

# darTzeel

## NHB-458 Monoblock Amplifier

### User Manual





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# darTZeel NHB-458 monoblock amplifiers

## User Manual

### 1. Preliminary notes

The NHB-458 **cannot be user switched** from a different voltage setting than the one set at factory. This is an operation that only your authorized dealer can perform. **Any attempt in changing voltage setting will void the warranty.**

**Be sure that your AC wall voltage corresponds with NHB-458s' factory settings.**

Your NHB-458 pair comes with a USB activation key to provide the required identification data to your NHB-458's internal CPU.

Usually, both monoblocks come already activated to your name. If it would not be the case, you could use the provided USB keys in order to program en eventually unlock them. In such a case please contact your authorized dealer.

**Please refer to chapter 7, "Activation key procedure" (page 9), for how to obtain your USB activation-key data file.**

**Please read this user manual in its entirety.**

As it is the darTZeel rule, we did our best to avoid making you fall asleep. We hope to be successful in that regard...

**While already being pretty impressive out of the box, your NHB-458 will require about 170 hours of playing time before it approaches its full potential.**

### 2. Introduction

Congratulations on your purchase of a darTZeel NHB-458 monoblock pair.

The darTZeel NHB-458 is the most advanced analogue monoblock amplifier yet designed.

Grace, Delicacy and Power are the words which describe these musical machines the best.

The NHB-458 is the culmination, in terms of power amplification, of more than 30 years of true love and dedication to music reproduction.

Not only NHB-458s do joyfully distillate the slightest "pianissimi" with unbelievable realism, they also transport you into the heart of the musical event, effortlessly reproducing the loudest

"fortissimo" without any kind of limitation but your hearing threshold of pain.

Designed for uncompromising musical and emotional performance, the NHB-458 will nevertheless give its best when paired with the darTZeel NHB-18NS, the only preamplifier in the world using true 50-ohm matched impedance links as well as the unique and ultimate analog optical "zero contact" volume control signal path.

With its fluorescent display, you will have an easy and comprehensive access to the various operational menus.

With its very conservative ratings, the NHB-458 is comparable to a never ending energy reservoir. Bench tested at half a kilowatt under 8 ohms in continuous mode, it can deliver twice this power when playing music, and even much more than this when using 4-ohm speakers.

So, please be careful when you will start to tame these beasts. A single vinyl crackle can peaks at more than 300-400 watts because of the unprecedented speed and dynamics available. Otorhinolaryngology medical consultation is not included in the purchase price, so allow for your hearing some time to adapt.

### 3. Brief description

Your NHB-458s are the result of all the research and development we have brought to the audio industry over the past decades.

Our passion and love for music and its reproduction have been embodied in the NHB-458s.

The challenging goals we set for ourselves were to design and then build a power amplifier with no sound either built quality compromises.

You are among the very few owning a very unique design, and we at darTZeel are very proud to share this experience with you.

The entirely newly-developed audio circuits will drive any real-world load in a breeze, transforming your loudspeakers into a new window open to the music, anyhow they previously sounded so far.

With the NHB-458s' more than 450 watts RMS into 8 ohms, and 750 watts RMS into 4 ohms, even low-

sensitivity speakers will put out plenty of volume during your most demanding – dynamically speaking – listening sessions. When it comes to music reproduction, power is not needed in a sustained way; then enters the phenomenal dynamic power reserve.

Thanks to the huge 750 joules of energy available from the enormous capacitor reservoir, short but repetitive peaks in excess of 1 kW – yes, more than 1,000 watts – are delivered in a very clean way, and much faster than the time of an eye blink – here we mean a standard, human eye...

From the technical point of view, there is no doubt that the NHB-458 is a very special machine. Every single part was carefully selected, from the first resistor to the last power output transistor.

Adding to the beauty, in those “green” days, we are proud to say the NHB-458 actually runs very cool, saving on your electrical bill.

Needless to say those extraordinary performances deserve an equivalent outstanding dressing. We use our own aluminum alloy, made from custom made extrusion forms, and then both finishing and anodizing are performed by real artwork craftsmen.

When assembly time comes, our dedicated crew lovely assembles every module day after day until final completion; then our assembly chief engineer carefully looks for irreproachable making before bringing the NHB-458 onto the final 3-days bench test.

This is why you waited so long in getting your darTZeel NHB-458 monoblock power amplifiers. Not that we like to make our esteemed customers waiting for months but simply because love is also lot of pain and efforts to cope with, needing time to smooth everything down.

We are indeed very proud to say that our “Never Heard Before” motto plenty takes place when one talks about NHB-458 monoblock power amplifiers.

As for the most important thing you can ask for, and we obviously mean the *music*, you will simply find them... Enthralling.

## 4. Warranty

Your NHB-458s are guaranteed for one full year (parts and labor), against any breakdown or component failure, as is the tradition in Switzerland for such equipment.

As we view it, any electrical component with no moving parts either will fail within days, or will last virtually “forever.”

This is the reason all our machines are thoroughly tested and broken in, before being lovingly packed and sent on to you.

We are nonetheless aware that no component is always flawless, and that a problem could arise after the expiration of the warranty period.

In such a case, we will carefully examine all the circumstances, with the aim of reducing the likely repair costs to minimum levels.

