

darTZeel NHB-108 model one

Owner's Manual



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darTZeel NHB-108 model one

Owner's Manual

1. Introduction

Congratulations for purchasing a darTZeel NHB-108 model one.

Our machines are designed and hand built for *very* long lasting use and musical pleasure.

The darTZeel NHB-108 model one is a highly unusual power amplifier, and requires special care. We strongly recommend you **read this manual in its entirety**, in order not to miss *any* reason for enjoying your machine at its very best!

When opening the crate, you certainly noticed the two separate information sheets. They are of primary importance and you must read them *without fail* before continuing.

These documents are:

- The warning notice, **printed in red**.
- The "3-step-to-go" commissioning leaflet, **printed in blue**.

While humor is truly part of our philosophy, please keep in mind that all our warnings *must* be taken into account, for the sake of your own safety.

If you carefully follow all the instructions herein, you will be rewarded by very long, joyful listening sessions, for years and years to come.

Please carefully keep all documentation and packing material in a safe place, especially the crate, in case you have to move house one day.

2. Brief description

The darTZeel NHB-108 model one is the pinnacle of more than 16 years of research & development, with the first goal

in mind being sound reproduction, nothing but sound reproduction.

Every basic element of the darTZeel NHB-108 model one was chosen for its high intrinsic sound qualities. No compromise about the cost price was even contemplated.

The result is what you can see, touch and hear... right now.

One of the secrets of the darTZeel NHB-108 model one can be found in two words:

Passion and Love... The passion for sound, of course, and love of music, needless to say...

As for the rest, we just put in few electronics, a wee bit of mechanics, and an awful lot of working hours.

If you want to know more about the technical side of the darTZeel NHB-108 model one, we invite you to read the supplied *Audiophile's technical manual*, in which you should find much of interest.

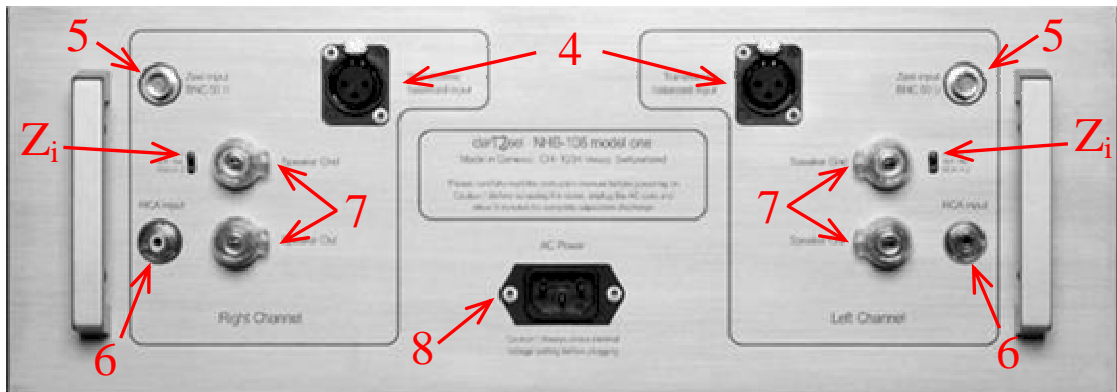
Also supplied is the *Music lover's manual*, more oriented on the sound aspects which guided us in the making of the NHB-108 model one. It should be taken as the ideal complement to the *Audiophile's technical manual*.

FRONT PANEL



1. Identification Plate
2. The Eyes
3. The Power Nose

REAR PANEL



4. XLR Inputs
5. 50Ω BNC Zeel Inputs
6. RCA Inputs
7. Speakers Terminals
8. IEC Power Socket
- Z_i. Input Impedance Selector

3. Who am I?

Your darTZeel NHB-108 model one bears, on its front panel, its **Identification Plate (1)**. On this 24k gold plated brass plate are engraved your name, and the serial number. Do not unscrew the plate since it is the identity card of your machine!

