

User Guide V1.0

Evolution

Ultra Linear Class A Integrated Amplifier

- Double Single Ended – 2 x 20W

Thank you for choosing a Neoson product. Its realization has been the subject of all our know-how, both in terms of design and manufacturing. The electronic components and mechanical parts meet very high quality selection criteria. The function and finish of each product have been checked before delivery.

In order to obtain an optimal result, we invite you to read the advice contained in this document. Please read this manual carefully before installing and starting the appliance. The amplifier and its tubes are wrapped in a protective foam belt to prevent damage during transport.

Please remove the foam belt and protective adhesive strips before using your amplifier.

The device requires a break-in for optimal results:

- 150 to 200 hours for tubes
- 50 hours for internal interconnect cables
- 50 to 100 hours for bonding capacitors

SUMMARY

ACCESSOIRES FOURNIS	3
CARACTERISTIQUES GENERALES.....	3
SPECIFICATIONS	3
CONSIGNES DE SECURITE	4
LEXIQUE	5
RECOMMANDATIONS.....	5
RECYCLAGE DU PRODUIT.....	5
EMPLACEMENT ET PRECAUTIONS	5
SOURCE D'ALIMENTATION.....	5
GARANTIE.....	6
DESCRIPTION ET FONCTIONNALITES	6
Vue de la face avant	6
Vue de la face arrière.....	7
Vue isométrique	8
CONNECTIQUE ENCEINTES	8
CONNECTIQUE SOURCES AUDIO IN	9
PROCEDURE D'ALLUMAGE	10
PROCEDURE DE SELECTION DES VOIES AUDIO IN (R,G,B).....	10
PROCEDURE DE MISE EN VEILLE	10
REMARQUES GENERALES.....	10
MAINTENANCE	10
DEPANNAGE	11
RECOMMANDATIONS POUR LA LONGEVITE DES TUBES	12

IMPORTANT

Be sure to turn off your product before making connections. In the same way, it is preferable to turn off the power supplies of other devices that you want to connect to your amplifier.

The appliance should only be used with the type of electrical source indicated on the appliance. If you are unsure of the type of power available locally (power and amperage), please contact your dealer or the power company in your area.

SUPPLIED ACCESSORIES

- 1 Evolution Amplifier
- 1 Detachable power cord
- 2 IR remotes

GENERAL FEATURES

- Etage de pré amplification : 2 tubes 12AX7
- Power stage: 4 KT88 tubes in "double single-ended" assembly with automatic polarizations.
- Support of Soapstone Tubes
- Analog inputs: 3 line inputs.
- Load Impedance: $4/8 \Omega$.
- 1.5-minute ignition (heating) delay.
- Management of on, off and analog inputs by microcontroller.
- Hand-wound and oversized audio output transformers.
- ALPS motorized potentiometer
- Capacitors for the links between the 2 stages: Mundorf MCap Supreme Evo Silver Gold.
- High-quality resistors on audio lines.
- The power supply is composed of an oversized EI transformer and specially designed for Evolution
- Transformers (power and audio) mounted on anti-vibration dampers
- Power tubes mounted on anti-vibration dampers and hand-wired to silver welding
- Preamplification tubes mounted on anti-vibration dampers
- Rigid chassis design with an epoxy paint finish.
- KT88 metal and removable wire cages for the protection of the tubes.
- Brushed stainless steel sheets.
- Solid oak façade.

SPECIFICATIONS

Output Power: 20W + 20W RMS under 8Ω	Operating conditions: • Temperature: 0°C to 40°C • Humidity: 20% to 80%
Frequency response (± 1 dB): 15Hz- 20KHz	Storage conditions: • Temperature: -20°C to 70°C • Humidity: 20% to 90%
Input Sensitivity: 0.9Vrms	THD < 1% à 20Hz – 20kHz à 1 Watt
Dimensions (W x H x D): 465 x 410 x 190mm	Output impedances: 4Ω , 8Ω
Tubes • Pré amplification : 2x 12AX7 • Power: 2x2 KT88	Net weight: 24 kg AC power supply: • Europe 230Vac – 50hz • USA 115Vac – 60hz Power consumption: 260 W

SAFETY INSTRUCTIONS

We invite you to read these instructions carefully relating to the proper use of your product. They will ensure the proper functioning of the latter, in complete safety.