You can always trust us for customer care, as you already trusted us when purchasing your NHB-458s.

**The warranty is valid in the original country of purchase only.**

The warranty is transferable to a single second-hand user within the first year, but only in the original country of purchase.

## 5. Installation

### 5.1. Unpacking

Your NHB-458s are delivered in an industrial wooden crate. We understand this is the less appealing part of the package; however it is the only way we found to safely ship your 70 kg/each emotional music reproducers.

Hopefully you will not have to bother unpacking the darTZeel NHB-458 monoblock power amplifiers; your authorized dealer will be very happy doing this for you, taking a chance to admire them while installing. A separate sheet is nevertheless provided in order to explain how to proceed, in case you would secretly want to install your machines by yourself, during a dark, moonless night.

**Please note that in case of future shipping, the original crate must be used if you want to avoid any possible damage.**

**Do not forget securing the power supply suspension screws before shipping. Any shipping damage will not be covered by the warranty if blocking screws are not installed.**

The wooden crates should contain:

- Two NHB-458 monoblocks amplifiers
- Two USB keys
- Eight golden plated screws
- Eight suspension securing screws
- Two AC power cables
- This user manual

## 5.2. Location

There is one “Left” and one “Right” machine.

You can check this on rear panel, looking to the RCA input: Left amplifier has its RCA outer ring WHITE colored, and the Right amplifier has its RCA outer ring RED colored.

Technically there is no difference between Left and Right machines, but as you will connect them from a stereo preamplifier which well has left and right outputs, why not following the rule until the end, for once...?

Left and Right identification is also displayed when hitting the NAME key from the front panel. But as this function is only available when you will power your darTZeel NHB-458 monoblock amplifiers, knowing this when locating them may help you. Anyway if would have reversed them, you could always claim to your friends that you chose L and R as if you were on the stage.

**Do NOT remove blocking suspension screws until your machines will be definitively located. Moving the NHB-458 will induce some power supply oscillation; in case of mechanical shock, internal anodized parts could be damaged.**

Before making any connection, you should carefully plan the location where you will install your gear. Best place is just next to each loudspeaker. Doing so will help to minimize speaker cable length; when connecting your NHB-458s to a darTZeel NHB-18NS preamplifier, we strongly recommend using our darT to Zeel 50-ohm links which will not only allow for ultimate performance level but also having the preamplifier – and the rest of the installation – located as far as needed, without any sound quality loss.

We do NOT recommend installing the NHB-458s in any furniture, unless you are healthy enough to play with 70 kg at arm’s length.

Therefore, please be forewarned that the NHB-458 will stop playing if it becomes too hot. This is not a situation which should ever occur under normal listening operation, though.

Thermal protection will shut down your NHB-458s at approximately 70°C (158°F). The power supply will start up again when the operating temperature will have dropped to 60°C (140°F).

It is also advisable, where possible, to leave enough space around your NHB-458 to allow easy access when making or changing connections.

## 5.3. Connections

Be sure that your AC wall voltage corresponds with NHB-458s’ factory settings.

### CAUTION!

**Never, ever proceed to ANY connection / disconnection before NHB-458s have been powered off by at least 2 minutes!**

Internal capacitor bank stores a lot of energy, and any wrong manipulation and / or short could possibly lead in a catastrophic failure by avalanche breakdown.

Be sure that there is no short between speaker wires!

Warranty will be void if the above is not respected.

As internal supplies are  $\pm 100$  volts DC, we anyway strongly recommend not playing with the rear panel when the machine is ON. Those are lethal voltages, so better not risking a shock – even if non-lethal in most of cases – by playing with wires when the NHB-458s are not switched OFF.

Apart from these – we hope so – scaring enough indications, we want to reassure you in the way that once your amplifiers will be properly connected, you will have ones of the safest machines ever designed in front of you.

Take your time when making all connections, check them twice if needed. Here again, we think that asking your authorized dealer for proceeding will be a good idea.

Speaker binding posts are from Cardas™. We chose this kind of binding posts because they allow for very big spades, greatly help in avoiding – most of cases – unwanted shorts, and they are the only ones which can be well tightened up without being lose over time. Thank you Cardas™!

When properly tightened, these connectors are pretty reliable and well keep the pressure on spades. Never use pliers to tighten, only do it by hand, the provided external rubber is very helpful to just tighten as firmly as needed without going mad.

In the case you would prefer banana plugs – which also have our favor – ask your authorized dealer for supplying a Spade-to-Banana adapter. We did not chose 5-way/Banana binding posts for the NHB-458 because of quite high current and voltage involved.

As soon as the NHB-458 is plugged into the AC wall outlet, its operation-status LED will turn red.

There is no master hardware (physical) on/off switch. We hope you nevertheless will sleep well, knowing that the NHB-458’s electrical-power consumption in standby mode is less than 5 watts for the pair.

## 6. The NHB-458 in detail

### 6.1. Front panel



Hereunder functions are for direct keying. Full key operational functions using the Menu Control Panel are described in chapter 10.

#### 1. Power Switch

When powered OFF (Stand By):

**L** Status Led is **RED**.

When powered ON:

**L** Status Led is **AMBER**.

#### 2. Menu Key

This key gives access to all user parameters described later in chapter 10

#### 3. Upper Display Reading

When depressed twice and more, upper reading will change from RMS, Peak, Peak<sub>HOLD</sub>, etc.

