up with any signal input above -20 dBu. They are located in the signal path after the MASTER INPUTS and before the individual LEVEL controls. This means that adjusting the MASTER LEVEL affects the SIG LEDs, while adjusting the individual LEVEL controls does not. When using a direct stereo IN, the LED responds to that Input only. This means these indicators aid in quickly identifying which stages are driven by the MASTER INPUTS and which by the direct stereo INs: Simply turn the MASTER LEVEL up and down and observe which LEDs respond. These are the Channels being driven by the MASTER INPUTS.

STEREO/MONO SWITCH

This serves the basic function of allowing both Left and Right channels of all headphones to be driven from a mono MASTER INPUT. In some instances a stereo program can be confusing for live monitoring purposes, due to extreme separation and the increased difficulty in perceiving several different volume levels. Using the MONO / STEREO switch converts the system to mono operation to better suit these particular monitoring needs.

FRONT PANEL OUTPUT JACKS

These jacks parallel the rear OUTs, providing easy access patching into any Channel for cueing or additional monitoring. When using more than six sets of headphones at once, keep two things in mind:

1. There are still only six LEVEL controls. Additional headsets must double up with those already in use. To avoid intolerable volume differences to two listeners on the same channel of the HC 6, use headphones of the same make and model.
2. The HC 6 has limited power output. The more headphones you connect to it, the less power there is available to each set, and the more strain on the HC 6. Blasting 10 or 12 sets of low impedance headphones is asking too much from the HC 6. To lessen the power drain from the HC 6, use only high impedance (100 Ω or greater) headphones when paralleling.

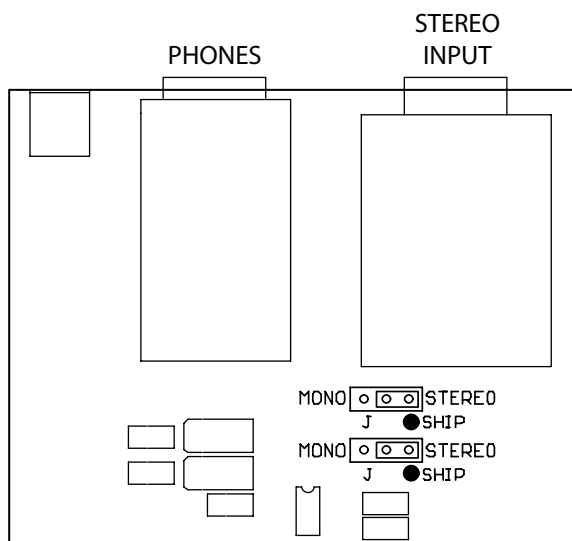


Figure 2. Moving internal jumpers near each Input jack convert stereo unbalanced inputs to mono balanced inputs.