- Check that the mesh housings of the KT88 tubes are properly secured after unpacking the unit and before it is connected to the mains and turned on.
- Never use this appliance in a wet area or near liquid. Do not expose the amplifier to rain or moisture.
- Clean only with a dry cloth. As a precaution, it is best to unplug the appliance before handling and to ensure that the heat is dissipated.
- Never obstruct the ventilation systems of the appliance. Make sure to install the appliance in a sufficiently ventilated area.
- Do not install the appliance near a heat source.
- The amplifier should be installed stably, make sure that all four legs are placed at the same level.
- Please keep the amplifier 30 cm away from the surrounding walls.
- Take the utmost care of the power cord and electrical connection sockets. In particular, do not walk or press the power cord, especially at the sockets, power supply installations and the power supply output.
- Be sure to use a power wall outlet that is suitable for the AC outlet of the appliance. Especially if the device is equipped with a grounding plug, it is necessary to use it.
- Unplug the appliance in case of a thunderstorm or if you are not using it for a long time.
- Do not move the appliance if it has just been used or is still hot.
- It is forbidden to touch the device while it is hot because it presents a risk of burns. Surfaces may exceed 60°C during operation.
- It is forbidden to turn on the device when it is open.
- Do not open the cover of the device, you may be exposed to very high voltages.
- It is forbidden to remove the protective grilles of the KT88 when it is in operation, you will expose yourself to the risk of serious burns.
- It is strongly recommended not to remove the protective grilles of the KT88 tubes as they would be exposed to the risk of damage in the event of an object falling.
- Do not use the appliance if the tubes are mechanically damaged (damaged glass casing).
- Do not touch the electron tubes, even cold ones.
- Use only Neoson's recommended spare parts and accessories.
- We are not responsible for any damage or deterioration caused by the misuse of the device. No internal part is maintainable by the user. Please refer to a qualified technician for maintenance.

LEXICON



This symbol indicates to the user the presence of an uninsulated "dangerous electrical voltage" that may pose a risk of electric shock to the user.



This symbol informs the user that the documentation that comes with the device contains important instructions for the maintenance and proper use of the product.



This symbol indicates that the Evolution unit has hot surfaces above 60°C during operation with a risk of burning.

RECOMMENDATIONS

The incoming voltage level is notified on the rear side of the device and must be within a range of +/- 5% of the nominal value indicated. If you are unsure of the type of power supply available in your area, please contact your dealer or the power company in your area. A voltage level that is too low or too high can cause the amplifier to deteriorate or shorten its lifespan.



It is strongly recommended to connect loudspeakers respecting the polarities (+ / -) and before powering up the device.



Never disconnect loudspeakers before the unit is put to sleep. This could damage it.

PRODUCT RECYCLING

At the end of its service life, this product should not be disposed of with ordinary household waste, but returned to a collection point for the recycling of electrical and electronic components.

Materials can be reused in accordance with their marking. Through the reuse and recycling of raw materials or any other form of recycling, you make an important contribution to environmental protection. Your municipality can tell you where the nearest collection point is.

LOCATION AND PRECAUTIONS

- Avoid placing the appliance directly in front of the sun's rays or near a heat source. No fire source should be placed on the appliance.
- Also avoid all sources that could cause vibrations, dust, coolness or humidity. The recommended ambient temperature range is 5 to 35°C. The device must be installed on a stable and horizontal surface.
- Do not place the unit on an unstable surface or on a shelf. The unit could indeed fall and this could injure a child or an adult, not to mention the damage caused to the product.
- Keep the unit out of the reach of children, as it has hot surfaces during operation that can exceed 60°C.
- Do not position other equipment on top of the unit. Due to the distributed magnetic fields, no turntable or CRT TV should be positioned near the device to avoid possible interference.

POWER SOURCE

The unit should only be used with the type of electrical source indicated on the appliance. If you are unsure of the type of power available locally (power and amperage), please contact your dealer or the power company in your area. Turn off the device if you do not intend to use this device for a long time. In the event of a prolonged absence from your home, it is recommended to unplug it from the electrical outlet. Make sure that each power cable is inserted correctly.

To avoid hum or background noise, do not mix the various other antenna cables with the power cord or loudspeaker cables.

GUARANTEE

Your Neoson Evolution product is covered by a 2-year warranty excluding tubes and a 1-year warranty on tubes.

