



Pyramid Stereo Amplifier



Operating manual

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Table of contents

Important safety warnings	3
Warranty	3
Congratulations	4
Package content	5
Installation	6
Placement of the Pyramid	6
Installing the fuse	6
Connecting the loudspeakers	7
Connecting the input	8
Using the ground connector	8
Connecting the AC mains power	8
Operating the PSA	9
Power switches	9
Level and clipping indication	10
Security	11
Protection mode	11
Clipping protection	11
Short-circuit protection	11
DC protection	11
Thermal protection	12
Technical specifications	13
Nagra Hi-Fi range	14

Important safety warnings

- Before operating the PSA, read the manual carefully;
- Should you have any questions on how to setup or use your PSA, please contact your dealer;
- Do not attempt to open the amplifier under any circumstances. Refer any service/repair work to qualified personnel. There are no user serviceable parts inside the amplifier;
- The PSA is a high power amplifier, before connecting it to your system, make sure your loudspeakers can handle its power;
- NagraVision SA declines all responsibility in the event of an accident caused by the non-observance of these instructions or any other form of user negligence.

Warranty

Nagra, a division of NagraVision SA, certifies that this instrument was thoroughly inspected and tested prior to leaving its factory and is in accordance with the data given in the accompanying measurement protocol and test sheet.

We warrant the products of our own manufacture against any defect arising from faulty manufacture for a period of three years from the date of delivery to the user.

This limited warranty covers the repair of confirmed defects or, if necessary, the replacement of the faulty parts, excluding all other indemnities.

All freight costs, as well as customs duty and other possible charges, are at the customer's expense.

We decline any responsibility for any and all damages resulting, directly or indirectly, from the use of our products.

We reserve the right to modify the product, and / or the specifications without notice.

Congratulations

Congratulations, you have just purchased one of the best power amplifiers ever made!

The PSA was created by an engineering team with over half a century of experience designing world-class products for the professional audio, national security and military businesses.

Since its inception in 1951, Nagra builds products that continue to earn a reputation for delivering ultimate sonic performance. Numerous awards have been bestowed upon Nagra for its technical innovation, excellence in design and flawless construction including three Oscars® and one Emmy®.

The Hi-Fi products and field recorders are developed by the same R&D Department. Nagra philosophy is to provide innovation and technology in order to design high quality products. The hi-fi range was created to implement innovative designs and provide Nagra expertise to a new field.

The PSA features a new Nagra custom switching power supply. Since many years, Nagra recorders have been equipped with switching power supply units. Naturally, Hi-Fi products also benefited from this technology. These power supplies allow top performances in a compact and lightweight design.

The PSA features complex security functions to safeguard your amplifier as well as your loudspeakers. Once set, we want you to enjoy the music while Nagra manages the rest.

Thank you for being our customer and enjoy your new Nagra PSA amplifier!

Package content

Each PSA box should contain the following:

- PSA unit;
- PSA user manual;
- AC power cable*;
- Set of fuses (for 100 - 120 or 220 – 250 V, depending on your country);
- 2x RCA to XLR adapters from Neutrik
- Measurement protocol, this is the actual electrical measurement of your amplifier.

If anything is missing, please contact your dealer.

*depending on your country, the AC mains cable features either US, European or Swiss plug.

Installation

Placement of the Pyramid

To take full benefit of the amplifier you should place it as close as possible to the loudspeaker's cabinets. This will allow shortening the sensitive link - the speaker cables.

If you have a thick carpet, it is advisable to place the Pyramid on small stands to allow an optimal thermal dissipation.

Installing the fuse

You should start by installing the fuse.

Apply a pressure with your thumb to release the fuse compartment.



The PSA comes with a set of 5 or 10A fuses. Make sure the supplied fuses have the correct value (refer to the following table). In the event that the fuse doesn't have the correct value, please contact your dealer.

