

Decade

Phonoverstärker

Phono Stage/Amplificateur Phono
Amplificador Phono/Preamplificatore Phono



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Although you may have had some experience with phono stages from other manufacturers, please read the manual carefully before putting the Decade to service and keep it close to the device for future reference!

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Introduction

Dear Customer,

thank you very much for your trust you've shown us by purchasing the Decade. This phono preamplifier from Lehmannaudio is a meticulously crafted device for the connection of common turntables equipped with MM or MC systems.

All our products are developed and manufactured exclusively in Germany. Since the company foundation in 1988 Lehmannaudio has been representative for first-class devices, which are always committed to the original sound and built with love for details. Owing to finest components and a sophisticated circuit design we can guarantee a superb standard of listening enjoyment. The Decade is superior to industrial mass products in every respect. Even when combined with exotic MC systems it will easily maintain the balance between passionate temperament and precise contouring.

More information can be found in this user manual and also on our website at www.lehmannaudio.com.

Now you can get the very best from your favourite records and experience analogue music enjoyment full of passion again.

Your Norbert Lehmann
CEO

Important safety notes

In this manual we use hierarchic 'red flags'. Warning notes are printed in bold and also marked and highlighted by a symbol (warning sign) in the text.

The warning notes are classified hierarchically according to the following scheme:

1. **WARNING!**
2. **CAUTION!**
3. **NOTE!**



This symbol points to important operation and maintenance notes in the accompanying documentation. Please refer to the manual.



This symbol warns of the presence of a non-insulated hazardous voltage inside the device and the risk of a potentially life-threatening electric shock.



This symbol refers to additional information in the manual. Here you will find supplementary information, recommendations and tips regarding the use of the product.



CAUTION!

Read all safety and operation notes before putting the device to service.

Storage

Keep the safety and operation notes for future reference.

Warning notes

Observe all warning notes printed on the device or contained in the manual.

Operation notes

Follow all operation notes and advice for users.

Heat

The device must not be placed near heat sources like radiators, heat accumulators, stoves or other heat-generating appliances (e.g. amplifiers).

Ventilation

Do not cover any ventilation slots on the device and when mounting it in a rack, make sure that there is sufficient air circulation. Always heed the appropriate manufacturer notes when installing the unit.

Water and moisture

Do not expose the unit to rain nor use it in close proximity to water (bath tub, swimming pool etc.) or in high air humidity (condensation).

Ingress of liquids

Make sure that no dripping or spray water can enter into the interior of the unit. Don't place objects filled with liquids (such as vases or drinking vessels) on the device.

Power cable

Use only power cables which are officially approved for your country. The power cable must be designed for the product and its corresponding power consumption (voltage/current) as stated on the device label and in the user manual.



CAUTION!

Use the device only on a power outlet with protective conductor connection and correct polarity. Do not disable the function of the protective conductor connection on the included power cord. If the plug of the included cable won't fit into your mains outlet, contact your local electrician.

Mains connection

Protect the power cord from footsteps and crushing, notably on the device plug, the extension cord and the cable outlet on the device.

Power supply

Only use the included power supply.

Thunderstorm

Disconnect the unit from mains to protect it from lightning strokes and excess voltage.

Electric overload

Do not exceed the maximum load current for power outlets, extension cables or integrated multi sockets. Overload may cause a fire.

Fire sources

Do not put any open fire sources (e.g. burning candles) on the device.

Accessories

Use only accessories/extensions with the device which have been approved by the manufacturer for this purpose.

Mounting

Use the device only in a safe, level position on a table, dolly or a special designed stand. Don't drop the unit, since this may cause personal injuries and damages to the device. When installing the device, make sure that the mains plug will remain easily accessible.

Cleaning

Use only a dry cloth for cleaning the device.

Non-use

Pull the mains plug if the unit is not used over prolonged periods of time.

Service

All service and repair works must be carried out by an authorised service technician. Service is required if the device has been damaged in any way, for instance if

- the power cord or mains plug have been damaged,
- liquid or some object has got into the unit,
- the device has been exposed to rain or moisture
- or if it does not function normally or after it has been dropped.

Spare parts

Only such spare parts must be used exclusively for repair works which have been specified and approved by the manufacturer.

Installation

This section tells you about the connections, control elements and application possibilities of your Lehmannaudio Decade phono amplifier.

1 | Unpacking

After unpacking the Decade check it for possible transport damages. If you notice visible damages, you must by no means connect the device to mains. In this case consult your dealer immediately.

