

van den Hul[®]

User Manual

The BLACK HOLE



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Introduction

Congratulations with your purchase of the van den Hul BLACK HOLE.

With this product you are the owner of one of the most innovative and advanced mains filters available at this moment.

The BLACK HOLE is an extremely powerful quadruple outlet mains filter, specifically designed bearing ultimate performance and reliability in mind.

Acting as the best thinkable external firewall solution, The BLACK HOLE effectively deals with all potential mains related A/V quality degradation mechanisms, this whereas most other passive mains filter units only crudely deal with a few.

Power line related sound and video quality degradation can rise from many types of noise, all having to do with the complex interaction of the entire interconnected A/V system with mains power as a central factor.

By positioning itself between the "dirty" mains and all connected equipment, The BLACK HOLE keeps noise out and even breaks the noise leakage paths between all devices hooked-up to it:

The filter effectively provides each unit with its own clean noise-isolated AC power while preserving full surge power demand transparency (i.e. maintaining unimpeded current transfer).

The BLACK HOLE cuts mains-borne noise and spikes, removes direct current and provides high frequency isolation from mains.

Ultimate performance is furthermore delivered by a highly advanced circuit design which is resonance-free and adds our unique Dynamic Noise Absorption (DNA) concept.

The special features in some more detail:

- **Direct current removal:**
This means no more humming transformers in your equipment. The power transformers also produce much less distortion, induce less mechanical vibration to sensitive components and last but not least: are able to deliver significantly larger peak currents on demand; This means more dynamics as well as dynamic power during loud music passages.
- **Resonance-free:**
Most passive filters have built-in electrical resonances which can even amplify and concentrate power line noise. As such more easily reaching into your equipment, these resonances can change sound character and background.
The BLACK HOLE on the other hand prevents and even fights both internal and external resonances, thus keeping the power line dead quiet.
- **Dynamic Noise Absorption (DNA):**
DNA tracks the mains voltage waveform and irons out pulses and other noise-like irregularities by eating away their energy and peacefully digesting it into inaudible heat.

Designed to provide high-end audio, video and mixed setups with perfectly clean mains power, the filter is capable of handling up to 1800 Watt total connected load and is equipped with four individually noise-isolated outlets: two higher power outlets, intended for power amplifiers and other heavy loads and two lower power outlets, intended for pre-amps, CD- and DVD players, LCD TVs, etc.

The Van den Hul BLACK HOLE provides your A/V system with markedly improved transparency, definition, detail and dynamics. An advance in sound and video quality hard to switch back from once you are used to it.

The BLACK HOLE furthermore forms a perfect combination with our The MAINSTREAM and MAINSERVER Hybrid power cables.

Safety Precautions

For your protection and safe operation of the unit, please read the following:

Warning	Water and other Liquids - Shock Hazard To avoid risk of fire and electrical shock: Do not expose this device to moisture. Use indoors and in dry locations only. Do not expose to dripping and/or splashing. Do not place objects filled with liquids, such as vases, on or near the device. Do not operate the unit if any liquid is spilled on or into the unit; return it to your dealer for servicing.
Warning	Don't open the Device - Shock Hazard To avoid risk of electrical shock: Do not open the device. There are no user serviceable parts inside. Repairs are to be performed by qualified personnel only.
Warning	Cleaning Always unplug the unit before cleaning. It is only necessary to clean the unit with a clean, dry cloth or duster. Do not use any cleaning solutions, sprays, or water.
Warning	Mains Ground Connection Required For safety reasons and to protect connected equipment, this product MUST be connected to mains with a three conductor power cord which includes a working ground conductor. The power cord MUST be plugged into a grounded AC power outlet (3-prong). Do not use a 3-to-2-prong adapter to defeat the grounding pin. Failure to plug this product into a grounded outlet through a ground conductor including mains cord may result in personal injury or damage to your equipment. Call a licensed electrician if you are unsure if your AC outlets are properly grounded.
Warning	Maximum allowed Loads Do not connect loads which draw more current than the maximum rating printed near each individual outlet. Possible damages due to exceeding these maximum ratings will void warranty. The MAXIMUM CURRENT rating for each "Low Power" marked outlet is 2 Amperes. The MAXIMUM CURRENT rating for each "High Power" marked outlet is 8 Amperes. At 230 Volts mains this is equivalent to: The MAXIMUM POWER rating for each "Low Power" marked outlet is approximately 450 Watts. The MAXIMUM POWER rating for each "High Power" marked outlet is approximately 1800 Watts. Please Note: The current and/or power rating of devices to be connected can be found printed on their backsides or in their user manuals.