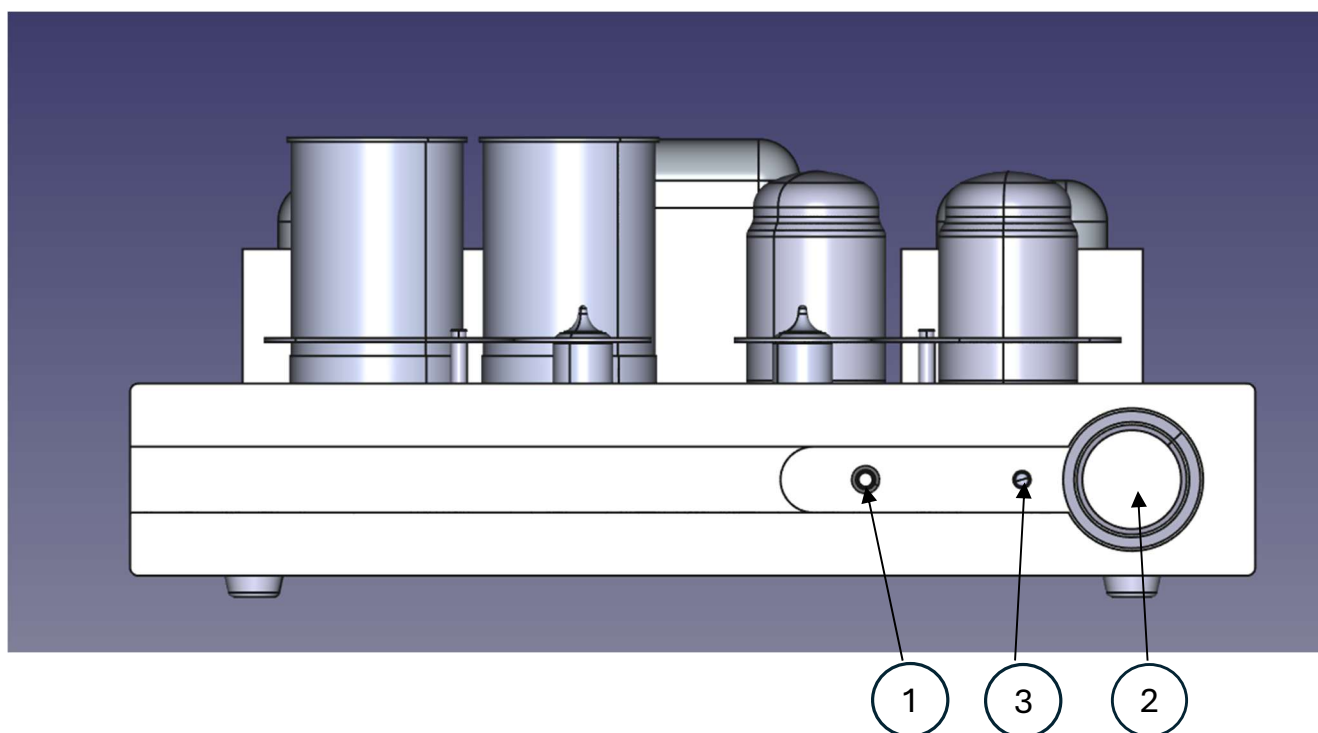
The product warranty is linked to the exclusive use of tubes supplied by Neoson and in accordance with the technical specifications of the assembly.

The warranties run from the date of purchase. A copy of the invoice issued by your reseller will be requested before any technical intervention on our part. These warranties are void in the event of breakage of the tamper-evident label located on the back of the chassis.

DESCRIPTION AND FEATURES

The appliance should only be used with the type of electrical source indicated on the label on the back of the appliance. The mains voltage should be 230Vac for Europe and 115Vac for the USA with a tolerance of $\pm 5\%$. A voltage level that is too low or too high can cause the amplifier to deteriorate or shorten its lifespan.

View from the front

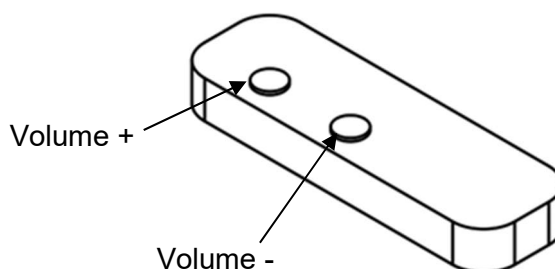


- ① The push button is multifunctional. 3 functions are assigned to it:
- Turning on the device
 - The selection of IN R, G, B audio channels (Red, Green, Blue)
 - Putting the device to sleep