Delivery includes the following components:

- Decade device
- PWX II power supply
- XLR connection cable between power supply and audio device
- User manual
- Allen key (2 mm)
- Certificate of warranty



Note

We recommend keeping the entire packaging for later shipment. That way you will avoid transport damages. Use by no means 'foam chips' or similar packaging material. Otherwise the device will jolt through to the bottom of the cardboard box during transport and can be damaged! If the original packaging is no longer available, it's best to use bubble wrap in which to wrap up the device in a generous manner. Finally the whole should be put into a solid cardboard box.

2 | Setup

Always position the Decade on a stable surface. Thanks to the compact dimensions and low weight, you can set up the Decade directly next to the record player.

3 | Connecting

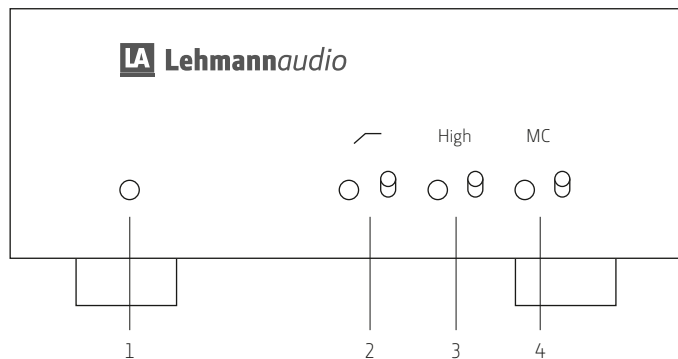
Check whether the included mains adapter is suitable for connection to the mains network used in your country. On the adapter, you will find information about the specified mains voltage for the device. Now connect the Decade to the mains network using the external power supply and the connection on the rear of the device.

Note the safety instructions starting on page 32!

Functional description

In this chapter you will learn more about the connections, controls and also the application possibilities of your Lehmannaudio Decade phono stage.

Decade front panel



1 | Operating mode display (LED)

When the LED is lit up, the Decade is operational. The mains switch is located on the PWX II power supply.

2 | Soft bass rolloff filter

Some records deliver too much low-frequency energy, in particular warped records. To protect your speakers, it is advisable to activate the filter employed in the Decade. The cutoff frequency is approx. 50 Hz with a steepness of 6 dB/octave. The filter operation will be indicated by the corresponding LED.

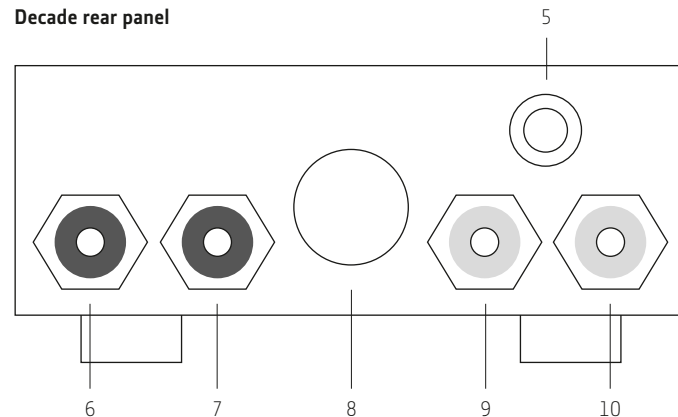
3 | High gain switch

With this switch you can boost the gain for MM as well as MC systems by 10 dB. The high gain mode will be indicated by the corresponding LED.

4 | MC switch

With this switch you can select between 36 dB (MM) and 56 dB (MC) of gain. The MC mode will be indicated by the corresponding LED.

Decade rear panel



5 | Ground terminal (GND)

If your record player has a separate ground cable, please connect it here. The terminal is suitable for connecting a cable, flex, open cable ends, cable lug or 4 mm banana plug.

6 + 10 | Input jacks (IN)

Connect the cables coming from your record player to these jacks. The left jack (black) is for the left channel, the right jack (red) for the right channel. Please be sure to connect the channels correctly.

7 + 9 | Output jacks (OUT)

RIAA filtered high-level output. Connect the cables that either lead to the input of a downstream high-level pre-amplifier (high-level inputs are labelled 'Line', 'AUX', 'CD', 'Tuner' etc.) or directly to a power amplifier with volume control. Here too, please be sure to connect the cables to the correct channels.



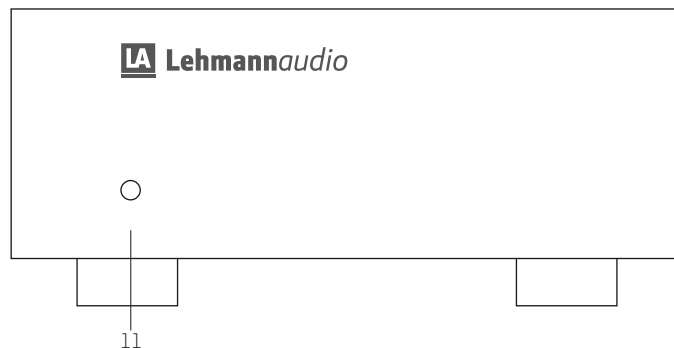
ATTENTION!