The serial number can be read as follows:

TZ-XY1081.dcbZ

X = Century of making
Y = Batch number
dcb = Identity in the batch number
Z = Version (**A** or **B**)

Example:

The sample bearing the serial number

TZ-UA1081.001A

Is the first machine of the first batch, made in the 21st century, and of version **A**. This numbering is thus valid until the end of the 26th century.

Unless specially requested otherwise, we deliver all darTZeel NHB-108 in version **A**. This is the version offering the most purist design, thus the best sound reproduction available.

Version **B**, a bit more versatile, is more fully described in chapter 8. "**Version B**".

Important! The rear panel has been designed to cater for both versions A and B.

It is vital to bear in mind all the following notes and remarks concerning the use of your darTZeel NHB-108 model one.

Thank you.

4. Connecting and setup

4.1. Location

Before making the first connection, you should think carefully about the location where you are going to put your gear. If you planned to fit your darTZeel NHB-108 model one into furniture, please bear in mind that you must allow at least one inch of free space all around the unit, for proper cooling.

If you do not respect this, the darTZeel NHB-108 model one may stop playing if it becomes too hot.

The heat sinks shutdown point is at around 70°C, and the power supply starts up again when the temperature has dropped to 55 °C.

Please also note that permanent excessive temperature will reduce the life span of your machine. Read the *Audiophile's technical manual* if you want to learn more about this topic.

Anyway, if possible, always leave enough space around your darTZeel NHB-108 model one, allowing you to gain easy access to it when making connections.

4.2. Speaker impedance

The darTZeel NHB-108 model one can drive virtually any loudspeaker, provided its nominal impedance is between 1 and 8 ohms. Above 8 ohms, maximum available power output will be slightly reduced, but without any sound quality loss.

Nominal impedance can vary by $\pm 20\%$, and can thus reach the following critical minimum values:

6.4Ω in the case of 8Ω speakers

3.2Ω in the case of 4Ω speakers

1.6Ω in the case of 2Ω speakers

0.8Ω in the case of 1Ω speakers

If your loudspeakers are between 4Ω and 8Ω, which is nearly always the case,

you can directly hook them to the **Speaker Terminals (7)**.

White terminal (upper) = Ground.
Red terminal (lower) = Live signal.

If your loudspeakers impedance is less than this, or if you want to parallel 2 pairs of 4Ω speakers, you must go to chapter 5.3. "User parameters" before you consider going further.

If you do not respect the above, you may encounter some blown fuses when playing music at loud levels.

CAUTION: You must connect your loudspeakers to the **Speaker Terminals (7)** before powering ON the darTZeel NHB-108 model one!

4.3. Choice of the input

Only one input can be used at a time. All inputs are paralleled, so you cannot select them separately.

If you do not own a darTZeel preamplifier yet, we suggest you use either **RCA (6)** or **XLR (4)** inputs, with the **Input Impedance Selector (Z_i)** switched on RCA Hi Z (lower position, physically speaking).

The XLR inputs are not balanced on the version A:

Pin 1 = Ground

Pin 2 = Hot leg

Pin 3 = Grounded through 13kΩ resistor.

If you have already paid us the honor of purchasing a darTZeel preamplifier, we strongly recommend using the **50Ω BNC Zeel Inputs (5)**, with the **Input Impedance Selector (Z_i)** switched on Zeel 50Ω (upper position, physically speaking).

The Zeel input is definitely the one that will bring you the purest sound ever achievable. Read the *Audiophile's technical manual* if you want to know more about this topic.

4.4. Powering ON

Please do not forget that the darTZeel NHB-108 must have loudspeakers connected before you power ON.

Your machine has already been factory set in order to adapt to your mains supply, as confirmed by the sticker on the glass cover. In case of doubt, please contact us.

Connect the supplied power cable into the **IEC socket (8)** and plug the other end into the mains wall outlet.

You can then power ON the darTZeel NHB-108 model one by pushing the **Power Nose (3)** button.

If a source is already connected, you should immediately hear the music.

When powering the amplifier OFF by pressing the **Power Nose (3)** button, you can still hear the music for 10 to 30 seconds before the level goes down dramatically and stabilizes. This behavior is perfectly normal, and it is not a failure at all. If you need more details about this, please refer to the *Audiophile's technical manual*.