Mains voltage	Fuse
100 - 120 V	10 A
220 - 250 V	5 A

Put the compartment back in place



Connecting the loudspeakers

The PSA features gold plated WBT speaker's connectors. It allows connecting:

- Bare wire cables ends up to 4.2mm ;
- 6.35mm spade lug ;
- 4 mm banana plug.



Connecting bare wire cable ends or spade lugs



Connecting cables equipped with banana plugs

NB The connectors of the PSA are different from the one shown on the pictures. The new connectors of the PSA are not isolated gold plated.

Connecting the input

The PSA accepts balanced and unbalanced signals on XLR input.



If you have RCA cables, you should use the RCA to XLR adapter provided. This is a professional adapter coming from Neutrik made in the Principality of Liechtenstein, a long time partner of Nagra.



Using the ground connector



In some specific installations, a ground connector can be useful.

It should only be used by a trained specialist.

The ground connector can accommodate either banana or bare wire cable.

Connecting the AC mains power

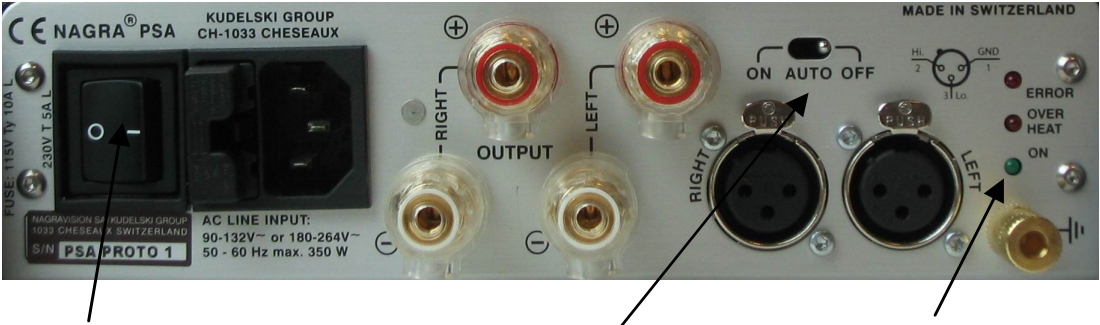


Before connecting the power cable, make sure the PSA is in the OFF position.

Then, simply plug the PSA to the mains by the means of the supplied AC power cable.

Operating the PSA

Proceed only once you have completed the installation steps described in the previous chapter **Installation**.



(a) Mains switch (b) Operating switch "ON" LED

Power switches

The PSA offers two different power switches. The Mains switch (a), feeds the whole unit. When in **O** position, the unit is OFF and isolated from the mains, its power consumption is zero. In the **I** position, it allows the operating switch (b) to control the unit.

The Operating Switch (b) has 3 positions: **ON - AUTO - OFF**

ON	The unit turns ON after a short heating and self-control period
AUTO	The PSA turns ON automatically in the presence of an audio signal on the inputs, it turns OFF after 15 – 20 minutes without signal
OFF	Standby position

Mains switch (a)	Operating switch (b)	Action
O	Any	The unit is completely OFF
I	ON	Turn the amplifier ON*
I	AUTO	Automatic mode
I	OFF	Keeps the unit in STANDBY position

*The green LED on the back panel will light only when the unit is ON

Level and clipping indication

The front panel provides two LEDs

Red LED / Clipping LED

(Located on the right)

It lights up just before the amplifier starts to clip: when the current on the output is more than 12A peak or if the voltage is above 42 V peak.

The red LED indicates that you are about to reach the limit of the amplifier. You should slightly reduce the listening level until the LED turns off.



NB Note, few loudspeakers are able to handle this power without permanent damages.

Blue LED / Level LED

(Located on the left)

It indicates the level of the signal. The brightness of the LED is directly proportional to the level of the signal.

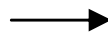
If you don't want this blue LED to operate, you can easily turn it off. The ON / OFF switch for the LED is located under the Pyramid's chassis.

