VPS – Phono Preamplifier

User manual

P/N: 2055003151

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Safety warning

- Read the manual carefully before operating the VPS,;
- Should you have any questions on how to setup or use your VPS, please contact your dealer;
- Nagravision SA declines any responsibility in the event of an accident caused by the non-observance of these instructions or any other form of user negligence.

NOTE: The mains power supply must imperatively be disconnected 10 minutes before opening the unit to perform internal parameter adjustments.

Warranty

Nagra, a division of Nagravision SA, certifies that this device has been inspected and tested before leaving the factory.

Every Nagra unit goes through our test laboratory. The result of the measurements is recorded in the documentation that comes with your device.

We guarantee our products against all manufacturing defects, for a period of three years for the VPS and 6 months for the tubes, running from the date of delivery to the customer (validated by the serial number on the device casing and the invoice from an official Nagra dealer). This warranty is only valid for the original purchaser of new equipment.

This limited warranty covers the repair and replacement of defective parts, excluding any other remedy.

The absence of a serial number invalidates the warranty.

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

As we constantly strive to improve our products, we reserve the right to modify them or change their specifications without notice.

Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).
This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local authority, your household waste disposal service or the shop where you purchased the product.
Applicable to the following devices: VPS Phono preamplifier and accessories.

Congratulations

Congratulations ! You have just acquired one of the best ever phono preamplifiers.

The VPS 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.

Ever since its creation in 1951, Nagra build devices that offer exceptional sonic performance. The company has received many awards for its technical innovations and the excellence of its products. Among the most prestigious, Nagra has been awarded three Oscars® and one Emmy®.

The professional and Hi-Fi ranges are designed by the same Research and Development department. Nagra has launched a Hi-Fi range to allow the wider public to benefit from technical advances that are often the privilege of the professionals.

This technology exists in the service of music, your music. This is why we already wish you some great moments of listening pleasure with your VPS.

Thank you for your trust.

Package contents

Besides the manual and the VPS itself, the box contains :

- Mains cable* ;
- ACPS II power supply** ;
- Record of measurements, response curve characteristics for your device, measured by the Nagra laboratory ;
- 12 black plastic jumpers ;
- 1 pair of pliers to manipulate the jumpers ;
- 6 load circuits in their box ;
- 2 spacer screws to secure the load circuit ;
- The VPS's internal parameter setting card.

Please contact your Nagra dealer if anything is missing.

* depending on the country of purchase, the cable supplied by Nagra will feature a European, Swiss or US plug.

** depending on the country of purchase, the VPS is supplied with a 110 V or 230V power supply.

Installation

Positioning

In order to protect against the risks of fire and electric shock, please keep this device away from rain and humidity.

The positioning of the VPS must allow free access to the ventilation slots located under the device.

The Nagra VPS must rest on a stable support. We recommend that you use the new anti-vibration support, Nagra VFS, Vibration Free Support, developed by Nagra consisting on isolated massive aluminum plate using the same damping material as the Nagra CD mechanics.

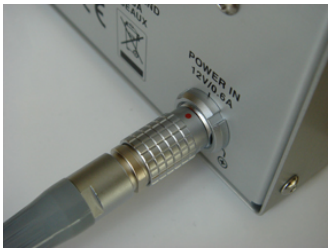
The top cover of the VPS features three slots for isolation spikes.

You can obtain an isolation spike kit for the following devices: VPS, CDC, CDP, CDT, PL-L and PL-P from your Nagra dealer.

VPS connections

Connecting the ACPS II power supply

Place the front panel selector in the OFF position. Insert the LEMO plug from the ACPS II power supply into the POWER IN connector of the Nagra VPS.



The LEMO plug features a red dot that must be facing upwards for correct insertion into the power input connector.

You will hear a click, indicating that the plug is securely locked in.

After connection of the LEMO plug, connect the ACPS II to the mains via the IEC cable.

Illumination of the ACPS II's red LED (Light-Emitting Diode) indicates the output of direct current. If the LED is off, check the connection of the IEC mains cable and the delivery of current to the mains plug.

To disconnect the LEMO plug.

Hold the fluted section of the plug as shown in the picture and pull backwards.