#### 4. Lower Display Reading

When depressed twice and more, upper reading will change from RMS, Peak, Peak<sub>HOLD</sub>, etc.

#### 5. Name

When depressed twice, owner name with serial number is displayed for about 10 seconds; another hit will display the owner name continuously. Depressing once again will display the darTZeel logo continuously. A last pressing and the display will resume to standard readings.

#### 6. Display Illumination

When hit twice, AUTO DIM will be activated, meaning that after a predefined time, the display will shut off. Depressing twice again and the AUTO DIM will be disabled.

The defined time after the display shuts off can be set via the Menu Control Panel; see chapter 10.

#### 7. Menu Related Key

This key has no operational function when hit but only activates the direct key access display, as it is the case for all other 3 to 6 keys.



## 6.2. Rear panel

We think the rear panel labeling speaks for itself. Nevertheless, we will try to keep you awake, by providing some general information...

Please note that only one input can be used at the same time. All inputs are connected in parallel, so connecting more than one input at a time will dramatically reduce sound performance.

As you will see, 2 “Power on triggers” are provided. They are intended for remotely power the amplifiers ON when using a darTZeel NHB-18NS preamplifier. These triggers are **NOT** standard 3.5mm audio jacks, but signal oriented, professional Neutrik sockets. Please ask your dealer if you want to use this feature.

As mentioned earlier, your darTZeel NHB-458 monoblocks amplifiers should already be programmed for you, and activation would not be needed; Anyway, you will note that we provide one **USB port** on the lower left corner. This is the one into which you will insert your **USB key** if further registering will be required, or when a firmware update becomes available.

For whatever reason, if your machines would not have been factory activated, please immediately ask your dealer in order to obtain your registration key.

When you register your NHB-458, you will need to insert your USB key into the rear panel’s USB port. Please carefully read the chapter 7, “Activation key procedure”, next page.

**!!! YOUR MACHINE WILL OPERATE FOR ONLY 15 MINUTES IF NOT PROPERLY ACTIVATED !!!**

### 6.2.1 Fuse and voltage settings

The voltage of your NHB-458s has been factory set.

**Be sure that your AC wall voltage corresponds with NHB-458s’ factory settings.**

From 100 to 125 volts AC, the rear breaker is indicated 16A.

From 200 to 250 volts AC, the rear breaker is indicated 8A.

There is no any fuse to replace. The thermal breaker is only intended to protect the machine and your installation against catastrophic failure. No Fuse, Better Sound!



**Operating voltage cannot be user altered** for technical and obvious safety reasons – remember the  $\pm 100$  volts DC internal supplies and the huge energy provided by the capacitor bank. No any “switch” could handle those high current/voltage.

So, if you move to another country, you may have to change the voltage setting. Please contact your dealer.

**In this case, a new activation code will be required.**

**!!! Warning !!!**

**Any attempt to alter voltage setting will void the warranty. Always ask your dealer for such an eventual change.**

## 7. Activation key procedure

In case your darTZeel NHB-458 monoblock amplifiers would not have been factory activated, they will operate only for the 15 minutes following each new powering on.

Please contact your dealer for remediate to this very deploring situation in order to quickly activate your machines.

Registration procedure:

We provide a USB activation key with each of your NHB-458s. This keys are blank when you receive them.

Ask your dealer to send you your activation-key data files.

Please note that you will need both a “Left” and a “Right” activation keys. You can know if which machine is “Left” or “Right” by depressing the “Name” key from the front panel, The serial number ends either with an “L” or a “R”. Activation keys are not interchangeable from Left to Right.

You will receive those by email in the form of a zipped (data-compressed) folder containing a file with a “dtz” name extension. If possible, use a PC Windows™ based computer when unzipping the files; sometimes MAC™ based computers could corrupt the files and activation will not work.

How to proceed:

1. Unzip (decompress) the key-activation software from the zip folder. Directly copy the “dtz” file onto the USB key, using your home computer. **DO NOT ALTER THE FILE NAME!**
2. Insert the “loaded” USB key into the USB port located in the rear panel of your NHB-458.
3. From the front panel, sequentially press the following: Menu ► Diag ► DTZ.
4. The file will be uploaded.
5. Remove the USB key.

At registration-inquiry time, please note that your owner name cannot exceed **14 characters maximum** in length. So, please use “J.D. Smith” instead of “Jonathan Donald Smith”... .

## 8. User parameters

The section starting at chapter 10 is the most important part of this user manual.

Thanks to the intuitive menus, you will be able to access all parameters directly from the front panel.

### 8.1. Main features

From the Menu Control Panel, you can, from other things, adjust the following:

- Input ► RCA OR ZEEL OR XLR. Factory setting is ZEEL. **Remember you cannot connect multiple inputs at the same time.**
- Output gain ► 26dB or 32dB. Factory setting is 32 dB.
- Power ON mode ► Music, Trigger, or Manual (trigger OFF)
- Display intensity ► 25%, 50%, 75% or 100%. Factory setting is 25%. **Please note that using 100% all the time will reduce the display span life.**

## 9. How to set everything

The following pages show how to fully set up your NHB-458s, by mean of schematic flow charts.