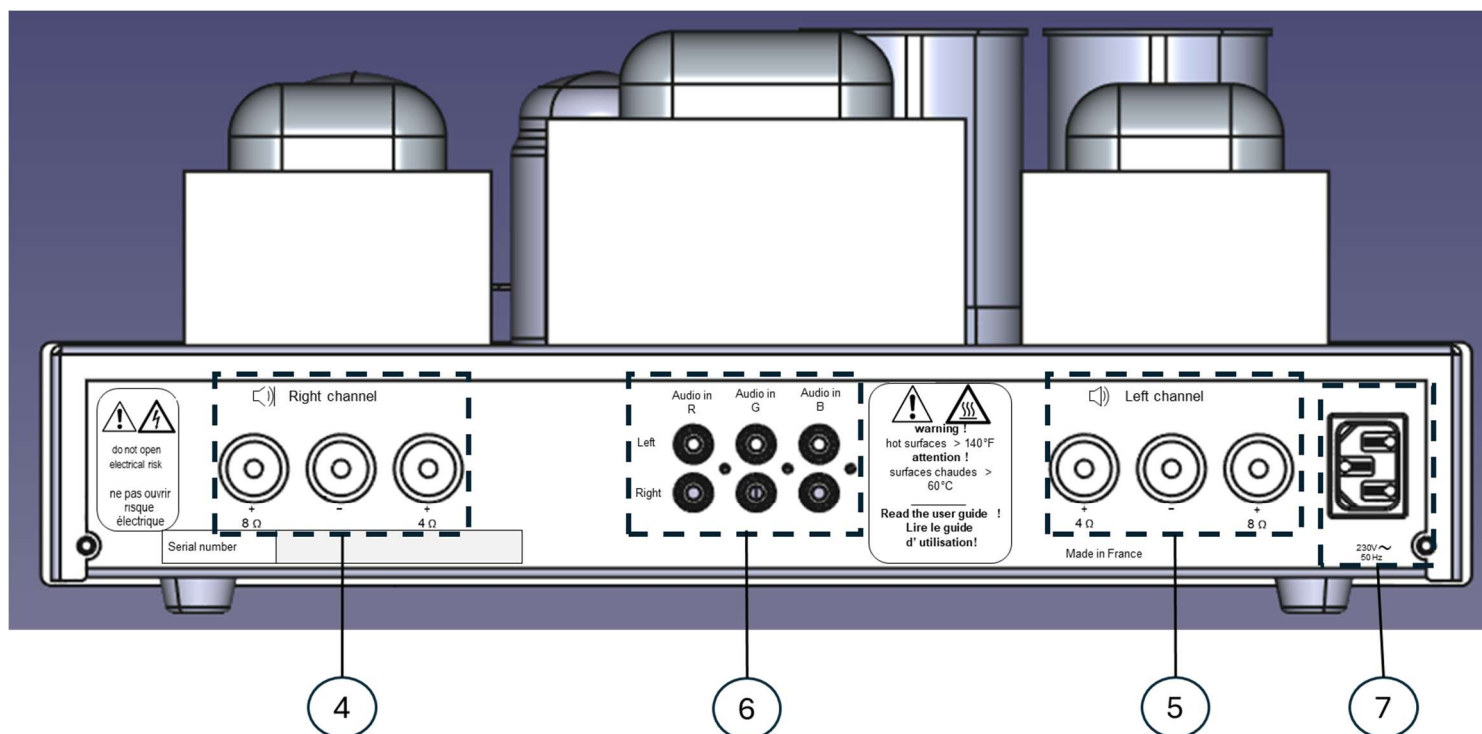
- ② Volume Knob:

- Adjust the rotary, motorized potentiometer to the desired sound level using the supplied remote control or manually

- ③ Infrared receiver for remote control*



View of the back side



4 Right channel

Connect the RIGHT speaker to the terminals marked "+ 8Ω" and "-" for an impedance $\geq$ to 4Ω, making sure that "+ 8Ω" is connected to the "+" terminal of the speaker and "-" is connected to the "-" terminal of that same speaker.

 For an impedance $\leq$ 4Ω, use the "+ 4Ω" terminal

5 Left channel

Connect the LEFT speaker to the terminals marked "+ 8Ω" and "-" for an impedance $\geq$ to 4Ω, making sure that "+ 8Ω" is connected to the "+" terminal of the speaker and "-" is connected to the "-" terminal of that same speaker.

