

## Manual

### Preface

We congratulate you on the purchase of our «EDISON» phono amplifier.

Brinkmann's relentless dedication to *Quality* is your assurance that you will receive many years of musical enjoyment from this unit..

Please take a short time to read the information in this manual. We want you to be as familiar as possible with all the features and functions of your new «EDISON».

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### Unpacking

The Phono amplifier is delivered in a double-carton shipping box. This packaging will protect the phono amplifier and the power supply and will prevent shipping damage. Please keep the packaging and the including protective packaging inlay material to have maximum protection for your «EDISON» if it ever needs to be shipped!

Please find in the top layer of the protective packaging inlay :

- > this manual
- > the Edison phono amplifier
- > the remote control
- > the power supply including the connection cable with a 6-pole plug

In the bottom layer :

- > the granite base for the phono amplifier
- > a bag with 2 adapter plugs from XLR to RCA
- > a power cord

## Description

The «EDISON» Phono amplifier is designed to amplify and equalize the signals from the cartridges of analog record turntables.

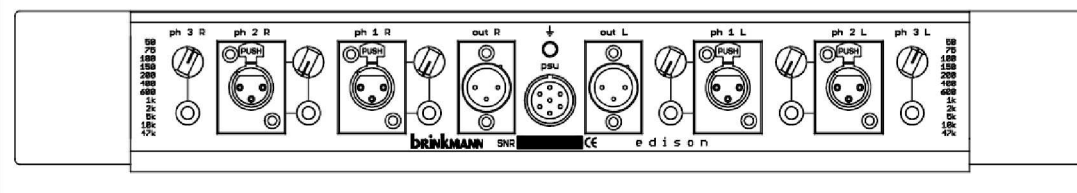
Two Telefunken PCF803 vacuum tubes are used per channel.

The PCF803 was developed in the 60s and was used for colour television. The company “Telefunken” in Berlin was famous for the highest quality and durability of their products and for using the newest technologies for their production.

Each tube contains two systems, a pentode and a triode.

One of the PCF803 is used for the gain stage, the other gives a phase inverter and output driver.

As tubes produce more noise than semiconductors, we added a bipolar transistor stage to the input circuitry which also is used for the gain adjustment.



The rear view of the phono amplifier shows three RCA inputs per channel. Each of the inputs is equipped with a rotary switch for adjusting the input resistance. Two of the three inputs are also equipped with XLR sockets.

The RCA sockets and the pins 2 and 3 of the XLR sockets are connected together, while the inner pin of the RCA is connected to pin 2 of the XLR socket.

The XLR output sockets, the socket for the power cord and the socket for the ground connection are located at the centre of the back panel.

The ground connection can be used with all the ground cords of various tonearms / turntables and then be easily plugged in at the back panel.

The front panel shows on the right side the on-off and mute buttons, the input selector and in the middle the display, on the right side the knob for adjusting the gain and two further buttons, one of these switches a transformer in the input signal path, the other is for switching both channels to mono.

Your Edison can be ordered with a phase inverter function, instead of the mono function.

## Power supply

The power supply has a closed metal case from anodized aluminum; it is connected to the ground connection of the power plug. The power supply should only be connected to the mains with a three-core power cord.

The power supply has a transformer that transforms the mains voltage into different alternating voltages.

One of these alternating voltages is rectified and stabilized at 22 VDC.

The output is short circuit proof for a current of 1A and will be shut down by a PTC during short circuit. The other alternating voltages are used in the preamplifier. It is important to take care that the connection cable with the 6-pole connector cannot be damaged or snapped.

## Set up and Operation

### Set up of the phono amplifier

The weight of the phono amplifier «EDISON» including the granite base is 24 kilogram. Therefore it is important to have a support of approx. 40 x 45 cm that can easily carry this weight. Please make sure that the phono amplifier is not placed directly next to power supplies or other amplifiers. The power supply of the phono amplifier should be placed as far away from the «EDISON» as possible.

The base of the «EDISON» has full contact to the surface of the granite base, this prevents vibration seeping into in the phono amplifier.