We reproduce most of display screens and explain how to proceed, as if you were in front of your machine.

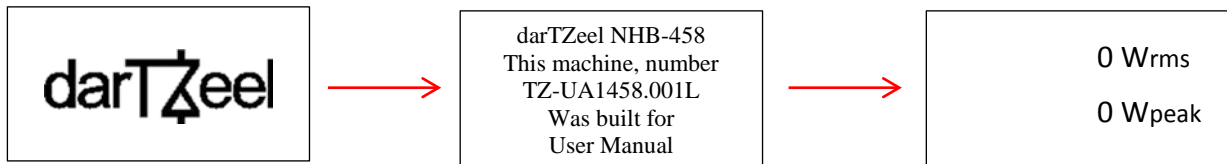
### Important note

In all Menu levels, depressing the “OK” key will confirm the level you are in, and then you will be able to alter settings. When not pressing “OK” first, using arrows will make you navigate into another Menu at same folder level.

Maybe trivial for your skill but nevertheless useful to know... See chapter 10 for full explanations.

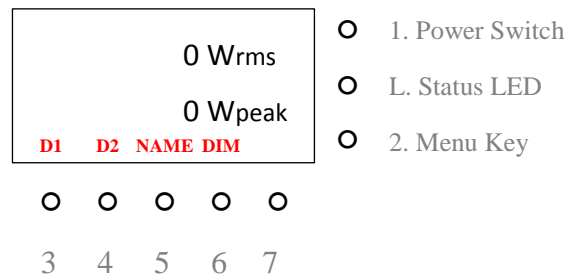
## 9.1. Power on sequence

Here is what you will see on the display screen when powering the darTZeel NHB-458 on:



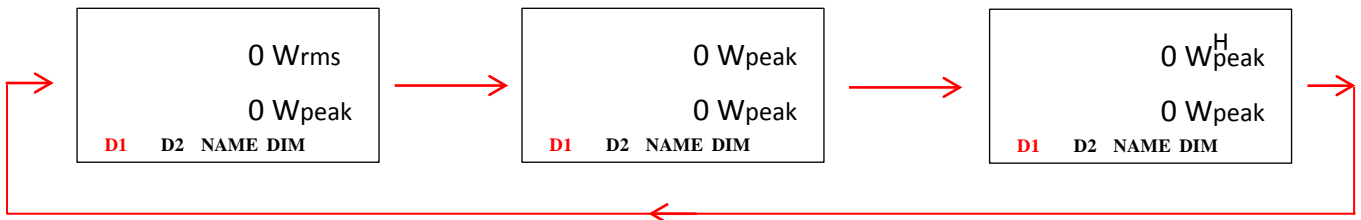
## 9.2. Direct Key Access

When hitting any key from 3 to 7, the display will show the **hereunder** direct access keys:



By pressing **DIM** key the display will dim off after 2 to 15 seconds (see chapter 10.1.). Pressing again will cancel the auto dimming function.

If you press **D1**, upper readings will change as follows at each pressing:



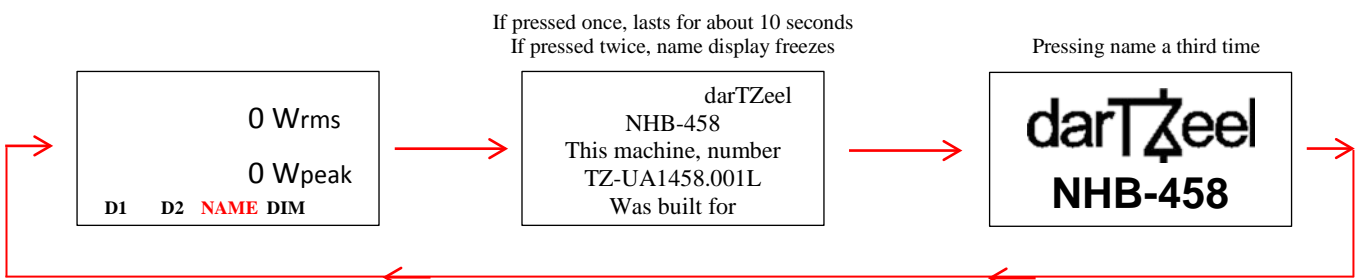
If you press **D2**, **lower** readings will change the same way D1 did.

**Explanation:**  $W_{RMS}$  means Root Mean Square, corresponding to the actual power dissipated in a pure resistor.

$W_{PEAK}$  is the peak power value; usually it corresponds to twice the sinus figure. However here we prefer displaying the “Instantaneous RMS power”, which better corresponds to human hearing perceived loudness.

$W_{PEAK}^H$  is the “Peak & Hold” value; here the reading keeps the highest value measured as long as another mode is chosen. This is a practical way to measure the loudest part of a music song.