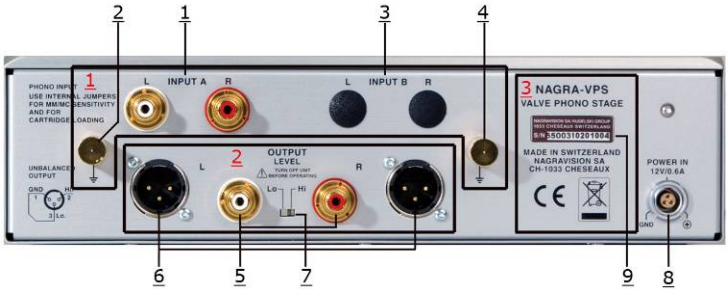
Using the ground connector

Connect the ground wire of your turntable to the ground terminal of the phono module located at the back of the VPS.

This connection is not always necessary, depending on various characteristics of your record deck, cabling and cartridge.

You Nagra dealer will be able to advise you on the usefulness of this connection.

Connection block



1 – Phono Inputs

- 1 – Input A, comes with an MC (Moving coil) module as standard.
- 2 – **A** module ground connector.
- 3 – Input B, for MM or MC optional module.
- 4 – **B** module ground connector.

2 – Outpout group

- 5 – RCA outputs.
- 6 – XLR outputs*****.
- 7 – Low level (Lo) or high level (Hi) output switch.
- 8 – LEMO mains connector.

3 – Device identification plate

- 9 – Serial number.

*The XLR outputs are provided to make your VPS easier to connect to your Hi-End system. These outputs reproduce the RCA output signal on XLR connectors. They are unbalanced.

Make sure you are using the shortest possible cable (with no loops or useless bends) between your turntable and VPS.

The RCA or XLR outputs can equally be used for connection to a PL-L or PL-P.

NB Caution: Do not use the XLR and RCA outputs simultaneously.

In order to obtain optimal performances from the Nagra VPS, it is preferable to leave the device switched on for about 30 minutes before use, so that the internal components can reach their optimum operating temperature.

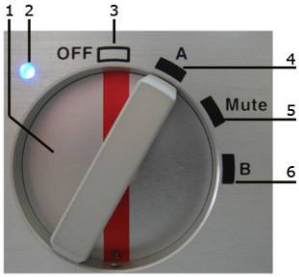
Like all tube electronic devices, the Nagra VPS needs a running-in period. It will reach peak performance after a few hours of use.

Front panel

1 – Main control
2 – Status LED

Main selector

1 – Main selector
2 – Status LED
3 – OFF / Standby*
4 – Phono input A
5 – Mute
6 – Phono input B



*In standby mode the power consumption is negligible.

The VPS is switched on by moving the selector from the OFF position to the A or B position, depending on the installed phono inputs. The tubes are preheated for 90 seconds (flashing LED), during which the VPS is in MUTE mode.

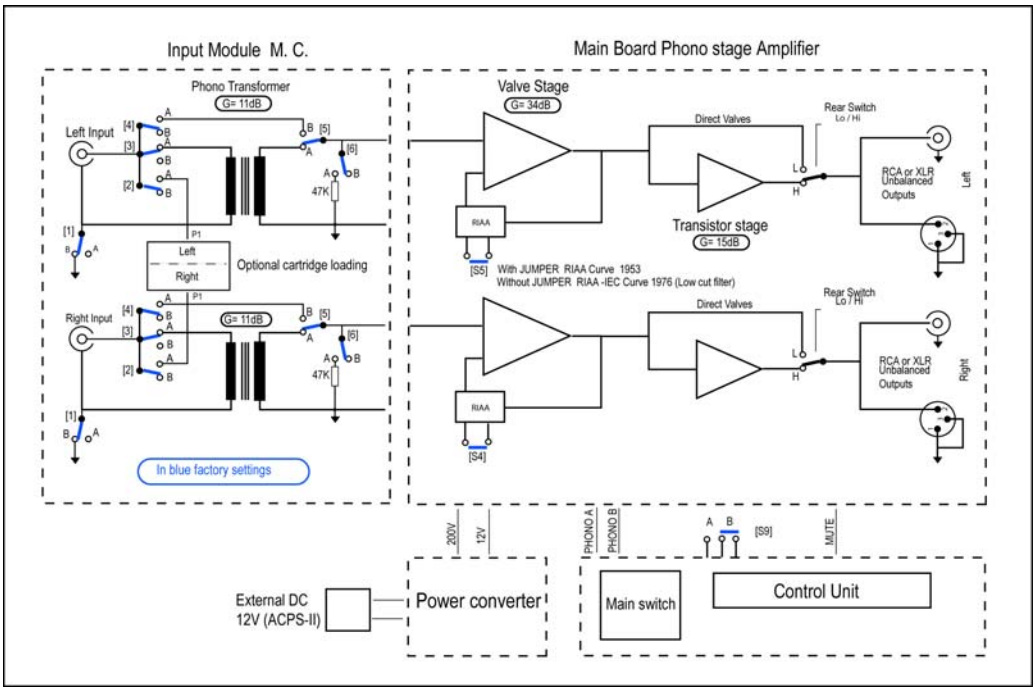
NOTE: In case of an accidental return to the OFF position for less than 90 seconds, the preheating is not reapplied.

