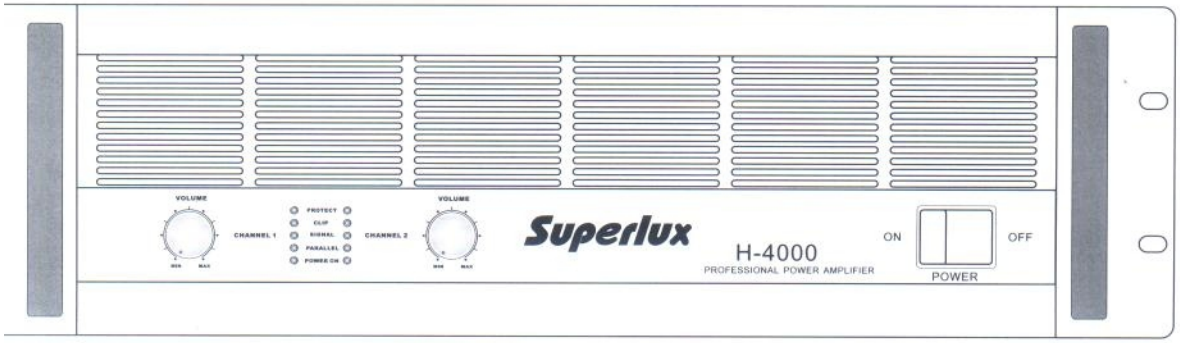
Superlux

"H"SERIES
HIGH PERFORMANCE POWER AMPLIFIER



OWNER`S MANUAL ENGLISH

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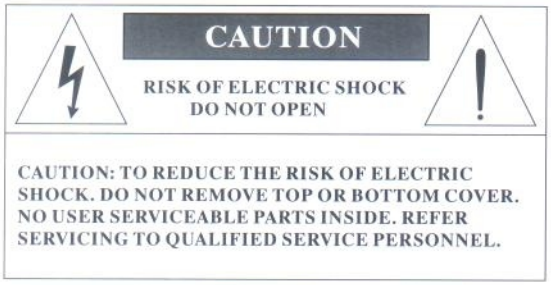
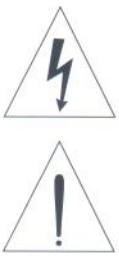




The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to Constitutea risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance(Servicing) instruction in the literature accompanying the appliance .

IMPORTANT SAFETY INSTRUCTIONS

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS

WARNING-When using electric products, basic precautions should always be followed, including the following:

1. Read all the SAFETY INSTRUCTIONS before suing the product.
2. This product must be earthed. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce risk of electric shock.
   This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and earthed in accordance with all local codes and ordinance.
   DANGER-Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product-if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
3. To reduce the risk of injury, close supervision is necessary when the product is used near children.
4. Do not use this product near water-for example, near a bathtub, washbowl, kitchen sink, in wet basement or near a swimming poor or the like.
5. This product may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
6. This product should be located so that its location or position does not interfere with its proper ventilation.
7. This product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
8. The product should be connected to a power supply only of the type described on the operating instructions or as marked on the product.
9. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
10. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power-supply cord, do not pull on the cord, but grasp it by the plug.
11. Care should be taken so that object do not fall and liquid are not spilled into the enclosure through openings.
12. The product should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to operate normally or exhibits a marked change in performance; or
    E. The product has been dropped or the enclosure damaged.
13. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.
14. **WARNING**-Do not place objects on the product's power cord or place it in a position where anyone could trip over, walk on or roll anything over it. Do not allow the product to rest on or to be installed over power cords of any type. Improper installations of this type create the possibility of fire hazard and or personal injury.

SAVE THESE INSTRUCTIONS

Contents

"H" SERIES POWER AMPLIFIERS

Introduction

Congratulations for having chosen a "H" SERIES power amplifier!

"H" SERIES are compact, high-powered amplifiers designed to meet the most various requirements in the sound amplification field.
"H" SERIES amplifiers have been designed using a structural concept based on the following premises:
a) rise in efficiency, thus drop in wasted power.
b)an efficient protection system able to effectively protect the amplifier itself and the loudspeakers connected to it, enabling it to stand up to rough treatment in conditions of complete safety.
c)greater reduction in structure size, favoring better price/performance ratio. This particular structure has enabled considerable results to be achieved, such as high power from compact, lightweight units and great dynamic capacity combined with tone quality and absolute reliability.