 For an impedance $\leq$ 4Ω, use the "+ 4Ω" terminal

6 3 x Audio in

Line inputs (stereo RCA) are meant to connect "line-level" sources to your amplifier. These inputs are designed to receive so-called "analog" signals as opposed to "digital". The cables compatible with these jacks are of the "RCA" type, they are traditionally marked by a color code "RED" for the RIGHT channel and "WHITE" for the LEFT channel.

- The activation of the Audio In R (Red) input is identifiable by the red light that radiates from inside the chassis.
- The activation of the Audio In G (Green) input is identifiable by the green light that radiates from inside the chassis.
- The activation of the Audio In B (Blue) input is identifiable by the blue light that radiates from inside the chassis.

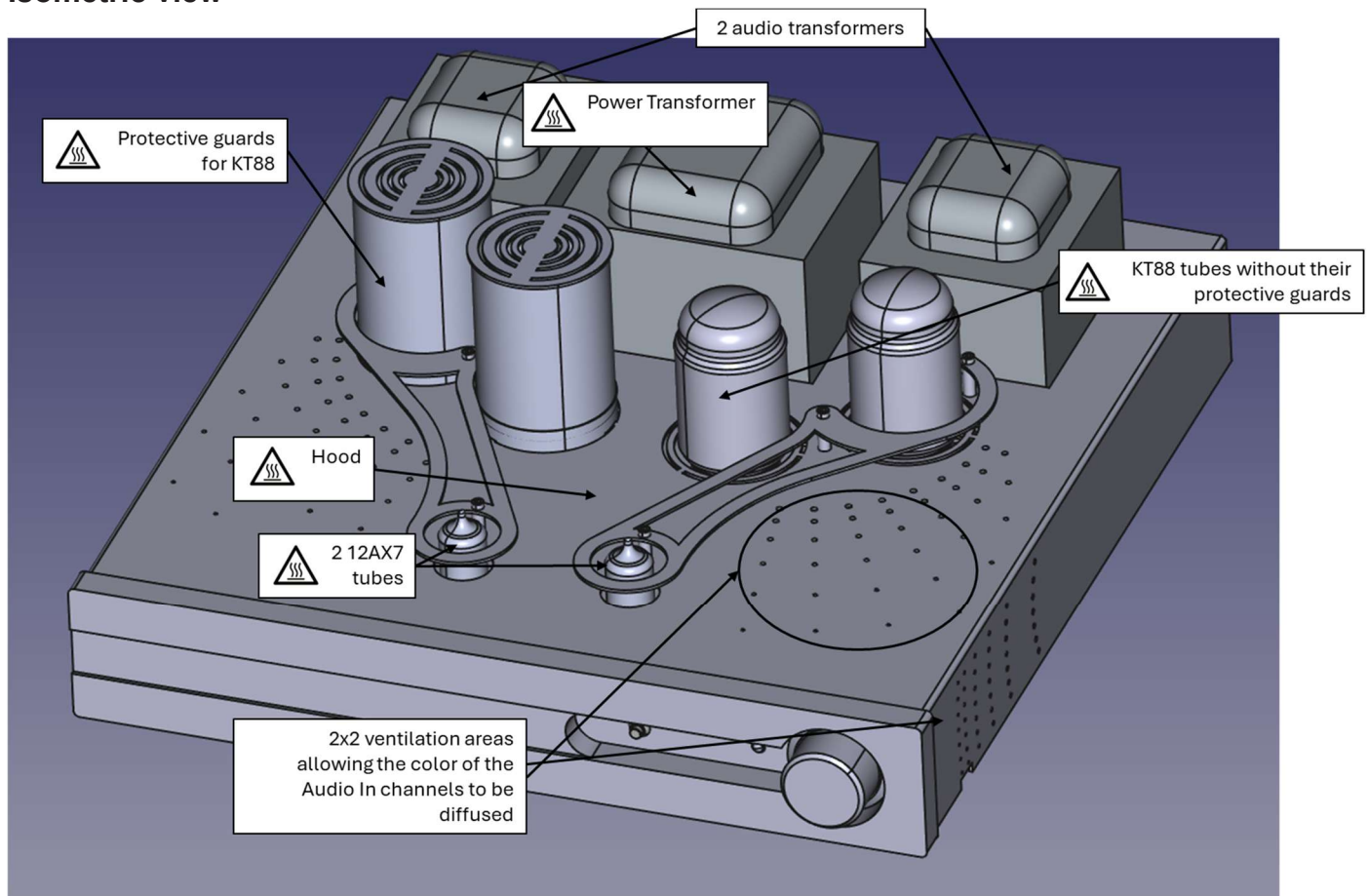
The Audio In input is selected by pressing the push button on the front panel.