It is possible to use optional feet from other manufacturers between the granite base and the support of the phono amplifier. It is important to take care that optional feet are specified to carry the full weight of the «EDISON» – approx. 24 kg –. Another option could be the use of thin sheets (for example leather or rubber) in patches or for the full surface between the granite base and the support.

There should be 20cm of free space above the phono amplifier to allow the flawless function of the remote control. The IR sensor is located right besides the gain control knob under the top glass plate.

In case there is not enough free space above the phono amplifier, it is possible to place a small upright sheet (about the size of a business card) behind the sensor of the remote control to allow for the reflection of the IR impulse to the sensor.

The power supply should also be placed on a resonance free support, for example a small granite base.

### Connecting the cables

The phono inputs are located at the left and right side of the rear panel, the XLR outputs are located at the middle of the rear panel. When looked at from the front, the connectors at back are assigned to the respective channel. There are three phono inputs, input 1 is directly next to the XLR outputs and input 3 is at the outer side of the rear panel.

The ground connection and the 6-pole connector for the cable of the power supply are located at the middle of the rear panel. The plug of the ground connection can be removed to allow a convenient connection of several ground cords.

The phono inputs have RCA sockets; two inputs (input 1 and input 2) have additional XLR inputs. The RCA sockets and the pins 2 and 3 of the XLR sockets are connected together, while the inner pin of the RCA is connected to pin 2 of the XLR socket.

It is possible to use the RCA connector for further loads like capacitors or additional resistors while the XLR sockets are used for the turntable.

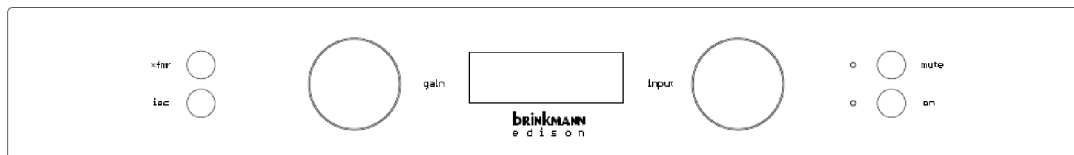
Please use the following sequence when connecting the phono amplifier:

1. Connect the signal inputs (RCA or XLR) of the phono amplifier with the turntables or tonearms,
2. Connect the ground cords next, make sure that the 4mm plug of the ground connection is plugged into the connector at the rear panel of the phono amplifier,
3. Connect the 6-pole plug of the power supply cable to the 6-pole connector in the middle of the rear panel and tighten the cap nut,
4. Connect the XLR outputs to the respective inputs of the preamplifier (in case of asymmetrical outputs the XLR-RCA adapters can be used ),

## 5. Connect the power supply to the mains (do this last!)

The «Edison» phono amplifier usually doesn't need special power conditioning because there is already a power filter integrated into the power supply.

A good, direct connection to the mains without disturbance is beneficial for the «Edison», it is important not to connect the phono amplifier to the same AC outlet as for example the power amplifiers, which have irregular power consumption.



## Operation

Pushing the “on-off” switch engages the display and the LED at the „mute“ switch. The „mute“ switch is disabled as long as the display shows „Edison“. During this time the tubes are heating up.

About two minutes later the display shows the previously selected input, the gain for this input is calibrated in dB, the functions “xfmr” and “mono” if selected, optionally the phase 0° or 180°, whatever has been selected for this input.

By switching to another input all the preselected functions for this next input are shown.

All these functions are stored in a micro processor when another input is selected or the unit is switched off. The individual configurations are still stored when the «Edison» is disconnected from the mains and is moved to another place.

„Mute“ and the input selector can also be switched from the remote control.

## Optimizing the sound

Allow us to share some advice with you as to how to extract the «Edison»'s best sound performance:

The back panel shows the switches for adjusting the resistive load on the inputs. The values are 47k, 10k, 5k, 2k, 1k, 600ohms, 400ohms, 200ohms, 150 ohms 100ohms 75ohms and 50ohms.

These resistive loads will assure that peaks coming from the cartridges are well damped or even a “soft roll off” is preferred.

The adjustments allow for individually loading all cartridges and even for personally preferred sound aspects.

The 47kohms allow for connecting MM cartridges to the «Edison».

Seen from the back the most left position starts with 47kohms, the center position is 400ohms.