Caution Start by turning the main switch (a) OFF (O position) and unplug the mains connector.

Turn the pyramid upside down on a soft surface to avoid accidental damage to the case.

Place the front side on your left as shown on the picture.

Front



Using a small flat screwdriver, take the plastic lid off.



You can now access the switch

Switch position	Up	Down
Status	LED off	LED on

Security

When you deal with high power amplifiers, it is very important to implement security features. These features enhance the lifetime of the amplifier as well as protect the loudspeakers*. This will allow you to play music without bothering about security; it is already handled by the amplifier itself.

Protection mode

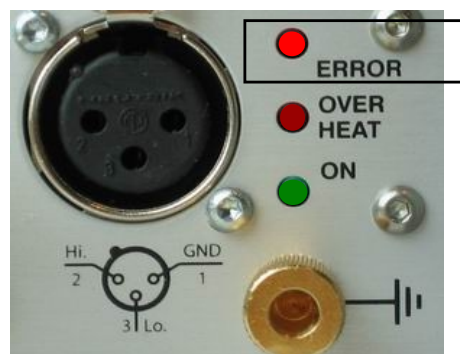
Whenever one of the following events happen (described below):

- clipping
- shortcut
- DC problem

the Pyramid will go into the **Protection Mode**.

The **ERROR** LED will light up, the Pyramid will no longer play.

To turn the Pyramid ON again, you have to turn it OFF (**O**) and ON (**I**) using the Main Switch (1) as described in page 10.



Clipping protection

Clipping will occur when you push the pyramid to its limit, the front red LED will start to blink. While a short "clip" will not even be heard, a long clip can damage the amplifier or the loudspeakers*. That's why, after one second of continuous clipping, the PSA will self-protect by going into the **Protection Mode**.

Short-circuit protection

In the event of a short-circuit on the speaker's connectors, the front red LED will light up; after one second, the amplifier will go into the **Protection Mode**. Before turning the unit ON again, you should check the speaker connections (refer to page 7).

DC protection

A DC (direct current) component generated from the amplifier could damage your loudspeakers. If a DC component of more than ± 2.5 V appears on the output of the Pyramid, it will go into **Protection Mode**.

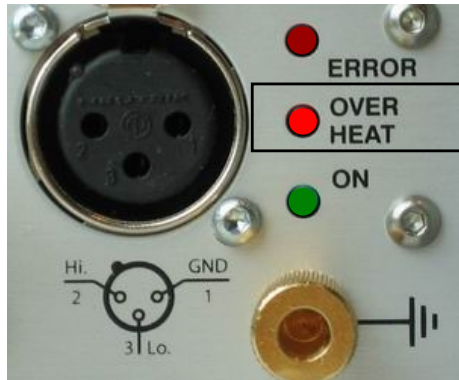
Tip If the Pyramid keeps going into the **Protection Mode** for no obvious reason; please contact your Nagra dealer.

* if the loudspeakers can handle the PSA power

Thermal protection

The large thermal dissipation surface offered by the aluminum design of the pyramid allows the PSA to stay very cool even at high levels, even in the most demanding conditions.

Still, Nagra engineers, willing to maximize security have integrated a heating management system.



In the event of overheating, body of the Pyramid going higher than 60°C (140°F), the PSA will turn OFF. The **OVER HEAT** LED on the back panel will light on.

The PSA will automatically turn on again as soon as the temperature goes down below 60°C.