5. Using the darTZeel

5.1 Power cycle

The darTZeel NHB-108 model one has been designed to deliver more than 90% of its magical sound at cold start.

After 5 minutes, you are very close to the best the machine can offer. The increasing quality you may hear as time goes by will be mostly the reflection of your growing musical pleasure...

No need then to leave your machine powered ON all the time, except of course if you like paying bigger electricity bills...

If your present preamplifier produces some clicks and/or bumps when powering on/off, we suggest you observe the following sequence:

Powering ON: first the Preamp, then the darTZeel NHB-108 model one.

Powering OFF: first the darTZeel NHB-108 model one, then the preamplifier.

If this procedure is not respected, you may encounter some blown fuses due to Crowbar triggering.

If you still hear some thumping at powering OFF, you will have to wait around 10 seconds before switching the preamplifier OFF. This noise, however, will be inconsequential and harmless.

5.2. darTZeel's Eyes

The 2 giant orange LEDs, called **Eyes (2)** for obvious reasons, are fully featured function indicators. Five different illumination states, for each individual channel, are described hereunder:

- 1) Eyes shut (light off). This is of course the status when the darTZeel NHB-108 model one is either powered off or not plugged in. If one Eye only is shut, it means that there is a power fault or a blown fuse in the channel in question. In the latter case, please go to chapter 6.1. "Fuse(s) replacement".
- 2) Idle state. 45 to 55 seconds after powering ON, and with no input signal, the Eyes go into this barely illuminated state.
- 3) Signal presence. When an input signal, corresponding to over 10 mW at 8Ω is detected, the Eyes illuminate fully. You are in "musical cruise mode". When the input signal disappears for more than 45 to 55 seconds, the Eyes go back to idle state.
- 4) Clipping. When approaching maximum output power, the corresponding Eye flashes brightly for about half a second, and then goes back to the "musical cruise mode".
- 5) Blinking. If an Eye blinks, it means that absolute DC voltage greater than 0.6 volt is present at the corresponding output. This indicates that your machine could do with some recalibration, though it is still working perfectly, musically speaking.
If absolute DC voltage continues to grow until reaching 2 volts or more, the Crowbar circuitry will immediately short circuit the corresponding power supply, protecting your precious loudspeakers.

5.3. User parameters

The darTZeel NHB-108 model one must be correctly set, accordingly to the loudspeakers' nominal impedance. Your machine is already factory set for speakers having nominal impedance from 4Ω to 8Ω, as is usually the case.

If your loudspeakers' nominal impedance is between 1Ω and 2Ω, or if you connect two paralleled 4Ω speakers, you **must** adapt your darTZeel to that load. If you want to know more about this special mode, please read the *Audiophile's technical manual*.

The procedure for the adaptation of the output impedance is described hereunder:

Power the machine OFF.

!!! UNPLUG THE AC CORD FROM THE WALL, and please wait for 5 minutes !!!

Disconnect all links you may have installed by removing all cables from **inputs (4), (5) or (6)**, and from **Speakers Terminals (7)**. Unscrew the single central cover screw, and remove the smoked glass using the supplied suction grips, as shown in fig.1 Gently wet them in order to get firm vacuum. Please be very careful when removing the cover, since it is real glass, not Plexiglas™.

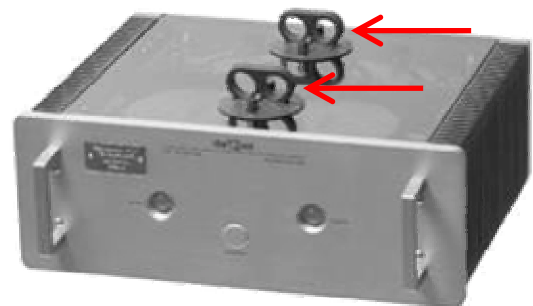


Fig.1 Suction grips

The speaker's impedance switch is located at the upper left of the transformer (upper right for the right channel),