The "H" SERIES amplifiers are available in four different models:

H-1500	250W×2 8ohm	.	400W×2 4ohm
H-2200	600W×2 8ohm	.	900W×2 4ohm
H-4000	1250W×2 8ohm	.	2000W×2 4ohm

Quality connectors, knobs, switches and the strong metal frame fitted with handles have been designed to with stand heavy use without any problem.
The LEDs display gives precise information on the current status of the signal in any lighting condition.

The "H" SERIES is suitable to all the kinds of use in which powerful, versatile and reliable amplifiers are required, with compact dimensions and an better price/performance ratio:
From the systems of movable amplification to the fixed installations, from the systems of multi-amplification to the homes setups.

Installation & operating instruction

✔ *Mains power connection.*

Before connecting the amplifier to the mains power socket, make certain that the voltage Corresponds with that indicated on the rear of the unit (AC230V ± 10%). Before connecting the power cable to the mains, always make certain that it is not damaged and that there are no bare wires, always connect the power cable to the amplifier before Switching it on and only remove the cable after switching it off.

✔ *Switching on and off*

In an audio system, it's always better to switch power amplifiers on last and off first. Remember to switch off the amplifier before connecting it to or disconnecting it from other units and to switch always on first the mixer and then the amplifier: in this manner, peaks which are annoying and sometimes dangerous particularly for the loudspeakers enclosures are avoided. It is normal for the LEDs to light up for a few moments when switching on.

✔ *Handling*

Do not force knobs and connectors, as they could be damaged if treated with excessive force.

✔ *Connections and prevention of possible interference*

Avoid installing your equipment near radios, televisions, etc, since they could cause noisy disturbance. When connecting the other units in your sound system, watch out for to so-called earth-loops, which can cause hum. in the event of interference, try using the EARTH switch on the amplifier's rear panel.

✔ *Connector cables*

To connect the amplifier to the mixer, always make certain to use only signal cables (screened cables made up of two wires plus a braid screen), not power cables (speaker cables, normally made up of two wires, usually with a greater cross-section): to connect the amplifier to the loudspeaker enclosures, always use power cables, not signal cables, as in the latter case in fact, the power from the amplifiers would be partially disperse because of the cable's smaller cross-section. Take care of the connector cables. Always hold them by the connectors, avoiding pulling the wire and avoid knots and twists when coiling them: this gives the advantage of increasing their life and reliability.

✔ *Air circulation for cooling*

Amplifier's correct cooling is ensured by internal fans, the speed of which is controlled by special sensors (the speed is proportional to output power, remember never to block the air vents in any way: the air necessary for cooling passes through these. If the amplifier is kept in a flight-case during use, make certain. that it has sufficient openings at both the amplifier's air vents. Avoid locating it very small spaces which don't allow correct air circulation.