If you press **NAME**, readings will display the followings after each pressing:



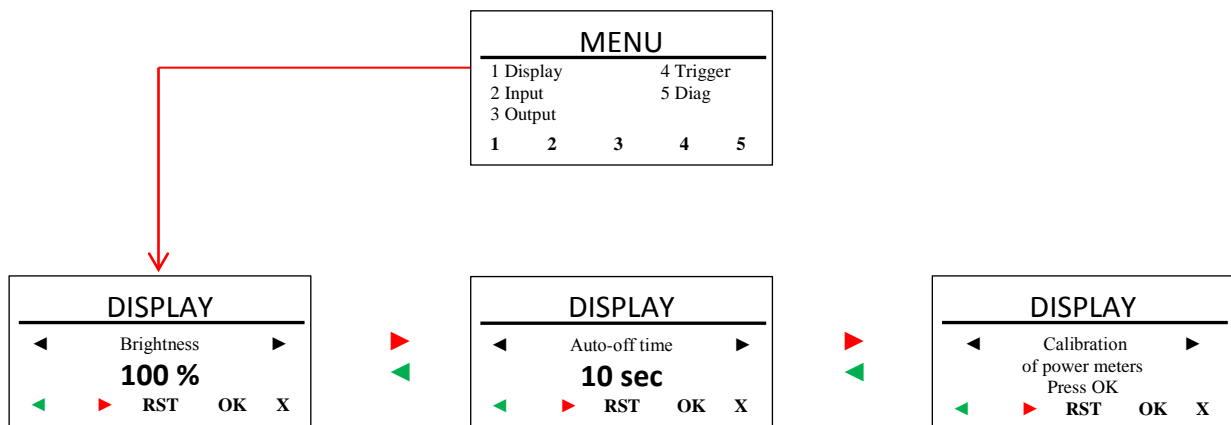
## 10. Full configuration and settings

Press the Menu key “2”, (chapter 6.1, page 8) on the front panel, and then play with the charts...

How to proceed:

- Press key 1-5 to select the desired parameter
- Once in the desired submenu, navigation works as is:
  - Use arrows to navigate between the different available choices, then press OK to enter into the desired parameter settings.
  - Then navigate again into this new second level submenu using the arrows or "+" and "-" keys for setting the desired parameter, then press OK to confirm the new setting.
- Pressing X key will go up to the upper sub menu level. Pressing X again will go to main Menu.
- Pressing RST will restore factory parameters in the corresponding sub menu level / settings.

### 10.1. Menu Display



You can choose the illumination brightness. Press OK to confirm brightness setting, and then use the "+" and/or "-" keys to choose between 25, 50, 75 or 100%. Press OK again to memorize the brightness level.

Press X to return into upper navigation level.

Suggested setting: 25% in order to save display life time. Press X once again to return to main Menu.

Here you can choose display Auto-off time, provided you previously selected this function via the direct access key (see chapter 9.2).

Press OK to enter into the Auto-off time sub menu, then press "+" and/or "-" keys to select the desired time, and then confirm with OK.

Press X to return into upper navigation level. Press X once again to return to main Menu.

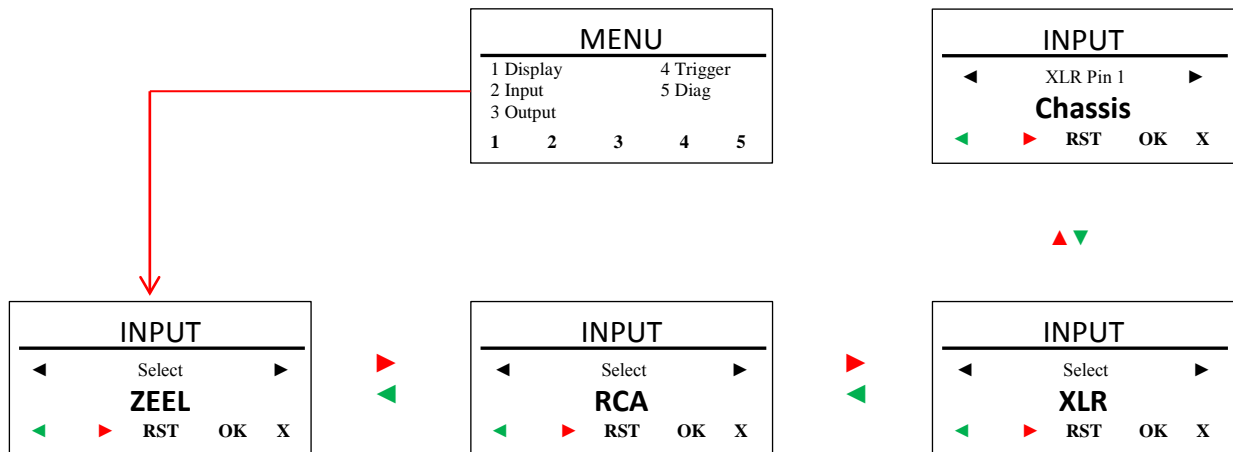
If power indicators do not display "0 Watts" when music is not played, you can recalibrate the power measurement circuit by just pressing OK key.

From this particular sub-menu you do not have to press X but left of right arrow to navigate back. Pressing X will return to main Menu.

## 10.2. Menu Input

Important note:

Only one input can be connected at a time. Simultaneous inputs connected can lead to lower performance, and can eventually damage the NHB-458.