When moving between the A, OFF and B positions, a 3 second switching delay is applied to avoid any unwanted noise.

VPS diagram

The diagram describes the signal path, as well as the various parameters you can adjust using the jumpers or switches.

The left-hand side section, "Input Module MC", is the input module located in A or B. The right-hand side section, "Main Board Stage Amplifier", is located on the VPS main board.



Internal parameter settings

Opening the VPS

> ***NOTE:*** The mains power supply must imperatively be disconnected 10 minutes before opening the unit to perform internal parameter adjustments.

Remove the four screws from the top panel of the VPS with the supplied tool.

When closing the casing, make sure you place the top panel with the two isolation spike slots facing towards the front, so that the hollowed out internal part of the panel is above the tubes.

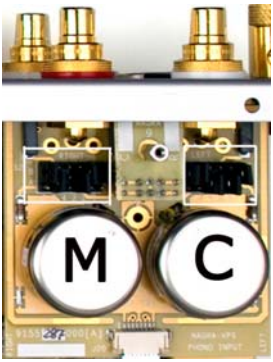
Phono Modules

The Nagra VPS is supplied with a Phono stage for Moving Coil (MC) cartridges positioned on input A.

Optionally, you can obtain a second, MM or MC Phono module to place on input B. Please contact your Nagra dealer for more information.

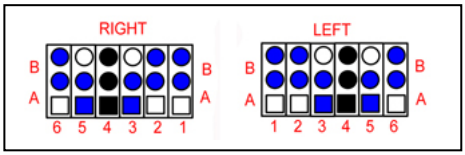
Default parameter settings

The default parameters settings are indicated in blue on the VPS internal parameter card.



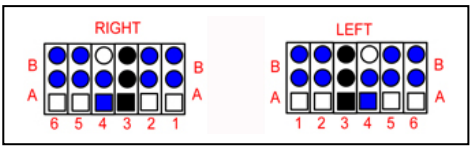
Factory settings for MC Phono module

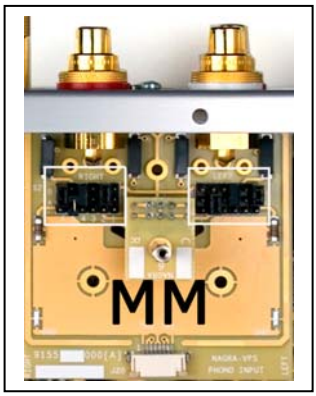
1- B : Unbalanced inputs.
2- B : With no additional charge module.
3- A : Moving coil input.
4-AB : Not connected.
5- A : Through internal transformer.
6- B : No 47 kΩ resistor.



Factory settings for MM Phono module

1- B : Unbalanced inputs.
2- B : With no additional charge module.
3-AB : Not connected.
4- A : Moving magnet input.
5- B : No transformer.
6- B : No 47 kΩ resistor.





Jumper functions

In order to maximize the VPS's performance, the path of the (very low and therefore sensitive) phono signal has been shortened as much as possible. This is why the jumpers are very tight and close to the inputs.

We hope you will find that the manipulation difficulties are far outweighed by the VPS's quality.

Make sure that you are facing the phono module when setting the jumpers, in order to have good access and a good view of the serigraphy.

We advise you to use the supplied jumper pliers to make changes.

1 – Used to select balanced (**A**) or unbalanced input (in position **B**, one of the transformer's inputs is earthed).

2 – Must reflect the presence **(A)** or absence **(B)** of the additional load circuit.