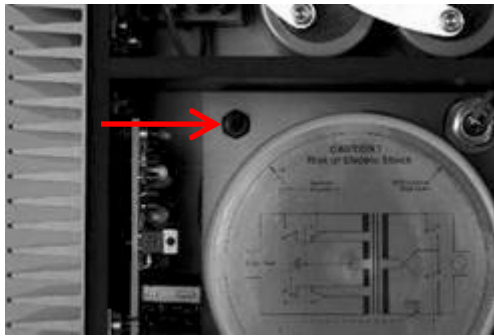


Fig.2 Speaker's impedance switch

as shown in Fig.2

When the switch is pointing towards the front plate, you are in **Lo** mode, suitable for 1Ω and 2Ω speakers. In this mode, you can also parallel 2 or even 3 pairs of 4Ω speakers.

By flicking the switch towards the rear panel direction, you set the **Hi**, default mode, for 4Ω and 8Ω speakers. This is the most often used configuration.

The darTZeel NHB-108 model one being a true dual mono design, you can also use it to biampify hybrid loudspeakers (having different technology and impedance drivers, i.e. an 8Ω woofer and a 2Ω tweeter) by switching one channel to **Hi** and the other one to **Lo**, respectively. Please bear in mind that in this case, you will need *two* darTZeel NHB-108, one for each loudspeaker.

Once you have chosen your configuration, you can carefully put the glass cover back, and screw it on again as follows:

Freely hand screw until you feel the thread-end resistance. Then use the supplied screwdriver and turn an extra 1/8 turn approximately. The screw must be sufficiently tightened to prevent the possibility of the glass rotating around the screw axis.

Then reconnect all the wires and cables, **paying special attention to the loudspeaker cables. They must be hooked to the Speaker Terminals (7) before powering the amplifier ON.**

Now just sit back and relax, and immerse yourself in pure musical pleasure!

6. Maintenance

6.1. Fuse(s) replacement

The following procedure concerns the left channel. For the right channel, the procedure is the same but that the fuse is in a mirror image configuration.

If one – or both – fuse(s) has/have blown, first try to determine the cause.

The Crowbar circuit installed in the darTZeel NHB-108 model one causes fuses to melt when an abnormal situation is detected.

For more information about this topic, please refer to the *Audiophile's technical manual*.

If a newly replaced fuse immediately melts when you power on your darTZeel NHB-108 model one, even though your speakers are correctly connected to the **Speakers Terminals (7)**, **unplug the AC mains** and contact us directly:

troubles@dartzeel.com

Hereunder is the procedure:

In order to change a fuse, power off your darTZeel NHB-108 model one by pressing the **Power Nose (3)** button.

!!! UNPLUG THE AC CORD FROM MAINS, and wait for 5 minutes !!!

Remove all the input and output connections.

Remove the single central screw located on the top smoked glass cover. Take the two supplied suction grips, slightly wet them in order to provide strong vacuum, and firmly apply them on the cover glass, as indicated in Fig.1

Please be careful when removing the top cover, since it is of real glass, not Plexiglas™.

Put the amplifier on a carpeted surface, and gently (but firmly, as it is a heavy, 30kg electronic creature) pivot it vertically onto its front handles. Use a protective cloth as indicated in fig.3 in order to avoid scratching the inside aluminum parts