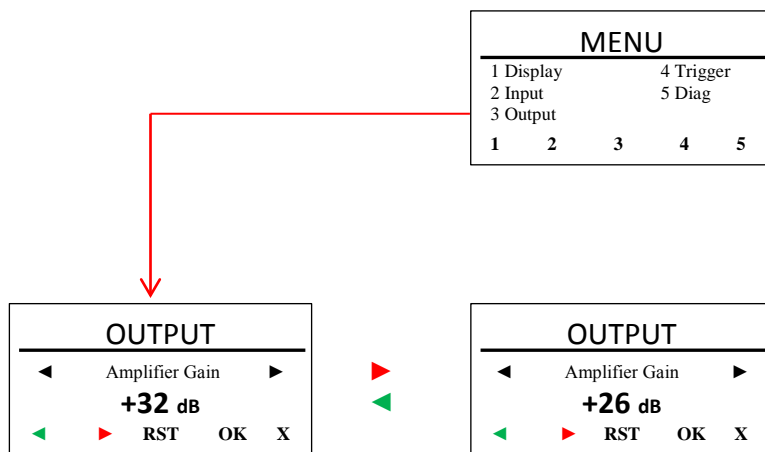


This BNC 50-ohm input is the preferred darTZeel mode of transmitting the audio signal. When used in conjunction with the NHB-18NS preamplifier, the line is fully impedance matched and all possible echoes are eliminated, bringing an unprecedented level of transparency. As the input impedance will be 50 ohms only specifically designed preamplifier can drive it. Press OK to confirm the input selection. Press X to return to input selection mode. Press X once again to return to main Menu.

This input is single ended, 30 kohms impedance. It is paralleled to the BNC input but the 50 ohms resistor is lifted. If your preamplifier has single ended RCA outputs, please give this input the preference choice because of the simplified signal path. Press OK to confirm the input selection. Press X to return to input selection mode. Press X once again to return to main Menu.

This input is truly and actively balanced, using a translator balanced to unbalanced dedicated circuit. If your preamplifier is only fitted with XLR outputs, use it. Ultimate performance will be slightly reduced because of the additional junctions present in the signal. However the loss will be extremely small considering the care taken during design process. Press OK to confirm the input selection. Press X to return to input selection mode. Press X once again to return to main Menu.

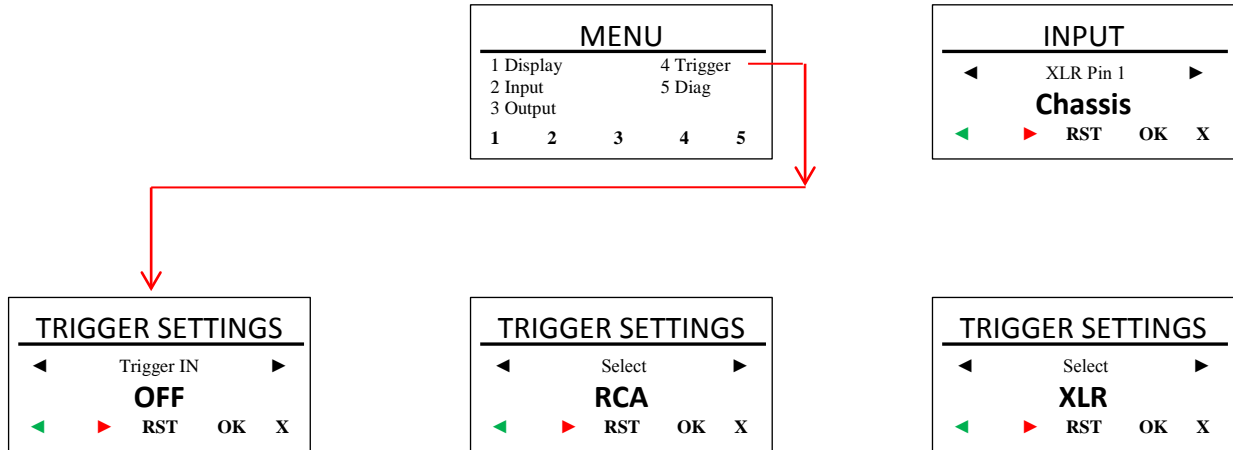
## 10.3. Menu Output



Here you can change the overall amplification gain. Press OK to confirm or use the arrows to select the desired gain, and press OK again for confirming the new setting. Factory default is 32 dB. Press X to exit the Output menu.

## 10.4. Menu Trigger

This menu allows for automatically power the NHB-458 ON, either when using the NHB-18NS preamplifier, or when music is played. It also allows for daisy chain several NHB-458 for powering them ON in sequence.



## END OF PRELIMINARY MANUAL

You can choose the illumination brightness. Press OK to confirm brightness setting, and then use the "+" and/or "-" keys to choose between 25, 50, 75 or 100%. Press OK again to memorize the brightness level. Press X to return to the upper level, allowing for choosing another parameter. Suggested setting: 25% in order to save display life time.

Here you can choose display Auto-off time, provided you previously selected this function via the direct access key (see chapter 9.2). Press OK to enter into the Auto-off time sub menu, then press "+" and/or "-" keys to select the desired time, and then confirm with OK. Press X to return into navigation level stage.

After selecting "Rename" from the above PARAMETERS menu, the default input source displayed is the one you have selected for listening.

Press ▲ or ▼ in order to change the source to be renamed.

Press ◀ or ▶ to select the character (alphanumeric key) to be changed.

Press + or - in order to browse from A-Z and 0-9. Space (blank) is just before "A".