3 – **A** for moving coil cartridge, **B** when unused.

4 – **A** for moving magnet cartridge, **B** when unused.

5 – **A** for internal transformer usage, **B** for external transformer usage (see page 16).

6 – **A** for additional 47 kΩ load on tube input, **B** when unused.

Load circuits

The Nagra VPS is supplied with 6 load circuits, 3 resistive loads (R) and 3 capacitive loads (C), allowing the settings of your VPS to most closely match the specifications of your cartridge manufacturer.

For each input module, Nagra offers you three free optional*, load circuits, individually tailored according to your wishes. Please contact your Nagra dealer for more information.

*Offer valid for a limited period following your purchase, please contact your Nagra dealer.

Each load circuit is numbered and matches precise load values, referenced in the card supplied in the box.

You can choose the load circuit to be installed according to the technical characteristics of your cartridge. (Please refer to the relevant manufacturer's data).

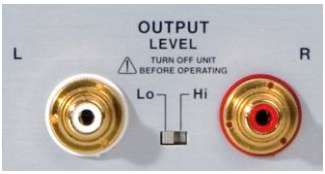
While waiting for the custom circuits, you can use the closest load value to that specified by the cartridge manufacturer.

Load circuit installation

Insert the load circuit into the designated slot on the Phono card.

Tighten the supplied spacer screw by hand to secure it.

Gain stage selection.



The Nagra VPS offers two output voltages, 300 mV (Lo) and 2 V (Hi), switchable on the back panel.

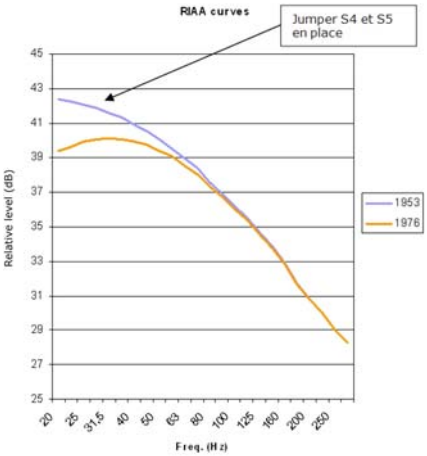
In the Lo position, the outputs are directly connected to the tubes. The maximum output level is approximately 300mV.

If your cartridge or preamplifier does not have enough gain, you can amplify the VPS's output by using the Hi setting. It adds a discreet component amplification stage that boosts the output level to 2 V.

NB Always mute your preamplifier or integrated amplifier when changing the Hi – Lo setting, as a small click may be heard at the output.

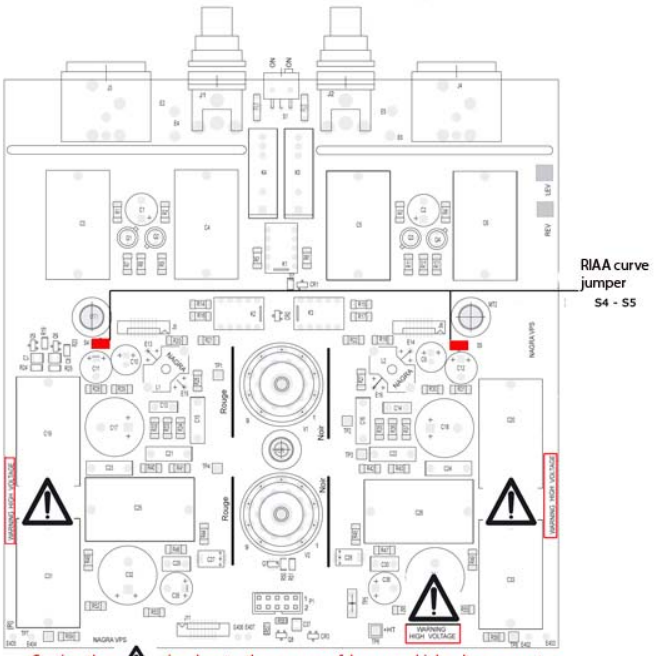
RIAA curves

You can modify the RIAA curve by moving the jumpers located on the VPS main board. The VPS complies with the 1953 and 1976 RIAA curves.



By default, the S4 and S5 jumpers are in place and you can enjoy the benefit of extended low frequency bandwidth.