Fig.3 Soft cloth

while using the supplied long nosed pliers (fig. 4),



Fig.4 Supplied tools

Gently turn the fuse holder, as shown in fig.5, 180° counter clockwise,

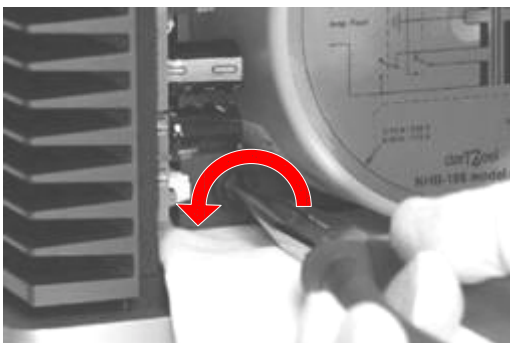


Fig.5

and pull it off, as shown in fig. 6

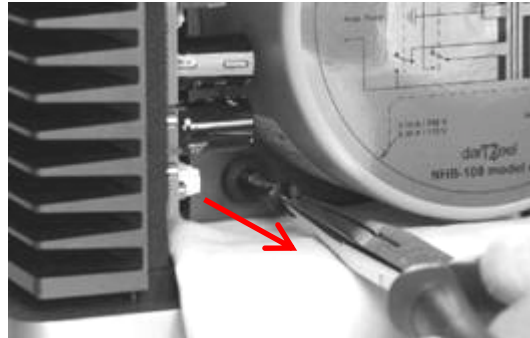


Fig. 6

Then turn again 180° counter clockwise and let the fuse fall onto the inner side of the front panel, as shown in fig. 7

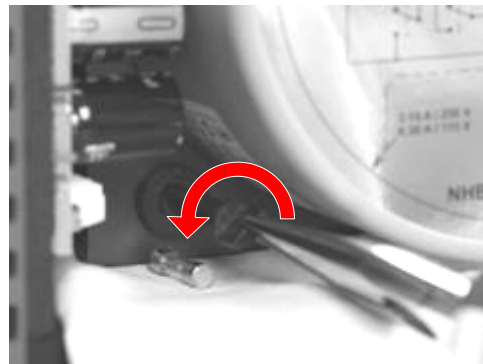


Fig. 7

Pick up the fuse with pliers and check that the glass envelope is dark or black, indicating a blown fuse. Remove it and simply install a new fuse in the holder. Once the new fuse is inserted, push back the fuse holder and turn it 180° clockwise until you feel a slight click. You're back in business!

Fuse ratings are:
 110-125vAC: 6.3 amps slow blow.
 220-240vAC: 3.15 amps slow blow.

Never use improper fuse ratings. Very great fire risk!

Now you can restore the amplifier back to its horizontal position and put the glass cover on, as described in chapter 5.3. "User parameters".

Connect again all your cables, **without omitting the loudspeakers**, and power ON your darTZeel NHB-108 model one.

Now you are ready to enjoy some more good music, compensating all that tiring physical effort you have just put in...

Although the above procedure could seem rather long and complicated, you will see that it is a simpler task to perform than to explain.

Anyhow, if you carefully respect all advice and warnings, you should never encounter such problems of blown fuse(s).

6.2. DC voltage drift

Every single darTZeel NHB-108 model one is lovingly checked, tested and listened to for more than 4 weeks before leaving our workshop.

Output DC voltage drift normally does not need any further adjustment, provided you use your amplifier in a room temperature ranging from 59°F to 95°F (15°C to 35°C).

If one – or both – Eyes begins to blink, even though **your loudspeakers are properly connected**, a readjustment is recommended.

This tuning procedure is described in the *Audiophile's technical manual*.

6.3. Cleaning and upkeep

The darTZeel NHB-108 model one has not only been designed for providing you intense moments of musical pleasure; it is also designed to withstand the rigors of time, especially if you take proper care.

This is undoubtedly one of the few, if not the only, amplifier to be virtually dust-proof. The whole case performs heat exchange, while the two lateral heat sinks regulate and maintain the correct temperature. This design avoids the need for any vent slot.

The only visible traces you will see in the long-term will be located on the inner side of the smoked glass, and will be due to some natural evaporation of some plastic packaged components.

We suggest that you remove the cover glass once a year, and use a soft cloth to gently wipe the glass with an appropriate cleaning solution. Your darTZeel NHB-108 model one will then keep its "like-new" aspect for decades, and as time goes by, the less you will need to perform this operation.

As for the external parts of your equipment, 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 will be more appropriate.

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

We personally found that a spot of 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 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 decades to come.

7. Some advice and tips

7.1. What not to do

Our advice and recommendations have been voluntarily placed close to the end of this owner's manual. This 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, the completely new concept of the darTZeel NHB-108 model one calls for certain precautions.

These few but important warnings are the following:

- 1) **Never, ever attempt to short circuit the Speaker Terminals (7).**

Repetitive shorts could lead to permanent damage to the corresponding output stage.