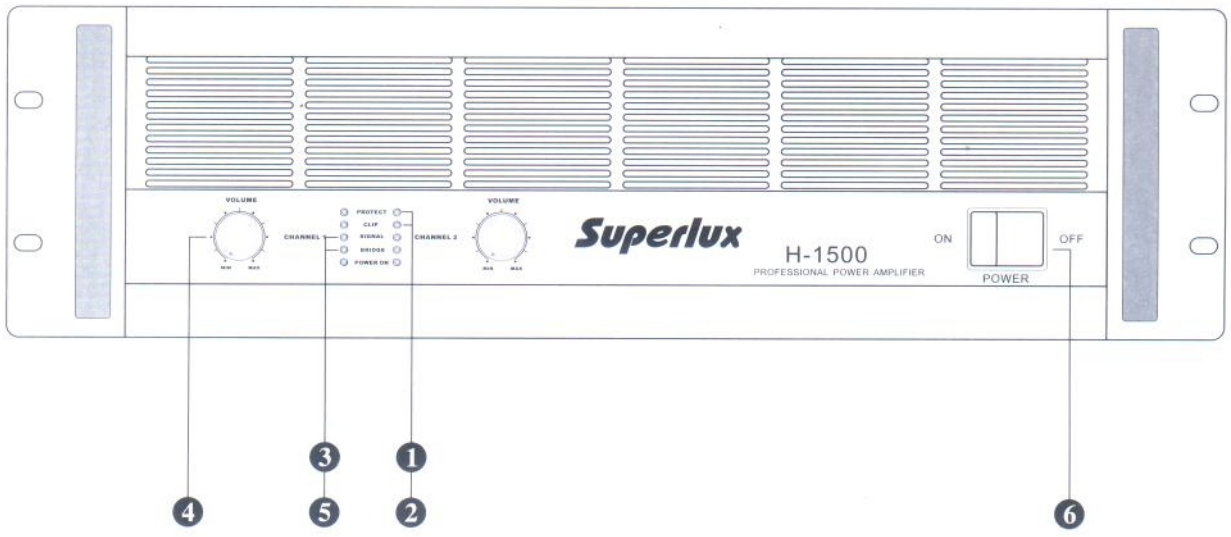
✔ *Warming High Voltage*

Please attention fan-out high voltage, and polarity, not short circuit.
When the product is work, don't touch the output connector for safety.

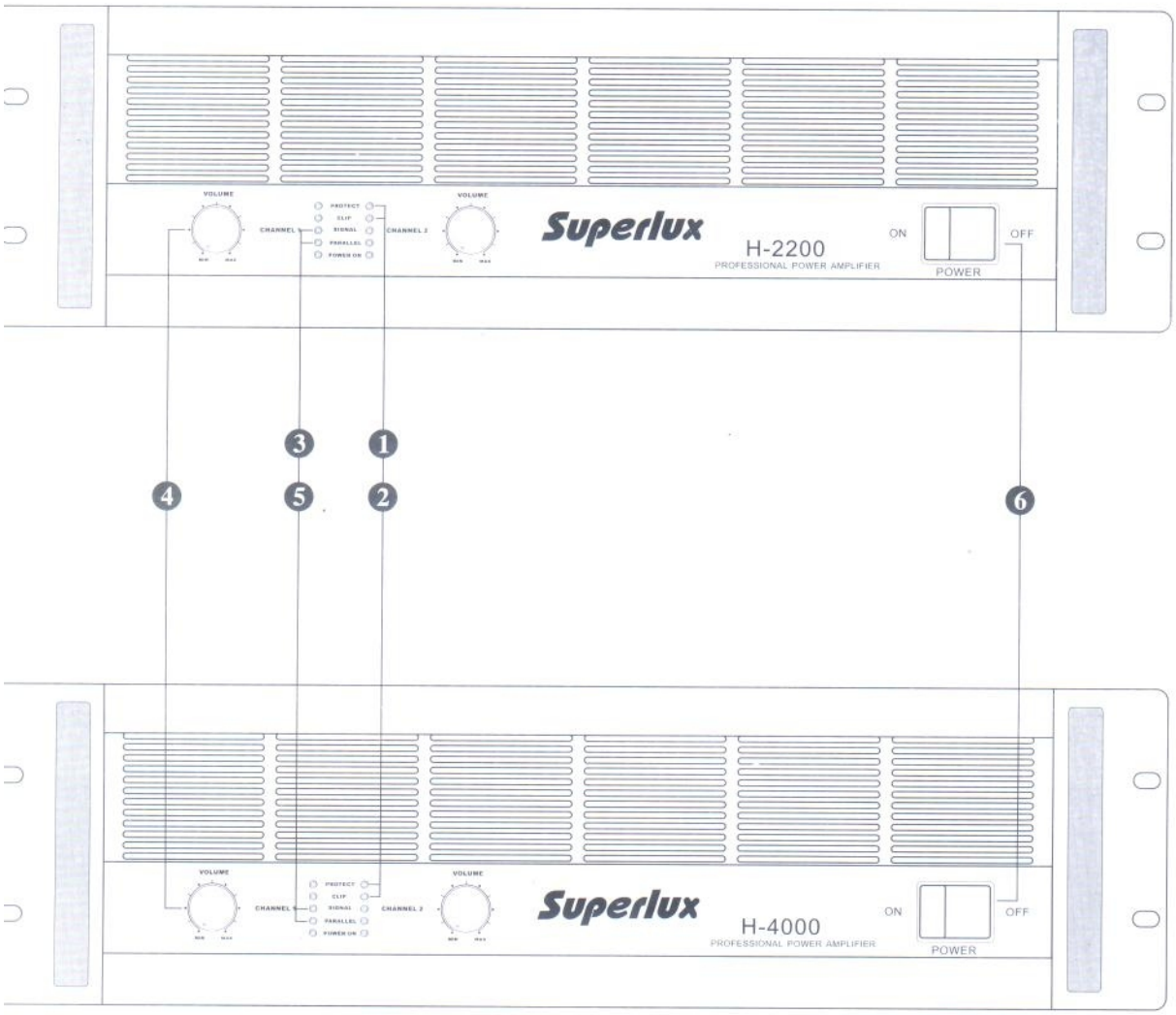
✔ *Protection and maintenance.*
Avoid exposing the amplifier to direct sun, strong heat, intense vibrations, very dusty or damp surroundings, or even worse, rain: this will avoid eventual malfunction, deterioration or even electric shocks and fires. In the event of a breakdown, do not open the amplifier contact the nearest Service Centre.

