HC6S

HEADPHONE CONSOLE

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord and plug from being walked on or pinched particularly at plugs, convenience receptacles, and the point where it exits from the apparatus.
11. Only use attachments and accessories specified by Rane.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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 is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The plug on the power cord is the AC mains disconnect device and must remain readily operable. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.
16. This apparatus shall be connected to a mains socket outlet with a protective earthing connection.
17. When permanently connected, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.
18. If rackmounting, provide adequate ventilation. Equipment may be located above or below this apparatus, but 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 apparatus.
19. This apparatus may be installed in an industry standard equipment rack. Use screws through all mounting holes to provide the best support.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

WARNING

To reduce the risk of electrical shock, do not open the unit. No user serviceable parts inside. Refer servicing to qualified service personnel.

The symbols shown below are internationally accepted symbols that warn of potential hazards with electrical products.

This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING: This product may contain chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by Rane Corporation could void the user's authority to operate the equipment.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

INSTRUCTIONS DE SÉCURITÉ

1. Lisez ces instructions.
2. Gardez précieusement ces instructions.
3. Respectez les avertissements.
4. Suivez toutes les instructions.
5. Ne pas utiliser près d'une source d'eau.
6. Ne nettoyer qu'avec un chiffon doux.
7. N'obstruer aucune évacuation d'air. Effectuez l'installation en suivant les instructions du fabricant.
8. Ne pas disposer près d'une source de chaleur, c-à-d tout appareil produisant de la chaleur sans exception.
9. Ne pas modifier le cordon d'alimentation. Un cordon polarisé possède 2 lames, l'une plus large que l'autre. Un cordon avec tresse de masse possède 2 lames plus une 3è pour la terre. La lame large ou la tresse de masse assurent votre sécurité. Si le cordon fourni ne correspond pas à votre prise, contactez votre électricien.
10. Faites en sorte que le cordon ne soit pas piétiné, ni au niveau du fil, ni au niveau de ses broches, ni au niveau des connecteurs de vos appareils.
11. N'utilisez que des accessoires recommandés par Rane.
12. N'utilisez que les éléments de transport, stands, pieds ou tables spécifiés par le fabricant ou vendu avec l'appareil. Quand vous utlisez une valise de transport, prenez soin de vous déplacer avec cet équipement avec prudence afin d'éviter tout risque de blessure.
13. Débranchez cet appareil pendant un orage ou si vous ne l'utilisez pas pendant un certain temps.
14. Adressez-vous à du personnel qualifié pour tout service après vente. Celui-ci est nécessaire dans n'importe quel cas où l'appareil est abimé : si le cordon ou les fiches sont endommagés, si du liquide a été renversé ou si des objets sont tombés sur l'appareil, si celui-ci a été exposé à la pluie ou l'humidité, s'il ne fonctionne pas correctement ou est tombé.
15. La fiche du cordon d'alimentation sert à brancher le courant alternatif AC et doit absolument rester accessible. Pour déconnecter totalement l'appareil du secteur, débranchez le câble d'alimentation de la prise secteur.
16. Cet appareil doit être branché à une prise terre avec protection.
17. Quand il est branché de manière permanente, un disjoncteur tripolaire normalisé doit être incorporé dans l'installation électrique de l'immeuble.
18. En cas de montage en rack, laissez un espace suffisant pour la ventilation. Vous pouvez disposer d'autres appareils au-dessus ou en-dessous de celui-ci, mais certains (tels que de gros amplificateurs) peuvent provoquer un buzz ou générer trop de chaleur au risque d'endommager votre appareil et dégrader ses performances.
19. Cet appareil peut-être installé dans une baie standard ou un chassis normalisé pour un montage en rack. Visser chaque trou de chaque oreille de rack pour une meilleure fixation et sécurité.

ATTENTION: afin d'éviter tout risque de feu ou de choc électrique, gardez cet appareil éloigné de toute source d'humidité et d'éclaboussures quelles qu'elles soient. L'appareil doit également être éloigné de tout objet possédant du liquide (boisson en bouteilles, vases,…).

ATTENTION

Afin d'éviter tout risque de choc électrique, ne pas ouvrir l'appareil. Aucune pièce ne peut être changée par l'utilisateur. Contactez un SAV qualifié pour toute intervention.