7 Power socket

Observe the value of the mains voltage indicated on the device (back side)

Once all connections to the amplifier are complete, plug the power cable into a power outlet. The white night light on the front push button is on. Then proceed with the sequence of turning on the device.

Isometric view



SPEAKER CONNECTORS

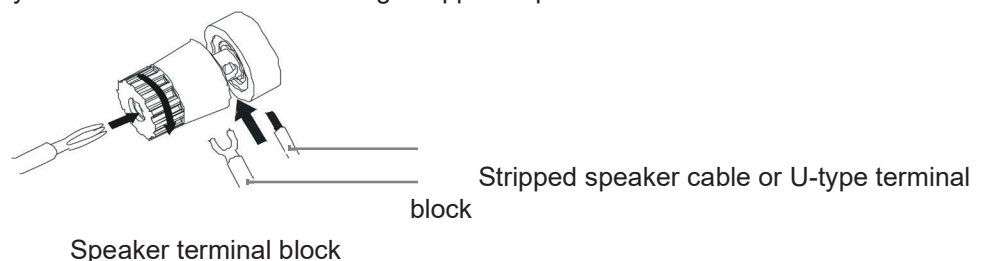
IMPORTANT: Make sure that the appliance is not plugged into the mains before making connections. It is also recommended that you turn off or unplug all other associated devices while you are making the product connections.

Connect your speakers to the amplifier

1. Unscrew the terminal block.
2. Insert the speaker cable (refer to the diagram below).
3. Revisser le bornier.
4. Repeat the operation for the other 3 terminal blocks.

Make sure that the cables are connected to the speakers first, before connecting the other end of the cable to the amplifier.

Make sure not to reverse the polarity of the cables to avoid listening in opposite phases.



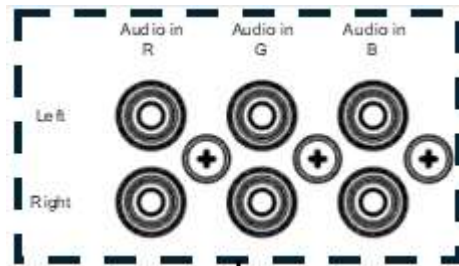
Make sure that no uninsulated strands can short-circuit the speaker outputs. Make sure that the speaker terminals are tight enough to ensure a good electrical connection. If the screw terminals are not tight enough, the sound quality may be affected.

Use only dedicated loudspeaker cables (a cross-section of 1.5 mm² or more is recommended, especially if the cable length is greater than 3m).

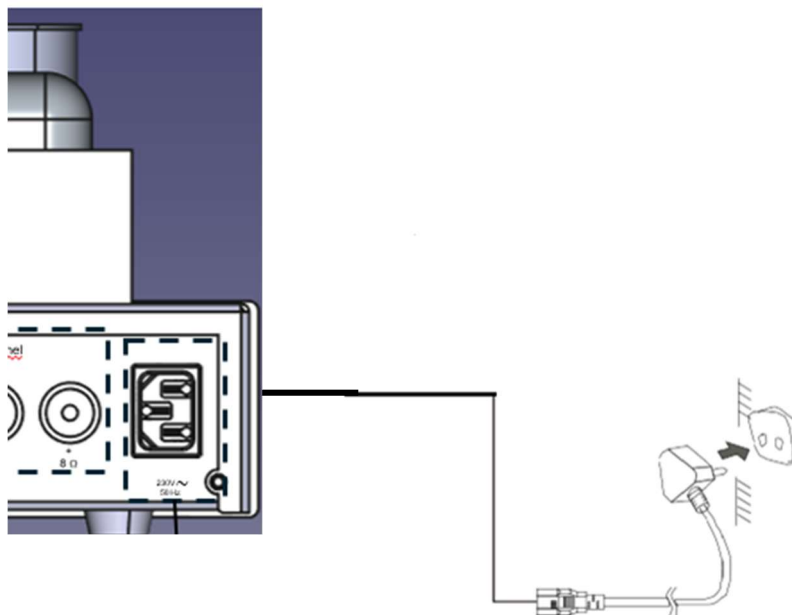
CONNECTORS AUDIO SOURCES IN

Connect your sources to the amplifier

Use an RCA stereo audio cable (red and white Cinch plugs) to connect your sources.