Warning	<p>Maximum allowed Total Load</p> <p>The total current drawn from all four outlets together may not exceed 8 Amperes, else the unit will shut down. At 230 Volts mains this is equivalent to: the total power drawn from all four outlets added together may not exceed 1800 Watts.</p>
Attention	<p>Rated Supply Voltage</p> <p>This device is designed for 220-240 V ~ AC, 50/60 Hz mains supply.</p>
Attention	<p>Moisture Condensation</p> <p>If the device is moved from a cold to a warmer area, allow warming up to ambient temperature for at least 1 hour without connection to the mains supply. This to avoid condensation inside the device.</p>
Attention	<p>Lightning Storms and Longer Periods of Inoperation</p> <p>Unplug this apparatus from the wall outlet during lightning storms or when unused for longer periods of time.</p>
Attention	<p>Device Placement</p> <p>The unit should be placed on a solid, flat surface. To allow free air flow around the unit, objects or equipment placed next to or on top of the unit should at least leave an air space of 1 centimetre. Do not place heavy objects or equipment on top of the unit.</p>
Attention	<p>Power cord Safety</p> <p>Power supply cords should be routed in such a way that they are not likely to be walked on or pinched by items upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance. Do not route power cords near heat sources.</p>
Note	<p>Serial Number</p> <p>The serial number is located on the back of the device. This serial number is unique for this device.</p>
CE	<p>CE Conformity</p> <p>This device conforms to the CE requirements according to Low Voltage Directive (LVD) 2006/95/EC.</p>

Installation and Use

Overview of the device:



- Front side: 1: Power on indicator
Rear side: 2: High power outlets
3: Low power outlets
4: On/off switch
5: Power entrance connector

Connection of the filter:

Follow these steps to connect the filter:

1. Make sure that the filter has been switched off by putting the on/off switch found at the backside in "off" mode.
2. The power entrance connector is found below the on/off switch at the backside of the device.
Use a 10 Ampere IEC C-13 female to Schuko male power cord to connect the device to a mains outlet with ground contact (*).

Important: Never plug the filter into a mains outlet without a working safety ground connection, else a dangerous situation will arise.

**: A plain three wire IEC C-13 power cord can be used. But if you want to get the best possible result, you can also use a high quality shielded power cord like our The MAINSTREAM Hybrid power cable.*

3. Before connecting any equipment to the filter's outlets:

3A. Important: For proper functioning of the unit and to avoid overloading it, it is important that your audio or A/V equipment is connected to the correct outlet type ("High Power" or "Low Power") found on the backside of the filter.

So, before you connect any equipment to the filter's outlets, each unit to be connected should be checked whether it is a High Power device or a Low Power device.

The current and/or power rating of devices to be connected can be found printed on their backsides or in their user manuals.

- Devices with a current rating up to 2 Amperes (or with a power rating up to 450 Watts at 230 Volt) should be connected to one of both "Low Power" marked outlets. Such Low Power devices however can also safely be connected to a "High Power" marked outlet.
- Devices with a current rating up to 8 Amperes (or with a power rating up to 1800 Watts at 230 Volt) **SHOULD** be connected to one of both "High Power" marked outlets. To avoid possible damage to the filter, such High Power devices **MAY NOT** be connected to a "Low Power" marked outlet.

3B. Second, it is important to check that the total current or power drawn by all connected devices (i.e. all individual currents or powers added together) **DOES NOT EXCEED** 8 Amperes or 1800 Watts at 230 Volt.

If these values are exceeded for a short period of time, the filter's on/off switch will automatically jump to the off position, shutting down power to all connected devices. In such case do not immediately switch the filter on again. Please refer to section "Problem Solving", point 2 on page 10 for instructions.

Please note: Overloading any outlet may result in damaging the filter.

Overloading the filter will void warranty as well as any liability for damage of any direct or indirect nature.

Always first check the power rating of your equipment before hooking up to the filter.

The equipment's power rating generally is printed at the rear of the cabinet near the mains entrance and/or can be found in the user manual.

4. After your audio or A/V equipment has been connected to the correct outlets, the filter is switched on first, then you can switch on your equipment.

Tip: For maximum noise immunity, it is best to keep all power and interconnect cabling in your setup separated by some distance from each other and to avoid routing cables in parallel.

Note: The filter performs at its best only when single devices are connected to each of its outlets.

- The filter's efficiency can be compromised if you connect mains distribution units/blocks to it to feed multiple equipment.
- The filter's efficiency can also be compromised if equipment connected to it has audio, video or digital cables running to other mains powered devices which are not powered from the filter, but directly from the mains instead. Cable links to unfiltered equipment can introduce noise leakage paths. It is recommended that all interconnected A/V devices in your setup are powered through a proper mains filter.