✔*Conservation of documents and packing.*
Keep this manual for future consultation. On this subject, remember that equipment always gets a better price on the secondhand market if it has all its original documentation and packing as well as being will-kept.

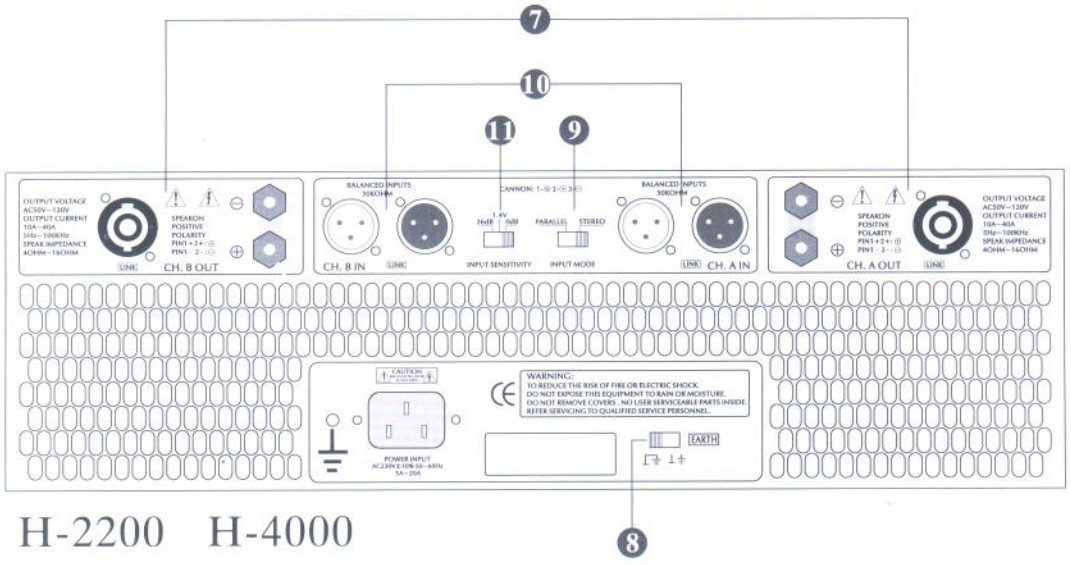
Front Panel



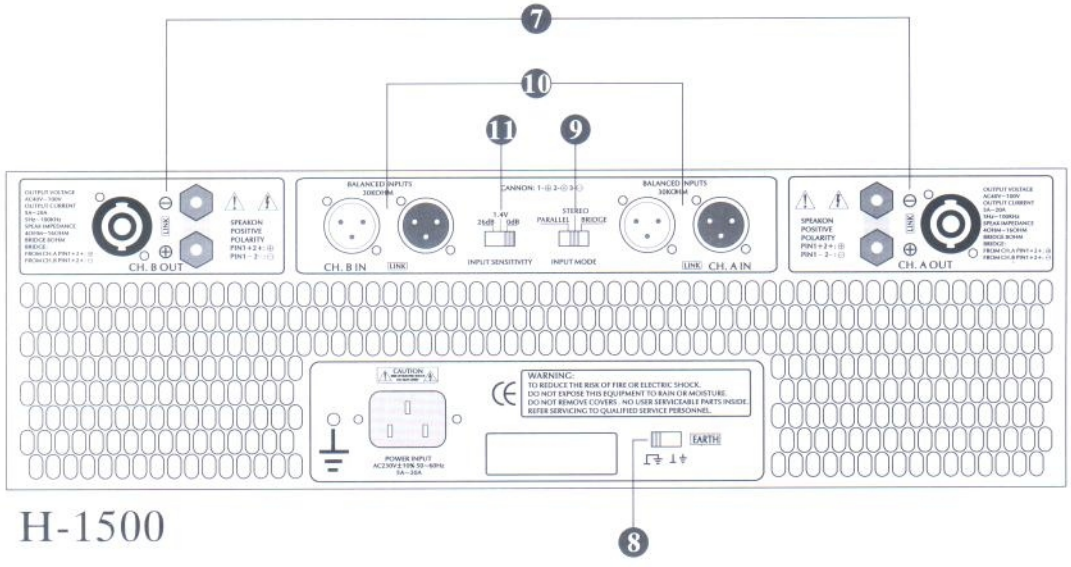
Front Panel


VOLUME
CHANNEL 1
PROTECT
CLIP
SIGNAL
PARALLEL
POWER ON
CHANNEL 2
VOLUME
Superlux
H-2200
PROFESSIONAL POWER AMPLIFIER
ON
OFF
POWER
3
1
4
5
2
6
VOLUME
CHANNEL 1
PROTECT
CLIP
SIGNAL
PARALLEL
POWER ON
CHANNEL 2
VOLUME
Superlux
H-4000
PROFESSIONAL POWER AMPLIFIER
ON
OFF
POWER

Back Panel



H-2200 H-4000



H-1500

PROTECT LEDs

Protection pilot lights

If these LEDs light up, this indicates that one of the various protections safeguarding the different sections of the amplifier and the loudspeaker enclosures has tripped due to an operating fault. In these cases, the power output is normally switched off until normal operating conditions are restored.

The following is a description of all the series protections

1)Switch on AC soft working Protection: Limit the electric current when start up, don't affect the others equipments or out the rush of circuit inside.

2)Delay the link load: protect the loudspeaker, keep silence when start up.

3)Circuit damage protection: midpoint excursion and output the AC, limit the damage to extend.

4)Limit the output current Soft protection: The loading impedance is low and too drastic signal; it can protect the loudspeaker and amplifier.

5)Clip and compress protection: When input too big signal, the clip output is distortion, it is easy to damage the speaker unit; this circuit can check the compress signal to protect the loudspeaker.

6)Short Circuit Protection: trips in the event of a short-circuit or overload, limiting the output current.