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

- 2) Do not power ON the darTZeel NHB-108 model one when no loudspeaker is hooked to the **Speaker Terminals (7)**. In such a case the internal fuses could be blown by the Crowbar circuit.
- 3) Before connecting or disconnecting the audio cables to/from the **RCA (6)** or **XLR (4)** inputs, always flip, when possible, the **Input Impedance Selector (Z_i)** onto "Zeel 50Ω" position. You will thus avoid any of the resulting parasitic click and bumps.

7.2. Troubleshooting

While setting up your darTZeel NHB-108 model one, it is possible that you may not obtain the desired results.

Hereunder we list the most frequent problems you are likely to encounter. If the problem cannot be solved, please do not hesitate to contact us directly at:

troubles@dartzeel.com

7.2.1. Eyes Closed

The eyes are closed – I beg your pardon, extinguished - while the **Power Nose (3)** button is ON. Please check that the AC power cord is correctly connected at both ends, and that the mains AC voltage is present. Just test with a table lamp. If AC is present, it means that both primary fuses have melted. Please go to point **6.1. "Fuse(s) replacement"**.

One Eye only is not lit. This means that you have to change the corresponding channel fuse.

7.2.2. Amplifier ON, no sound

Please check first the Eyes' illumination state, as described in point **5.2. "darTZeel's Eyes"**.

- A) Idle state. No signal is present at the input of your darTZeel NHB-108 model one. Be sure that the source (SACD, CD, Tuner or whatever) is correctly

selected and connected to the preamplifier feeding your machine.

Please also verify that the **Input Impedance Selector (Z_i)** of each channel is at the lower position (Hi Z).

- B) Signal presence. The input source is correctly connected and routed, **but the loudspeakers are not hooked to the Speakers Terminals (7)!** We remind you that this is totally forbidden. Okay, no trouble for this time. You are lucky enough that the Crowbar circuit did not melt one fuse or two...

7.2.3. Warped sound

The **Input Impedance Selector (Z_i)** of one or both channels is in the upper position (Zeel 50Ω).

Your present preamplifier not being a darTZeel (this will change one day), its outputs cannot drive 50Ω loads.

So please switch the **Input Impedance Selector (Z_i)** in Hi Z mode (lower position).

7.2.4. Sensitive fuses

Fuses have the bad tendency to melt much too often. Why, then, not replace them by a higher value rating?

Please **never, ever** do such a thing!

Improper fuse ratings could produce a **fire!** Please carefully read the *Audio-ophile's technical manual* in order to better know the Crowbar circuit.

Fuses can blow if the nominal impedance of your speakers is less than 4Ω and your darTZeel NHB-108 model one has not been set up to drive such a load.

Please refer to chapter **5.3. "User parameters"**. Then again check your fuses if you are in doubt, by taking a look at point **6.1. "Fuse(s) replacement"**. Be sure that you are using fuses of **correct rating**.

7.2.5. Sound too quiet

- A) darTZeel's Eyes are in the following, quasi-permanent state:

Clipping.

Your speakers are particularly inefficient! Please choose loudspeakers of more than 84 dB/w/m ...

Alternatively, maybe your room is too big, and that even with your old 1200 watts per channel powerhouse amp, there was only just enough volume?

In such a situation, please do not hesitate to consult us. We will try to help you find a solution.

- B) The volume setting of your preamplifier is close to maximum.

This can occur if you use either a passive or a low gain preamplifier.

The darTZeel NHB-108 model one has a gain of 26dB, which is slightly lower – two times – than usual. If you think that the preamp you are using is the preamplifier you want to die with, we can adjust, to a large extent, the gain of the darTZeel NHB-108 model one, for appropriate matching.

However, this is a delicate task and must be done by a qualified person with a well-equipped workshop.

7.2.6. Sound too loud

Please realize that the sound of a darTZeel NHB-108 model one can never be too loud!

More seriously, you could find yourself always using the volume control of your preamplifier in the first quarter of its full range, while getting high sound levels.