Press OK to confirm the new name.

Press RST and OK in order to return to the factory default name.



After selecting "Settings" from the above PARAMETERS menu, the default input source displayed is the one you have selected for listening.

Press ▲ or ▼ to select another source.

Press + or - in order to adjust the input level.

The range is from -10dB to +10dB.

Press OK to memorize the level.

Press RST to return to 0dB.

Press ▶ to set Input balance, hereunder.



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Altering the default balance for a source can be helpful when a particular source, such as a phono cartridge, exhibits a channel unbalance.

Press + or - in order to adjust the input balance.

The range is from 9.5dB Left to 9.5dB Right.

Press OK to memorize the balance setting.

Press ▲ or ▼ to select another source.

Press RST to return to 0dB.

Press ▶ to set Input mode, hereunder.

Altering the input mode for a source can be helpful for a monophonic source such as an old AM tuner, or a mono or 78-rpm phono cartridge.

Press + or - in order to toggle between Stereo and Mono.

Press OK to memorize the input mode.

Press ▲ or ▼ to select another source.

Press RST to return to Stereo.

Press ▶ to set Input bypass, right after.



The "USER INFORMATION" screen indicates the serial number of your NHB-458, as well as your registered name.

Please be sure the registered name corresponds to yours.

If the registered name is not correct, immediately contact your dealer.

An improper registered name will void access to warranty rights.

Used for Home Theatre systems.

The gain of the bypassed source is 0dB.

**WARNING**

Pleasure Control will be bypassed!!!

Press + or - in order to toggle between bypass On and Off.

Press OK to memorize.

Press ▲ or ▼ to select another

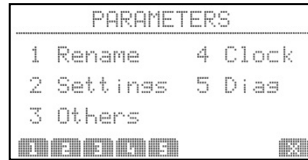


source.

Press RST to return bypass to Off.

Previous page

This is the maximum level at which your NHB-458 will power on.  
 In the above example, if - and only if - you listened at *more* than -26dB, the output level will resume to this value at the next start.  
 Press + or - to set the desired level.  
 Press OK to store this value.  
 Press RST to restore the factory default.  
 Press ► to set the source.



The NHB-458 will always start with a preferred source, that is, whichever source was selected during last powering off.  
 "No change" means the NHB-458 will start with same selected source as played during previous music session.  
 Press + or - to choose a source to be played at power on.  
 Press OK to save this setting.  
 Press RST to restore the factory default.

Go to previous page

Clock & Diag  
 SEE NEXT PAGE



Press ► to set the internal power amp.

Allows for 3 different types of attenuation. This can be useful when you just want to decrease the level instead of cutting it off completely.  
 Press + or - to set the Mute level:  
 ∞ → -20dB → -40dB  
 Press OK to memorize this setting.  
 Press ► to set the Volume limit.

When using the NHB-458 as a stand-alone preamplifier, the power-amplifier section will be shut off, improving both electricity consumption and signal-to-noise ratio.  
 Press + or - to enable or disable the internal power amplifier.  
 Press OK to confirm.



The NHB-458 will shut down and restart.

Enables/disables a maximum output level. Very useful for not overloading low power rated speakers, or simply allowing your kids to play with your system without shaking neighbors' walls!  
 When left to Off, pressing ◀ or ▶ will go



back to above "Mute level" screen.  
 Press + or - to set to On.  
 Press ► to set the new value in the next, hereunder screen.

In the sample screen above, the maximum output level has been set to -2.5dB.  
 Press + or - to set the desired value.  
 Press OK to store it.  
 Press RST to return to +12dB default.

When max volume has been set, there is no



need to reset the value when you do not want to use a limit, you simply enable or disable it.



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See Start time

If you have to set both the time and the date,



it will be easier first to set the date, and then the time.

Press + or - to set the correct hour.  
 Press ► to jump to the minute figures.  
 Press + or - to set the correct minute.  
 Press OK to save.

The time clock will synchronize at the moment you press OK. Until you press OK, the internal time clock will not be changed.

Press ▲ or ▼ in order to display the next screen, for date setting.

The date format is DD.MM.YYYY. This rubric cannot be changed. Sorry if you



are used to another format, but this is the most universal one.

Press + or - to set the correct day.  
 Press ► to jump to the month figures.  
 Press + or - to set the correct month.  
 Press ► to jump to the year figures.  
 Press + or - to set the correct year.

If the time has not been set yet:  
 Press ▲ or ▼ to return to "Set time", and adjust the time.

The date settings will be kept correct, saving you from entering the "Set Clock" menu twice.

Press OK to save.



When "Auto start" is set to On, your NHB-458 will power itself on at the time programmed on the next screen shown below.

When "Auto start" is left to Off, your NHB-458 will not start automatically.

Press + or - to set "Auto start" to On or Off.  
 Press ▲ or ▼ to go to the next menu, to set the start time.



Press + or - to set the correct hour.  
 Press ► to jump to the minute figures.  
 Press + or - to set the correct minute.  
 Press OK to save.

The STOP TIME procedure is exactly the same as START TIME.

Press "Stop time" from the main CLOCK menu in order to proceed.



This screen indicates the software version and the registration status.

DTZ: When your machine is new, you will need to register it. Insert your USB key into the rear panel port, and press DTZ.