If your turntable generates noise in the lower frequencies, you can attenuate them by removing the S4 and S5 jumpers. This position matches the 1976 RIAA - IEC curve, suited to "light" record decks, whose platters generate more noise.



External tranformer usage

You can use the VPS with an external transformer. In this case, you must set the jumpers to disconnect the internal transformer (on an MC card).

Here is the required setting: 1 B, 3 B, 4 A, 5 B.

On an MM card, you can connect the transformer directly to the input connectors. The jumpers are already in the correct position.

Tube ageing

The Nagra VPS tubes are selected according to exacting criteria. The theoretical minimum useful life of these tubes is 5000 hours. In real life, some tubes operate consistently for over 10 000 hours.

Thus, the useful life of the tubes is somewhat unpredictable. Rather than replacing the tubes arbitrarily after 5000 hours, we suggest that you learn to identify the signs of ageing:

- Increase in distortion to reach an audible level.
- Presence of clicks (dry and short noise, like breaking dead wood).
- Presence of pops, short noise in the low frequencies.
- Presence of hiss, higher background noise.

As soon as one of these signs appears, you must change the tubes to maintain the standard of performance of your Nagra VPS.

Nagra VPS replacement tube kit, order number 7055767000.

Case cleaning

Clean the VPS casing using a soft, non-fluffy, slightly damp cloth.

Do not use any cleaning products which could have a corrosive effect.

Technical specifications

The exact ratings for your phono preamplifier are available in the document supplied with your device.

Transformer ratio	11 dB	
Tube stage gain	34 dB	
Solid state stage gain	15 dB	
Frequency response	20 Hz (+1dB) 30 kHz (0 dB)	RIAA compliant
Signal to noise ratio	>77 dB (ASA A)	
Total harmonic distortion (THD)	<0.15%	Measured in Hi position
Crosstalk	Typically 60 dB	
Output level	300 mV (Lo mode) 2 V (Hi mode)	
Power supply	12 V DC	
Consumption	12.6 W	In standby position 1.6 W
Dimensions	310 x 254 x 76 mm	12.2 x 10 x 3 inches
Weight	3.3 Kg	7.3 pounds

Nagra Hi-Fi range

Here is some basic information about the Nagra product range. Please contact your Nagra dealer or visit our website to obtain more detailed information:

www.nagraaudio.com

High precision CD players
CDC, CDP or CDT depending on your needs, veritable dream objects designed according to the highest technical standards. The performances are closer than ever to the source and will make you rediscover your music collection. Since their release, the Nagra CD players have received the highest awards and have been adopted as a reference by the most prestigious companies.

High quality DAC
The DAC is the worthy heir of the Nagra D and Nagra V digital recorders. It offers exceptional performance, and multiple inputs and outputs to integrate with the most complex systems.

PL-L Tube Pre-amplifier
The PL-L is a class A tube pre-amplifier. Its electronic design is derived from the famous PL-P, whose casing it also borrows. It offers the benefits of a remote control and balanced outputs.

PL-P pre-amplifier with phono stage
The PL-P is the first device specifically designed for audiophiles by Nagra. This pre-amplifier, with a design inspired by the Nagra IV-S, runs on batteries. It features a phono stage equipped with Nagra transformers, whose quality is world renowned.

VPA power amplifier with 845 tubes
The VPA features an 845 push-pull output stage without feedback.
It's an amplifier that combines subtlety and power, refinement and speaker control. An absolute reference among amplifiers.

PMA monoblock power amplifier
With a mechanically and electronically innovative design, the PMA amplifier is derived from the MPA. Featuring a very innovative power supply, the PMA is equipped with a very uncluttered output stage, with a pair of MOSFET transistors working in a push-pull configuration. The purity of sound will remind you of triode amplifiers such as the VPA, the available power allows low impedance speakers to be used.

PSA stereo power amplifier
The PSA integrates two channels into a pyramid component. The sound aesthetics are identical to the PMA's, with half the power. The PSA is the most affordable Nagra product and a good introduction to the brand.

Déclaration de conformité

Declaration of conformity

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

APPAREIL : Nagra VPS
DEVICE: *Nagra VPS*

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 bursts 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 bursts 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 surges**	EN 61000-4-5 level 2 (1000V) **EN 61000-4-5 level 2 (1000V)**

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Cheseaux 3rd quarter 2007