Les symboles ci-dessous sont reconnus internationalement comme prévenant tout risque électrique.

Ce symbole indique que cette unité utilise un voltage élevé constituant un risque de choc électrique.

Ce symbole indique la présence d'instructions d'utilisation et de maintenance importantes dans le document fourni.

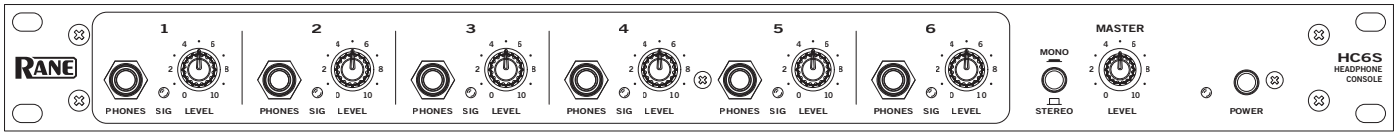
REMARQUE: Cet équipement a été testé et approuvé conforme aux limites pour un appareil numérique de classe B, conformément au chapitre 15 des règles de la FCC. Ces limites sont établis pour fournir une protection raisonnable contre tout risque d'interférences et peuvent provoquer une énergie de radiofréquence s'il n'est pas installé et utilisé conformément aux instructions, peut également provoquer des interférences aux niveaux des équipements de communication. Cependant, il n'existe aucune garantie que de telles interférences ne se produiront pas dans une installation particulière. Si cet équipement provoque des interférences en réception radio ou télévision, ceci peut être detecté en mettant l'équipement sous/hors tension, l'utilisateur est encouragé à essayer de corriger cette interférence par une ou plusieurs des mesures suivantes:

- Réorienter ou déplacer l'antenne de réception.
- Augmenter la distance entre l'équipement et le récepteur.
- Connecter l'équipement à une sortie sur un circuit différent de celui sur lequel le récepteur est branché.
- Consulter un revendeur ou un technicien radio / TV expérimenté.

ATTENTION: Les changements ou modifications non expressément approuvés par Rane Corporation peuvent annuler l'autorité de l'utilisateur à manipuler cet équipement et rendre ainsi nulles toutes les conditions de garantie.

Cet appareil numérique de classe B est conforme à la norme Canadienne ICES-003.

Cet appareil numérique de classe B est conforme à la norme Canadienne NMB-003.



QUICK START

Okay, you're in a hurry. Well this section's just for you. It explains enough of the HC6S'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 HC6S 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 of the 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 LEVEL**, and use the channel **LEVEL** controls for individual headphones. These Inputs may also be converted to balanced mono inputs by moving internal jumpers. See page Manual-4.

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.

HC6S CONNECTION

When first connecting the HC6S to other components, *leave the power off*. 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 line cord into the rear panel.

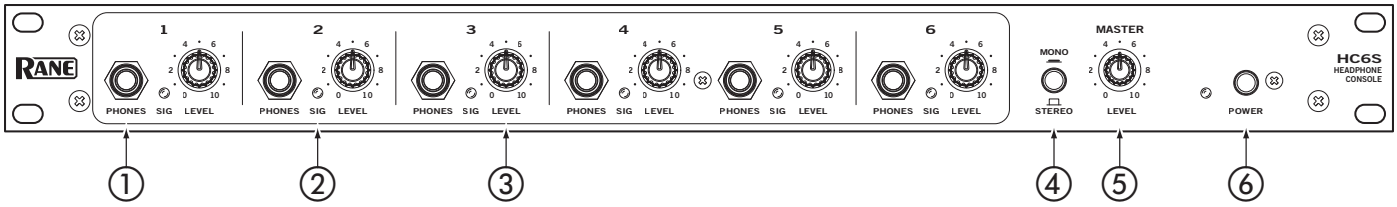
2. Plug the outputs from a mono or stereo source into the MASTER INPUTS. For unbalanced systems use a standard ¼" TS cable. For balanced operation, use a stereo ¼" TRS connector with pin 2 (+) wired to the Tip; pin 3 (–) wired to the Ring; and pin 1 (ground) wired to the Sleeve. Please consult the RaneNote, "Sound System Interconnection" (enclosed) for additional wiring arrangements.

3. When rack mounting the HC6S, 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.

WEAR PARTS: This product contains no wear parts.