We can also *decrease* the gain of your amplifier to suit your high gain preamplifier. Please note however, that we suggest you consult us before thinking of such a modification.

7.2.7. Blinking Eyes

- A) Eyes blink at cold power ON. If your listening room is at a temperature below 65°F (18°C), this could be considered as normal, provided that this behavior disappears in the following 3 to 5 minutes.

In a room at a temperature above 65°F (18°C), blinking eyes indicate that your darTZeel NHB-108 model one could do with some tuning. However, if this behavior ceases after 3 to 5 minutes, and especially if you can put

up with it, no adjustment is mandatory.

- B) Eyes blink after several hours, when the machine is hot, or even *very* hot. If your room temperature is above 90°F (32°C), this can be considered as normal behavior, and normally the eyes should stop blinking as soon as the ambient temperature return to "human being" levels.

Please also check that your darTZeel NHB-108 model one is properly ventilated, as indicated in chapter 4.1. "**Location**" and that you are not using it at quasi-permanent power clipping levels with 4Ω loads.

If the ambient temperature is under 90°F (32°C) but the Eyes blink, your machine needs some tuning.

To cut a long explanation short, darTZeel's eyes should not blink in ambient temperature ranges from 65°F to 90°F (18°C to 32°C). If they do, the amplifier needs some adjustment.

In all cases it is important to know the working environment in which you will use your darTZeel NHB-108 model one.

If you live at the South Pole or on the Equator, a slightly different setting could be necessary....

Furthermore, in big ambient temperature change conditions, we strongly recommend using the version **B** of the darTZeel NHB-108 model one.

If you need to know more about this topic, can you guess what? Yes, read the *Audiophile's technical manual*.

7.2.8. Melting Fuse(s) at power ON

The darTZeel NHB-108 model one features a Crowbar inhibiting circuit working at power ON. During the first 20 milliseconds, no Crowbar operation will occur, avoiding blown fuse(s) if bumps greater than 2 volts are detected.

However, if you power your machine ON again, immediately after having powered it OFF, it is possible that it will eventually trigger the Crowbar circuit, and lead to melted fuse(s). In such a case, you will have to change the blown fuse(s) as de-

scribed in chapter 6.1. "**Fuse(s) replacement**".

In order to avoid this situation, we recommend that you wait around 3 seconds before powering you darTZeel NHB-108 model one ON again, when switched OFF.

7.2.9. RAS (Regular And Satisfactory)

In such a situation, we sadly deplore having no real cure.

We suggest you display your most charming smile, relax in your armchair, and enjoy listening to your favorite tunes.

Symptoms should disappear by themselves within a few days. If everything continues OK, please invite some friends!

8. Version B

As we told you at the beginning of this owner's manual, the darTZeel NHB-108 model one exists in 2 different versions

The version **B** has 2 added features compared to version **A**, and these are:

XLR inputs are **true floating balanced**, coupled via input transformers.

Output DC voltage drift is monitored and zeroed by an analog, low phase shift circuit.

It is always possible to swap from version **A** to version **B** at some later date.

This change uses exactly the same circuits and components, as if the machine was directly purchased in version **B**.

Hence a modified version becomes a fully-fledged version **B**, as shown by the **identification plate (1)**, newly engraved.

8.1. XLR floating inputs

Having in mind the wish to satisfy every user, we specially developed true floating balanced XLR inputs. Instead of using electronic circuitry having poor common mode rejection, the darTZeel NHB-108 model one uses very high quality transformers.

Thus, the **Input Impedance Selector (Z_i)** now has 3 positions instead of 2. This

third one, located at center position, is needed to isolate the transformers from the audio when XLR inputs are not used.

This selection is done by means of relays of the highest quality available. The rear panel labeling is thus in conformity with the version **B**, which is the one that will need the most of the interventions.

8.2. DC output voltage drift

To be fully independent from external temperature changes, a new analog, real time correction circuit has been added. The darTZeel NHB-108 model one is now able to work over a great temperature range, without any significant DC voltage drift.

This DC output voltage drift correction circuit can be disabled if needed.

8.3. Version A versus B

Although the version **B** is more versatile in use and significantly more expensive than the version **A**, there is no subjective sound improvement.