1. Refer to the user manuals of the sources you want to connect to the amplifier.
2. Wait until all sources are connected before plugging in the power cable from the amplifier.
3. "Right" refers to the Right channel, "Left" refers to the Left channel of the amplifier.
4. To avoid interfering with the signal, make sure that the cables are properly connected and that they do not mix with AC cables.



Connect your amplifier to the power outlet compatible with the mains voltage indicated in point 7 of the "rear side" view

Once all connections to the amplifier are complete, plug the power cable into a power outlet

IMPORTANT BEFORE TURNING ON THE AMPLIFIER

Make sure that all connections are valid, and that your AC power supply is stable. First connect the speaker cables, then the cables from your sources and finally plug the power cable into the AC outlet.

IGNITION PROCEDURE

1. When the white LED on the push button is solid (mains presence), it indicates that the device is in standby.
2. Press and hold the push button for 2 to 3 seconds.
3. The white LED on the push button flashes, indicating that the heating process of the device is engaged for a period of 1.5 minutes. The amplifier will be functional at the end of the heating time.
4. When the white LED on the push button turns off after 1.5 minutes, the last IN (R, G, B) audio channel used is activated. Its associated color appears through the amplifier's chassis.

PROCEDURE DE SELECTION DES VOIES AUDIO IN (R,G,B)

Briefly press the push button for less than 1 second to change the IN audio channel. Each press selects a different lane and its associated color radiating from inside the chassis.

STANDBY PROCEDURE

A press of the push button for more than 2 seconds initiates the standby of the device. The white LED turns back on and becomes solid.

☝ The solid white LED indicates a voltage presence in the device. To completely extinguish it, it is necessary to unplug the mains socket.

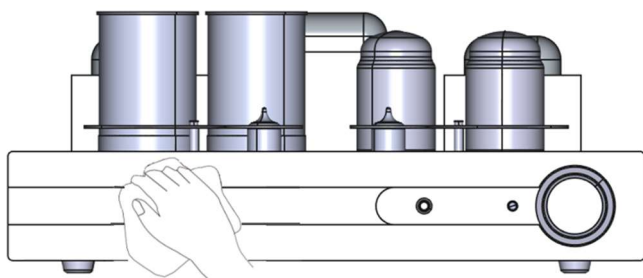
GENERAL REMARKS

1. It is normal for the amplifier to develop a lot of heat during use.
2. Please unplug the power cable if you are not using the amplifier for a long time.
3. To avoid damaging the amplifier, please check that it is turned off before disconnecting the cables attached to the speakers.
4. In order to protect the tubes, please wait at least 5 minutes before turning the amplifier back on after it has been put to sleep.

ATTENTION

Make sure that the corresponding voltages are compatible. We are not responsible for any damage caused by misuse related to tensions.

MAINTENANCE



ATTENTION

Make sure the appliance is unplugged from the power outlet, and that it is not hot before cleaning. Clean the amplifier with a soft microfiber cloth, do not dampen it or use any chemicals.

TROUBLESHOOTING

Please follow the instructions in this manual in order to maintain proper operation of the amplifier in accordance with the safety instructions.

If any problems arise, before calling your dealer to take care of the device under warranty, please first check the table below to see if you can find the exact cause of the problem and if any of the solutions outlined below can fix it. Sometimes the problems can come from the equipment around the device, such as cables. So don't hesitate to check the connections. If the problem still persists, please contact your dealer.

Problem	Cause	Solution
The white LED on the push button is off and no other light indication is present from inside the chassis (red, green, blue)	The power cable is not connected.	Check that the power cable is properly connected and/or the mains presence to the socket.
	The main fuse is damaged.	Contactez votre revendeur local.
	Problème avec les composants internes de l'appareil.	Contactez votre revendeur local.
The white LED on the push button is off and there is a red or green or blue light indication from inside the chassis and no beep	The volume is at zero.	Turn up the volume
	No source input.	Check that the source is working.
		Check the connectors of your sources on the back of the device and/or position the source selector on the correct input.
The sound is distorted.	High level of input signals.	Turn the volume down to an appropriate level
		Replace the signal input cable.
The listening is noisy.	Poor contact at the cables.	Change the cable.
	Problems with components or circuitry.	Please contact your local dealer.
The stereo image is de poor quality.	The cable that connects the source or speaker cables are poorly connected.	Follow the instructions for connexion des different cables in this manual.