7)Over hot protection: In high temperature and low overload state, the temperature grow hot quickly, the protect will work to cut the load over 80℃. The amplifier will rework below 70℃.

8)Switch off Protection: First turn off the overload when switch off, it keep the loudspeak silence out of the rush.

Some protection situations require the amplifier to be switched off and then ba on for normal operating conditions be restored.

LIMIT LEDs

Amplifier" status" indicators: these LEDs are able to indicate for channels A and B, the operation Of the internal limiter, when inserted, or the clipping of the amplifier: These 2 LEDs are POST-LEVEL: in other words they display the status of the signal when it has already been regulated by the input level controls.

SIGNAL LEDs

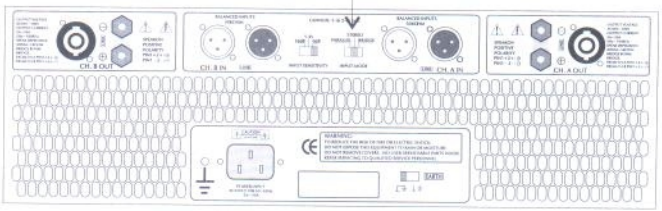
Signal "status" indicators: these LEDs are able to indicate for channels A and B, a signal Presence in the inputs of the amplifier.

) *LEVEL*

Control of the input level of the external signal: operates with continual values which vary From "fully closed" (position" MIN "-the signal is not fed to the amplifier sections) to "fully open" (position "MAX"-the signal is sent to the amplifier sections at the same level as that with which it arrives at the input).in other words, this control operates as an attenuator of the signal fed to the amplifier.

) *BRIDGE LEDs (H-1500) OR PARALLEL LEDs(H-2200 H-4000)*

Bridge switch with yellow indication. Pull the position "BRIDGE" , it lights up; Pull the switch to the position "STEREO or PARALLEL" , it lights off.
CAUTION: H-2200 H-4000 could not bridged.
The bridge position:



POWER ON

ON/OFF switch with indication LED. (Active LED)

OUTPUTS

Power out: outputs to be connected to the loudspeaker enclosures. The outputs for channel A&B Both have one Neutrik speakon and one Binding-post connectors.