BKP: This feature allows copying internal NHB-458 parameters onto the USB key, for factory diagnosis.

Insert your USB key into the rear panel port, and press BKP.

UPD: Used for updating the internal NHB-458 firmware.

Insert your USB key into the rear panel port, and press UPD.

Your USB key must contain the appropriate file in order to operate properly.

Further details about key activation procedure are described in chapter 7.

## 11. Some advice and tips

### 11.1. Cleaning and upkeep

The darTZeel NHB-458 has not only been designed to provide you intense moments of musical pleasure; it also has been designed to withstand the rigors of time – assuming that you take proper care.

The entire Swedish-steel case functions as a heat exchanger, while the two internal lateral heat sinks regulate and maintain the correct temperature. The vent slots provide heat dissipation, but they do not communicate with the inside of the machine.

Therefore, the NHB-458 is virtually dust-proof.

It is **not** recommended to clean internal parts.

**Actually, we do not recommend ever removing the top cover!**

As for the external parts of your machine, a soft cloth or even a dust brush will be completely adequate.

In case of fingerprints, a gentle rub with a cloth soaked in isopropyl alcohol should be sufficient.

Just bear in mind, however, that the simplest things are, more often than not, the most efficient.

We personally find that a spot of mild soap on a wet soft cloth is the best method most of the time. Try for yourself!

As you have certainly guessed, we confirm that it is strongly recommended to **never use acid** to clean your gear. Acid is very corrosive and could react with the front plate's anodized coating.

Furthermore, acid is very corrosive for the skin, too...

If you follow these few elementary rules, you will be assured of having a very nice-looking machine for years to come.

### 11.2. What not to do

Our advice and recommendations have been intentionally placed close to the end of this user's manual. That does not mean that they are of only minor importance – quite the contrary.

We just thought that the following points are not directly involved in the everyday use of your amplifier.

However, operating the darTZeel NHB-458 calls for certain precautions.

The few but important warnings are the following:

- **Never, ever attempt to short-circuit the Speaker Binding Posts.**
- Repeated short circuits will lead to permanent damage to the corresponding output stage.
- **When bi- or tri-cabling, be especially careful when connecting the cables. If you inadvertently cross the polarity of one run regarding the other(s), you will make a perfect short circuit. This can easily destroy the corresponding output stage!**

**The warranty will be partially or totally void in the event of non-compliance with the above!**

- Never forget to power off your darTZeel NHB-458 before connecting or disconnecting any source or loudspeakers.
- Never use a “contact enhancer” such as silver paste on the input terminals or speaker binding posts, as this may cause a short circuit and catastrophic failure.

## 12. Assistance

If you need *any* commercial or technical information about the darTZeel NHB-458, or if you have any difficulties or enquiries, please contact us by email at

[moreinfo@dartzeel.com](mailto:moreinfo@dartzeel.com)

You can of course write us at the following address:

darTZeel Audio SA  
2, chemin Louis-Hubert  
CH-1213 Petit-Lancy  
Geneva/Switzerland

We also invite you to visit our website at

[www.darTZeel.com](http://www.darTZeel.com)

We wish you countless hours of musical delight with your NHB-458. We hope that you will have no further need to read this manual, except for the pleasure...

Your darTZeel team

## 13. Technical data

darTZeel NHB-458

Nominal output power	:	200 watts RMS (230 watts peak) @ 8 ohms. 330 watts RMS (360 watts peak) @ 4 ohms. 330 watts RMS (400 watts peak) @ 2 ohms (software limited).
Line Gain	:	12 dB nominal, up to 22dB.
Power Stage Gain	:	26 dB @ 8 ohms.
Input impedances	:	Phono MM* = 47 kohms. Neumann RIAA 4th pole included. Phono MC* = 1 kohms. Neumann RIAA 4th pole included. RCA: > 30 kohms. Zeel BNC: 50 ±1 ohm. XLR: > 15 kohms between Pin 1 and 2. > 15 kohms between Pin 1 and 3.
Line output impedances	:	RCA = 75 ohms, darT BNC = 50 ohms
Speaker output impedance	:	< 0.33 ohms, from 20 Hz to 20 kHz (measured under 8 ohms).
Frequency response	:	3 Hz to 300 kHz, +0, -6 dB. 20 Hz to 20 kHz, +0, -0.5 dB. 20 Hz to 50 kHz, ±0.5 dB.
Rise time	:	< 0.8 µs.
Slew rate	:	> 88 V/µs, peak-peak.
DC output voltage	:	< ±15 mV max.
Total Harmonic Distortion (THD)	:	< 1 % from 7 Hz to 77 kHz
Temporal Distortion	:	None, at any level and load, as specified above.
Crosstalk	:	< -90 dB from 20Hz to 20kHz.
Signal to noise ratio	:	> 115 dB (A) @ nominal power.
Power consumption	:	3 watts Standby, 40 watts @ idle, 1000 watts @ maximum output power.
Size in mm	:	440 x 335 x 170 (WxDxH). Total deep with handles: 415 mm.
Net weight	:	28 kg.

\* Phono inputs are optional and are not installed in standard delivery.

darTZeel amplifiers are made to last forever by  
darTZeel Audio SA, in Geneva Switzerland.

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