The load values will change when the transformer „xfmr“ is switched into the signal path :

47kohm > 10kohm, 10kohm > 5k5ohm, 5kohm > 3k5ohm, 2kohm > 1k7ohm, 1k > 900ohm, the lower values are not affected in a way that needs attention.

As the 47kohm are gone with the transformer in the signal path, no MM cartridges can be used anymore.

On the other hand the use of the transformer gives the inputs a true balanced state, what means that both poles (pin 2 and 3 of the XLR socket) are „hot“, carry signal.

As the RCA sockets carry signal on both inner and outer pole in this state, there may be hum noises, so we recommend taking the XLR sockets for balanced use.

Without the use of the transformers the outer pole of the RCA sockets is bound to ground. The XLR sockets can be used in full performance though. Connecting together both ground pins (pin 1) of the XLR cables on the side of the turntable may cause hum problems, so please avoid this.

## Maintenance

Two original Telefunken tubes of the type PCF803 are used per channel.

The PCF803 was developed in the 60s and was used for colour television. The company "Telefunken" in Berlin was known for highest quality and durability of their products and for using the newest technologies for their production.

Each tube contains two systems, a pentode and a triode.

One of the PCF803 is used for the gain stage; the other gives a phase inverter and output driver.

The lifetime of a PCF803 is designed for a minimum of ten years by steady use in a colour TV. As the «Edison» does not stress the tubes in such a way, the lifetime will be much longer.

We do not know exactly how long the tubes will last, as we do not yet have data for that, but we believe they will serve approx. 15...25 years.

On the other hand we stock many thousands of this type, so there will be enough new tubes in the future to replace the old ones.

Do not use tubes from other sources, do only replace with original Telefunken PCF803, preferably a matched set from our company.

## Safety

This phono preamplifier had been designed and tested according to the guidelines of EN55013 and EN55020 and it meets the safety requirements of EN60065.

The phono preamplifier «Edison» is only to be used in dry rooms with an average temperature and is only allowed for AC mains 50...60Hz with the voltage given on the power supply casing.

The power supply is only to be connected to a grounded wall socket.

Please connect or disconnect the power supply only when the «Edison» is not connected to the mains.

Please disconnect the «Edison» always from the mains when the amplifier is not used for a longer period of time (during holidays etc.). Never leave the power supply unattended while it is connected to the mains.

Always keep the «Edison» away from wet, heat and open fire! Never expose it to the blazing sun! Never place receptacles with fluids on the preamplifier or its power supply.

Take care of enough room around the power supply (10 cm on each side, 30 cm above); the unit shall not be covered! There is no over temperature sensor inside the power supply.

## Cleaning

The power supply and the preamplifier «Edison» are only to be cleaned with a dry brush and a dry cloth (microfiber). Please disconnect from the mains before cleaning.

A cleaning with wet clothes or brushes is not allowed! Liquids will cause a short circuit inside the «Edison».

The glass plate is not allowed to be removed whilst the «Edison» is connected to the mains.

Dangerously high voltages inside, risk of electrical shock!

## Warranty

The warranty is only valid when concerning faults of the production or of components used in the phono amplifier. The warranty doesn't cover the shipping to our company for repair purpose and back.

Repairs and changes to the phono amplifier should only be done by **BRINKMANN** Audio GmbH or by specially authorized companies.

The warranty expires after unauthorized changes in the phono amplifier. The warranty also expires after improper use and wrong connection of the phono amplifier.

## Technical Data

inputs :	3 (XLR 2)
distortion / intermodulation :	0,05 / 0,1 %
signal to noise :	69 dbA
bandwidth linear (RIAA):	DC... 250 kHz
max. output signal :	± 8 V
output resistance :	+/-1 kOhm
input resistance :	max 47 kOhm
balanced input resistance max :	± 5 kOhm
output phase : (optional)	0° / 180°
span of the gain control :	43,5... 67dB
power consumption :	35 W
power consumption in stand-by :	< 2 W
size of case «Edison»:	B x H x T 420 x 65 x 310 mm
size of power supply :	dto 120 x 80 x 160 mm
weight incl. power supply :	ca. 12 kg
size granite base :	420 x 30 x 310 mm
weight granite base :	ca. 12 kg

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