The Evolution integrated amplifier has been designed and manufactured with selected parts or manufactured by us in order to obtain an optimal final result. We are not responsible for any potential problems or deterioration caused to the amplifier in the event of a replacement of one of these original parts.

RECOMMENDATIONS FOR TUBE LONGEVITY

Contrary to popular belief, the lifespan of the tubes of a hi-fi amplifier is very long. This can easily reach more than 9,000 hours for a pre-amplifier tube and 3,000 hours for a power tube. However, this lifespan can be impacted by three different factors: the design quality of the tube, the associated amplifier and the conditions in which the tube was used. So here's how to properly use your tube amplifier to maximize tube life.

Preheating

The first precaution to take to optimize the life of your amplifier's tubes is to always let the tubes heat up before sending the beep. Indeed, as we have previously seen, heating the tube will allow the cathode to release a cloud of electrons. It is from this that the electrons are drawn for the flow rate established between the plate and the tube grid. Therefore, if the electron cloud has not had enough time to form, the electrons needed to amplify the signal are directly torn from the metal that makes up the cathode. Worse still, when the current required is high (high sound volume), an electric arc can be formed by gaseous ions that are then not repelled by the electron cloud. It is therefore essential to always let the tubes heat up for at least 10 to 15 minutes so that they reach an optimal operating temperature before sending the sound signal. These few minutes of waiting then greatly extend the life of the tubes.

Powering up

Apart from the warm-up time, you can also greatly extend the life of the lamps by avoiding turning the amplifier on and off at too regular intervals. Each voltage is generated by an electric and thermal shock to the tubes. It is therefore necessary to leave the amp on (without an incoming signal) for a minimum of one to two hours before turning it off. In addition, if you have to interrupt your listening for less or slightly more than an hour, it is also less harmful to the tubes to leave the amp on than to turn it off. On the other hand, beyond 2 hours without listening, it is preferable to turn off the amp to limit wear and tear. A tube amp cannot therefore be continuously left on as some audiophiles do with solid-state electronics.

Shock and vibration

When the tubes of an amplifier are hot, they are particularly fragile and sensitive to shock and vibration. Moving, handling or even adding or removing a connector on a hi-fi tube amplifier must therefore always be done when the tubes are at room temperature. If the tubes are hot, a shock can cause some parts of the tube to break and greatly reduce its life. Shocks that are too regular when hot are indeed a very common source of premature wear of a tube. The tubes of amplifiers are also very sensitive to vibrations transmitted from the ground or generated by a turntable or a subwoofer placed nearby. When the latter are of low amplitude, this will mainly have an impact on the sound reproduction by being amplified and retransmitted in the speakers. On the other hand, when they are too strong and too regular, the life of the tubes can be greatly reduced. It is therefore recommended to place a tube amp on a perfectly stable surface that limits the transmission of various vibrations. Ideally, a tube amplifier should be placed on or in a hi-fi cabinet with an openwork to ensure perfect thermal dispersion and whose structure is designed to absorb vibrations. Finally, it is preferable not to place this piece of furniture near a window or to leave it closed in winter during the entire listening session. Indeed, if the temperature difference is too great, a thermal shock may occur and damage the tubes.

When should tubes be replaced?

Despite all the precautions, there is bound to come a time when it is necessary to change the tubes of the amplifier. If you've applied all of the tips previously mentioned, you'll need to make this change after about 3,000 hours for the power tubes and 9,000 hours for the pre-amp models. This can of course change depending on your amp and the quality of the tubes. When these are at the end of their life, they can generate various malfunctions, the main ones being the following:

- Crackling noises
- Whistles
- Loss of momentum
- Lower volume
- Absence of certain frequencies
- Draft sound
- Accentuated microphone effects

When one of these malfunctions occurs, it is then time to replace the tube(s) concerned. The power and pre-amp tubes are always changed in pairs. Various signs can help identify the faulty lamp. In particular, we can observe weak electrical discharges in the power tubes, a purple color in the tube when it is energized or wear of the getter. It should normally be completely black or shiny. If you have a microphone problem, it is possible to identify the tube responsible by gently tapping on each tube. If the noise is reflected in the speakers, it means that the tube needs to be changed.