Only loudspeaker(or loudspeaker enclosure systems)within the amplifier's declared Power and Impedance load Range should be connected to the amplifier' outputs (see ⇨ Technical specifications).Use only speaker cables (two-core cables, normally with a red and a black wire):do not use the screened signal cable (that one normally used for microphones and other pre-audio equipments.)

GROUND ON/FLOATING

Controls the separation of the electrical earth from that of the chassis. Using this selector, it is often possible to break earth loops which can form when several units are connected together and which can cause hum of other noises.

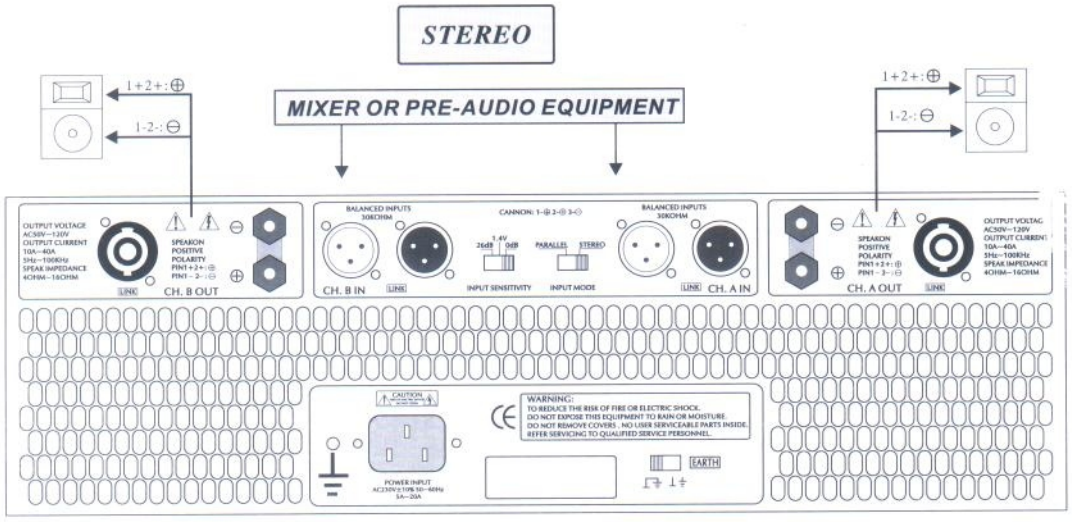
STEREO/ BRIDGE selector

Selector for the amplifiers 2 operating setting: allows to decide how use the amplifier in the audio setup, Connect with other units(crossovers, other amplifiers, loudspeaker enclosure

This control should only be used when the amplifier off, otherwise the loudspeaker's Components could be damaged.