Technical specifications

Class	AB	
Power	100 W rms into 8Ω	1V input
Bandwidth	<10 Hz to 90 KHz	+0 / -3 dB
Signal-to-noise ratio	Typically 104 dB	Measured in ASA A
THD+N	< 0.09 %	@100 W
Input impedance	>100 KΩ	
Input connectors	XLR	Balanced
Monitoring	Level indication	Blue LED on front panel (can be disengaged)
	Clipping indication	Red LED on front panel I>12A or U>42V
Automatic start	For input level > 100mV	
Protection Deactivates the amplifier (Alarm LED on the back panel)	Overheating	Above 60°C (140°F)
	DC protection for loudspeakers	Above +/- 2.5 V DC
Output connectors	Gold plated WBT	Bare wires up to 4.2 mm 4mm banana plugs 6.35mm spade lugs
Consumption	350 W max	Sine wave current draw complies with EN61000-3-2 regulation
Weight	11 Kg (22 lbs)	
Size	38x38x30 cm	(14.9x14.9x11.8 inches)
Operating range	90-132V 180-264V	50-60 Hz

Nagra Hi-Fi range



Please, take a minute to familiarize yourself with our Hi-Fi range. If you have any further questions, please contact your Nagra dealer or visit our website:

www.nagraaudio.com

SNST-R Precision miniature analogue stereo tape recorder

The SNST-R was designed for music recordings. It's a special version of the historical SN "Série Noire" originally ordered by President JF Kennedy for the American secret services that was even taken to the moon on one of the Apollo missions.

DAC High definition digital to analogue converter

The DAC has inherited the fabulous electronic design of the Nagra D and Nagra V digital recorders used by the most prestigious music companies and recording engineers around the world.

PL-L Line vacuum tube preamplifier

The PL-L is a Pure Class A vacuum tube line preamplifier, based on the proven design concepts of the world-renowned PL-P. The PL-L is designed to provide the highest quality audio performance in an ultra-high-resolution audio system.

PL-P Battery operated tube preamplifier with phono stage

The PL-P is a Pure Class A vacuum tube pre-amplifier including fully MM or MC a phono stage, the whole unit runs on a rechargeable battery system.

VPA Pure Class A 50 W monoblock tube amplifier without feedback

Since its introduction, the VPA has set new standard for vacuum tube amplifiers, won prestigious awards and, more importantly, became a reference for a tremendous number of audiophiles all over the world.

MPA MOSFET Power Amplifier

For audiophiles and tube-lovers who need a tremendous power, the MPA will deliver 250 Watts (per channel into 8Ω) of clear and pure audio.



DECLARATION DE CONFORMITE DECLARATION OF CONFORMITY

FABRICANT: NAGRAVISION S.A. KUDELSKI GROUP, 1033 Cheseaux
SUISSE

MANUFACTURER: NAGRAVISION S.A. KUDELSKI GROUP, 1033
Cheseaux, SWITZERLAND

APPAREIL : Nagra PSA ou PMA
MODEL: Nagra PSA or PMA

NORMES APPLICABLES : APPLICABLE NORMS:

Champ électromagnétique rayonné
Radiated electromagnetic field

EN 55022 Cl. B
EN 55022 Cl. B

Perturbations conduites sur secteur
Disturbance voltage on mains terminal

EN 55022 Cl. B
EN 55022 Cl. B

Immunité aux champs électromagnétiques
Immunity to electromagnetic fields

EN 61000-4-3
EN 61000-4-3

Immunité aux décharges électrostatiques
Immunity to electrostatic discharges

EN 61000-4-2
EN 61000-4-2

Immunité aux transitoires électriques
rapides en salves sur câble d'alimentation
Immunity to burst on mains line

EN 61000-4-4 level 2 (1000V)
EN 61000-4-4 level 2 (1000V)

Immunité aux transitoires électriques rapides en salves sur câbles d'entrées/sorties
signaux
Immunity to burst on input/output signal line

EN 61000-4-4 level 1 (500V)
EN 61000-4-4 level 1 (500V)

Immunité aux ondes de choc
Immunity to surge

EN 61000-4-5 level 2 (1000V)
EN 61000-4-5 level 2 (1000V)

Cheseaux 3^{ème} trimestre 2004
Cheseaux 3rd quarter 2004

Paul Rebmann