The use of relays, however high their quality may be, for switching the XLR inputs, constitutes an extra stage in the signal path.

In addition, the circuit used for correcting the DC output voltage drift, despite all the care we put into it during its design, cannot be kept entirely outside the signal path. This is why you can cut it out if so desired.

It is interesting to note, however, that when using the **50Ω BNC Zeel Inputs (6)** in conjunction with DC drift correction disabled, the version **B** behaves sonically *exactly* like the version **A**, and that the 50Ω mode is the one which offers the highest quality available.

If you want to know more about this topic... please read the *Audiophile's technical manual!*

9. Conditions of warranty

9.1. Breakdowns or faulty parts

The darTZeel NHB-108 model one is guaranteed for one full year, parts and labor, against any breakdowns or component failure, as is the tradition in Switzerland for such equipment.

As we see it, any warranty longer than 1 year is the obvious sign of inferior quality and design, indicating that a failure could arise anytime.

Any component will either fail within days or will last "forever" (several decades in practice).

This is the reason why all machines are broken in for more than 4 weeks in continuous use, before being lovingly packed and sent to you.

We are still fully aware that no component is always flawless, and that a problem could arise anytime after the warranty period.

In such a case, we will carefully examine every situation, 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 darTZeel NHB-108 model one.

9.2. Conditions of use

darTZeel and Delétraz Engineering companies disclaim any responsibility in case of damage or injury directly or indirectly due to any misuse, incorrect manipulation, or simply the non-observance of **red warnings**, and/or advice formulated in this manual, in the *Audiophile's technical manual* and in the *Music lover manual*.

Any non-authorized intervention *on* or *in* the darTZeel NHB-108 model one, or any failure due to one of the situations described above, or any similar situation, will render the warranty void.

10. Assistance

If you need *any* commercial or technical information about the darTZeel NHB-108 model one, or if you have any difficulties or enquiries, please feel completely free to contact us by email at

info@dartzeel.com

or by fax at +41-(0)22784.4394.

We also invite you to visit our web site at

www.dartzeel.com

We wish you countless hours of musical delight with your darTZeel NHB-108 model one and do hope that you will have no further need to read this manual except for the pleasure...

Musically yours,



Hervé Delétraz

11. Technical data

darTZeel NHB-108 model one

Nominal output power :	100 watts RMS @ 8 (Hi) and 2 (Lo) ohms. 160 watts RMS @ 4 (Hi) and 1 (Lo) ohms.
Gain :	26 dB @ 8 ohms.
Input impedances :	RCA: >100 kohms, 5 Hz to 200 kHz. BNC: 50 ±1 ohm, 1 Hz to 1 MHz.
Version A :	XLR: >100 kohms bet. Pin 1 and 2 (hot leg and ground). 13 kohms bet. Pin 1 and 3 (cold leg and ground).
Version B :	XLR: 33 kohms bet. Pin 1 and 2. 33 kohms bet. Pin 1 and 3.
Output impedance :	< 0.33 ohms, from 20 Hz to 20 kHz (measured under 8 ohms).
Frequency response :	1 Hz to 1 MHz, +0, -6 dB (depends on measurement method). 10 Hz to 100 kHz, +0, -0.5 dB (depends on measurement method). 20 Hz to 50 kHz, ±0.5 dB (Version B , XLR inputs).
Rise time :	< 0.8 µs.
Slew rate :	> 88 V/µs, peak-peak.
DC voltage output drift :	Version A : < ± 590 mV max. Version B : < ± 10 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 :	> 105 dB (A) @ nominal power.
Consumption :	150 watts @ idle, 1000 watts @ maximum output power.
Size in mm :	440 x 335 x 170 (WxDxH). Total deep with handles: 415 mm.
Net weight :	30 kg.

darTZeel NHB-108 model one amplifiers are made to last forever by
Delétraz Engineering in Geneva, Switzerland.

Delétraz Engineering
5, chemin des Halliers
CH-1234 Vessy / Genève
Suisse

www.dartzeel.com

info@dartzeel.com