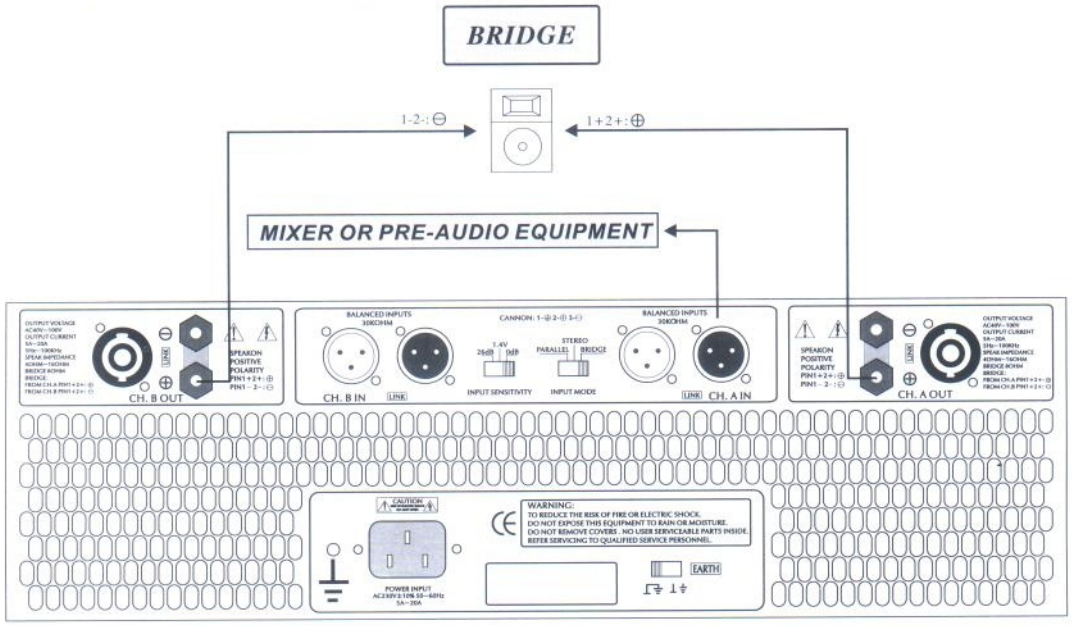
A)STEREO

With the STEREO setting, 2 separate signals are treated separately by channels A and B of the amplifier. In other words, a signal connected to input A is only treated by channel A of the amplifier and only fed to output A and a signal connected to input B is only treated by channel B of the amplifier and only fed to output B.



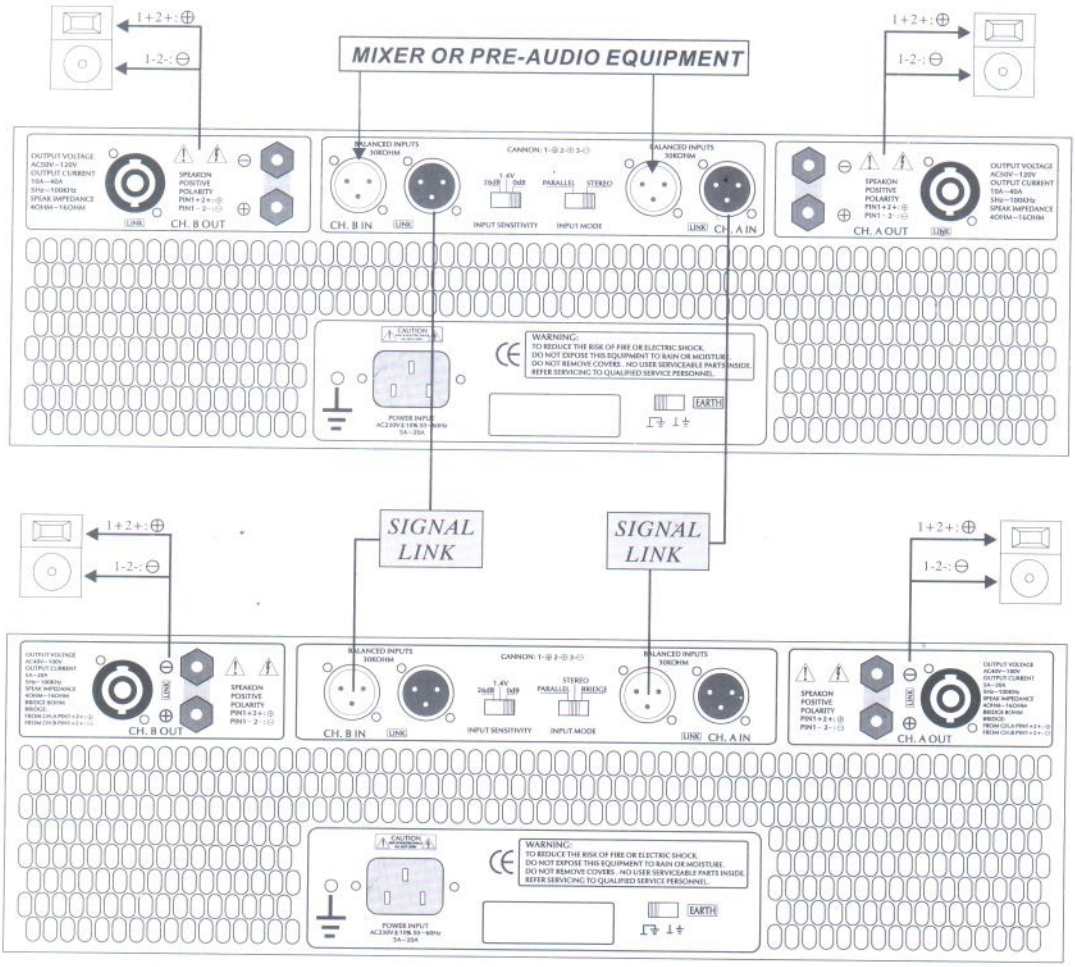
B)BRIDGE(except H-2200 H-4000)

With the BRIDGE setting signal is amplifier by the two sections (A&B) of the amplifier summed together. In other words the signal connected to input A is:
1)Amplified by both the amplification sections summed together;
2)Fed to a single output (BRIDGE).
The characteristic of this setting consists in the fact that there is a signal fed out with double the power and rated impedance (see⇨TECHNICAL SPECIFICATIONS).