FRONT PANEL DESCRIPTION



① **Front panel PHONES Output jacks** are in parallel with the rear panel stereo OUT jacks. Use them to monitor any of the six channels for level or mix adjustments, or for easy access when the HC6S is rack mounted. Plugging into these front jacks does *not* disengage the rear Outputs.

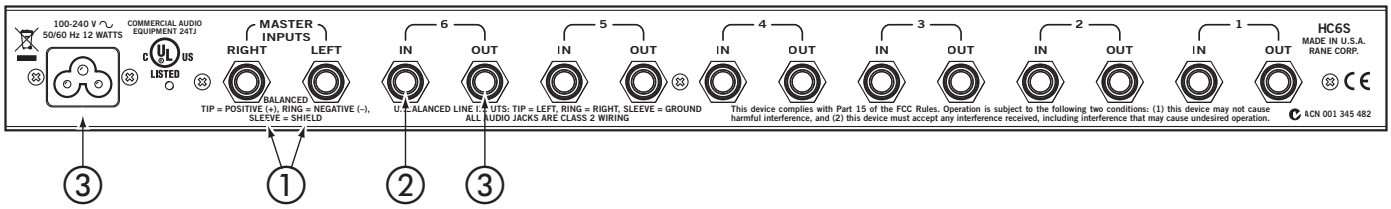
② **SIGnal present indicators** light (green) with any input signal above -20 dBu. See OPERATING INSTRUCTIONS (on page Manual-4) for complete details.

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 HC6S is ready to go.



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 HC6S 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.

To feed this input with an unbalanced mono signal, use a TRS plug and wire the tip and ring together.

To build a cable that will combine separate left and right cables into a single ¼" TRS, follow the diagram below, connecting all shields. RCA connectors can be substituted for the ¼" connectors.

To use balanced mono sources, set the internal jumpers as shown on page Manual-4.

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 **Universal Voltage Input:** via a miniature IEC 60320 C6 appliance inlet. This mates with an IEC 60320 C5 line cord (USA domestic). Do **not** lift the ground connection! The wide voltage range of this input allows it to be powered almost anywhere in the world.

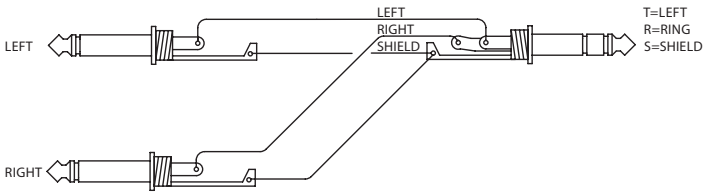


Figure 1. Dual Mono to Stereo TRS Wye Cable.

See ② above.

OPERATING INSTRUCTIONS

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 a direct stereo IN, only this control affects the volume in the headset—the MASTER LEVEL is bypassed.

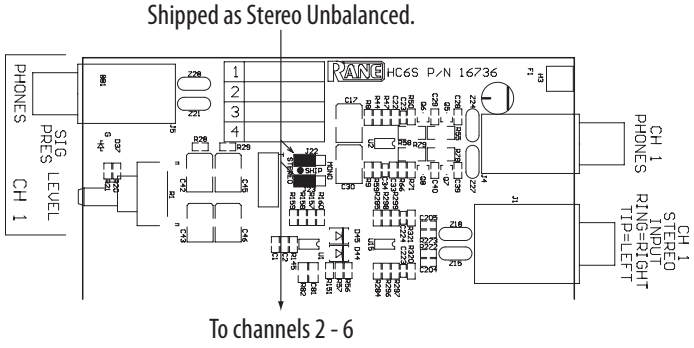
DIRECT STEREO INPUTS

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 ¼" TRS plug and shorting the tip and ring together.

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

When using balanced mono sources, internal jumpers must be moved as in Figure 2 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 HC6S. ***SHOCK HAZARD WARNING***: Any service requiring access to the inside of the unit (including changing jumpers and switch settings) should be done by qualified service personnel.

Figure 2. Stereo Unbalanced / Mono Balanced Jumpers Shipped as Stereo Unbalanced.



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 HC6S, use headphones of the same make and model.

2. The HC6S 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 HC6S. Blasting 10 or 12 sets of low impedance headphones is asking too much from the HC 6S. To lessen the power drain from the HC6S, use only high impedance (100 Ω or greater) headphones when paralleling.