During use:

Keeping the filter switched on:

In principle the filter can be left switched on at all times since it consumes very little power by itself (*).

It is often more convenient to leave the power filter switched on while only switching on and off the connected equipment when needed.

For maximum safety we however advise to switch off the filter when unused for longer periods of time and to unplug it from the wall outlet during lightning storms.

**: The standby current of inoperated connected equipment however adds.*

Switching the filter on and off:

Although it is often more convenient to leave the filter switched on, the filter's on/off switch can be used as a master power switch for all connected equipment.

For maximum protection of your equipment we however strongly advise to **switch all connected equipment off before switching off the filter** (*).

**: This advice has nothing to do with the filter itself.*

There however is a small number of (mainly old) devices which cannot handle direct application of mains power while left switched on.

Such devices are designed to be switched on and off only by means of their individual on/off switches, not by directly applying or removing mains power (through the filter's power switch).

Most modern equipment can handle direct application of mains power while left switched on, but in case of doubt, please refer to the equipment's user manuals.

Technical Specifications

Rated supply voltage: 220-240 V ~ AC, 50/60 Hz

Maximum allowed total load current: 8 Amperes (*)
(all outlets together)

*: Thermal circuit breaker inside ON/OFF switch engages at total load currents exceeding 8 Amperes RMS

Maximum allowed output current: Each low power outlet: 2 Amperes
(individual outlets)

Each high power outlet: 8 Amperes

Quiescent power consumption: Switched ON: 3.5 Watt at 230 V ~ AC 50 Hz
(unloaded) 4.2 Watt at 220 V ~ AC 60 Hz

Switched OFF: 0 Watt

Problem Solving

Please check the following before requesting service.

Problem	Possible solution
<p>1 - The green power indicator at the front does not light:</p>	<ul style="list-style-type: none"> ▶ Check whether the filter's power switch is turned on. If the filter has switched off by itself, please refer to point 2 below. ▶ Check the mains cable going to the filter. ▶ Check whether the mains outlet which feeds the filter carries voltage by plugging in another device. <p>If there's no voltage, check the fuses and ground fault interrupters at your breaker panel (*).</p> <p style="text-align: center;"><i>*: In case of an exceptionally strong line transient event (e.g. due to a nearby lighting strike) it is possible for the unit to switch off or a fuse at your breaker panel to trip. This in protection of your equipment.</i></p> <ul style="list-style-type: none"> ▶ If nothing works, please contact your dealer.
<p>2 - The filter switches off by itself:</p>	<ul style="list-style-type: none"> ▶ The connected equipment most probably has drawn too much power. <p>The filter's on/off switch has a built-in thermal circuit breaker which flips the switch to off position when the filter's total load current exceeds 8 Amperes RMS for too long.</p> <p>Important: Please wait for at least <u>one minute</u> before turning on the filter's ON/OFF switch at the rear again. This a thermal circuit breaker that has to cool down. When not sufficiently cooled down, the ON/OFF switch will resist being turned ON.</p> <p>Do not apply brute force to tilt the switch from its thermally blocked OFF position. When sufficiently cooled down, the switch can be turned on normally.</p>

Warranty

A.J. van den Hul B.V. warrants your The BLACK HOLE to be free from manufacturing defects for a period of 2 years from date of purchase.

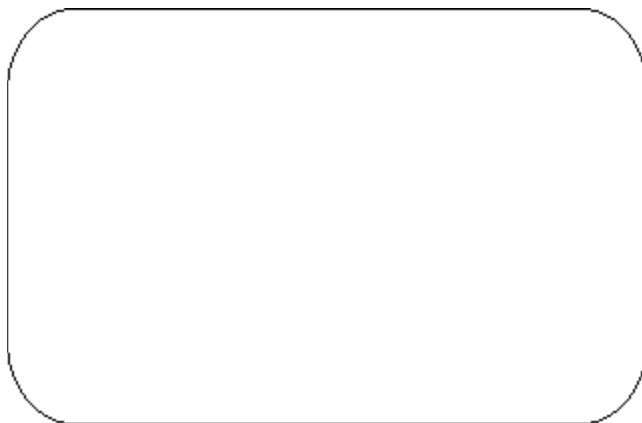
When warranty is claimed the original bill mentioning the buyer's name should be presented.

Warranty will void if:

- The device has not been used in conformance with the user manual.
- The bill has been altered or made illegible.
- The serial number at the rear side has been altered, removed, crossed out or made illegible.
- Modifications or repairs have been performed by non-authorized persons.
- Malfunction is caused by device-external conditions, like among other things: overloading, atmospheric discharges and fire or water damages.

Warranty is limited to internal damages regarding The BLACK HOLE itself: all eventual consequential damages are not covered by warranty.

Dealer Stamp



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