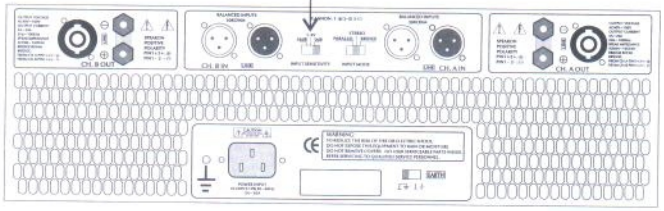
INPUTS

Balance inputs (0dB/30 k ohm): in ALL models both channel A&B of the amplifier have a double balanced input with two cannons connected in parallel. In this manner, high performance amplifier's input signal can be connected to either of these connectors (great facilitating connections) and if necessary, It can be passed on to the input of another amplifier or other units. One balanced "Neutrik" XLR input. (See ⇨ illustrations.)



SENSITIVITY adjust

According to different file in choice in source in different signal(0dB/1.4V/26dB)
The sensitivity position:



AMP SERIES TECHNICAL SPECIFICATIONS

Power specifications

EIA AC230V output power 1KHz Max THD 0.5% Both channels driven	MODE	8Ω	4Ω	8Ω bridge	Weight
	H-1500	*250W*	*400W*	*800W*	*19kg*
	H-2200	*600W*	*900W*		*24kg*
	H-4000	*1250W*	*2000W*		*35kg*

ELECTRICAL SPECIFICATIONS

POWER SPECIFITIONS		*H SERIES*
Inputs	*Sensitivity*	0dB(0.775Vrms)/1.4V/26dB
	Impedance	30KOHM(balanced, stereo) 15KOHM(balanced, parallel)
Frequency response		20-20000Hz(±0.3dB)
Slew rate		≥30V/us
Damping factor		H-1500、H-2200≥300:1； H-4000≥700:1
Crosstalk		>90dB@1KHz
S/N		>100dB
Total harmonic distortion (THD+N)		<0.08%@1KHz
Inter-modulation distortion (IMD)		<0.1%8Ω,1KHz@1W

GENERAL SPECIFICATIONS

PROTECTIONS	*Amplifier* *Speakers*	*POWER ON/OFF protection* *Transistor thermal protection* *Short circuit protection* *Sensor for current on outputs* *Limiter*
CONTROLS	*Front panel*	*ON/OFF switch* *Signal level control for each channel*
	Back panel	*BRIDGE/STEREO/PARALLEL selector(H-1500)* *STEREO/PARALLEL selector(H-2200/H-4000)* *Input sensitivity adjust Ground ON/Floating*
INDICATORS	*ON: 2 green; protect: 2 red; clip: 2 yellow; signal: 2 green; parallel or bridge: 2 yellow*	
CONNECTORS	*Input*	*Two Neutrik XLR connectors each channel*
	Output	*1 Neutrik speakon+1 Binding-Post connector each channel*
POWER SUPPLY	*See label on the apparatus*	
DIMENSIONS(WxHxD)	*H-2200/H-4000: 483×132×487mm*	
	H-1500: 483×132×407mm	

Connector cables

The following diagrams illustrate the wiring of the various types of sockets that can be used with the power amplifiers.
To connect the amplifier to the mixer, always make certain to use only signal cables (screened cables made up of two wires plus a braid screen), not power cables (speaker cables, normally made up of two wires, usually with a greater cross-section): the use of unscreened cables could in fact cause annoying buzzes and background noise. The amplifier's inputs are in fact balanced and therefore designed in such a way that any interference on the line is eliminated or at least greatly reduced. We therefore always suggest the use of balanced cables for microphones and line units whenever possible.
To connect the amplifier to the loudspeaker enclosures, always use only power cables, not signal cables, as in the latter case in fact, the power from the amplifiers would be partially dispersed because of the cable's smaller cross-section.
Take care of the connector cables. Always hold them by the connectors, avoiding pulling the wire and avoid knots and twists when coiling them: this gives the advantage of increasing their life and reliability. Check your cables periodically, making certain that they are in good condition, that the connectors are correctly wired and contacts perfectly efficient: in fact, many problems and setbacks (faulty contacts ,ground hum, disturbance, etc.) are due to the use of unsuitable of faulty cables.