Never connect the output of the Decade to the phono input of another device. This could damage the phono stage or speakers.

8 | Input for the PXW II power supply

First connect the 4-pole Neutrik XLR plug to the audio device. Only then connect the power supply to the mains outlet. Please do never plug in or pull off this connection during operation.

PWX II power supply front panel



11 | Operating mode display (LED)

When the LED is lit up, the PWX II power supply is operational.

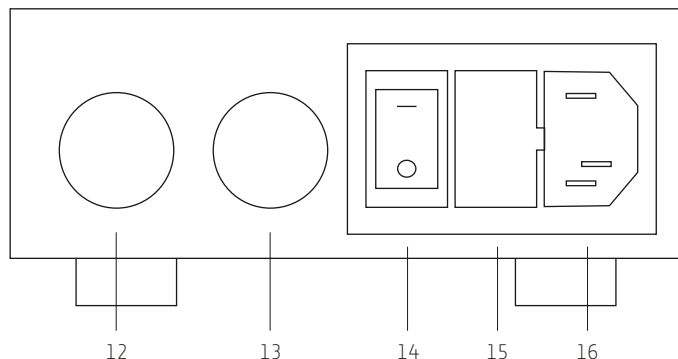
12 + 13 | Power supply output

The wattage of a PWX II power supply will be sufficient for one Decade plus another phono device of the Black Cube series (Black Cube/Black Cube SE II). Both power supply outlets are equivalent.

14 | Mains switch

With the mains switch on the PWX II power supply the Decade can be turned on or off.

PWX II power supply rear panel



15 | Fuse

Fuse holder for one safety fuse (see technical specifications on page 48). Use only fuses of the same type and rating.

16 | Mains connection

Power connection of the device to be used with the included power cable or a cable with identical connector type. The Decade must only be run on the mains voltage which the device is designed for. Please refer to the rating plate on the bottom side of the device.

Putting into operation

To put your Decade into operation, you need information about your pick-up system. Two details are important: Are we talking about an MM (moving magnet) or MC (moving coil) system? What is the required connection resistance? As a rule, you will find both pieces of information on the product packaging of your pick-up system. Please ask your specialist dealer for recommended values in case of doubt. Support for correctly configuring your Decade will be gladly provided.

Once you have the required information, please proceed as follows:

- 1 | Set the volume **on your system to minimum** or turn your amplifier off entirely.
- 2 | Connect the **PWX II power supply**.
- 3 | Adjust the **gain for your pickup system (MM/MC)**. The setting is done **via a toggle switch on the front panel of the device**. Both channels are adjusted in sync.
- 4 | Adjust the **terminal resistance and the input impedance** on your Decade. The setting must be identical for both channels and is done by using the **selectable resistors inside the device and also the DIP switches located on the bottom side**. For more information please see page 44.
- 5 | Connect the **record player to the input** on the Decade.
- 6 | Connect the output on the Decade to a **line input on the downstream amplifier**. To largely exclude line losses, the signal cables should be kept short.

Common settings

The switch configurations for some systems are listed below. Please note that both channels must have the same setting in all cases.

Resistance	Switch
47 kohms	
1 kohms	
100 ohms	
Custom load	

Irrespective of the impedance value you may select the input capacitance. In the following chart you will find a summary of the setting options.

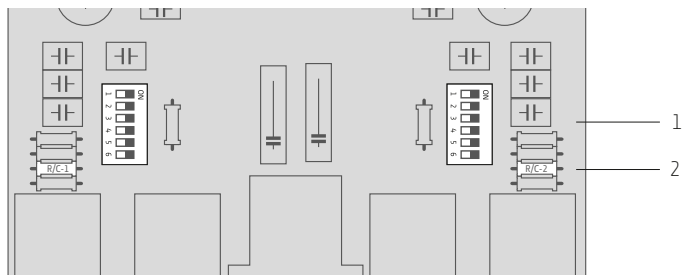
When activated together, the capacitance values will be summed up. The basic capacitance is 47 pF.

Input impedance/capacitance	Switch
47 pF	
147 pF	
267 pF	
367 pF	
1.047 pF	
1.147 pF	
1.267 pF	
1.367 pF	

Expert notes

The Decade can be adapted to virtually all commonly available systems. The setting options are accessed by the toggle switches on the front panel or by the DIP switches located on the bottom side of the device. Only the custom impedances need to be fitted internally. These settings should only be performed by a qualified technician. An Allen key to open the housing is supplied with the device.

Interior view (detail)



1 | DIP switches

The DIP switches located on the bottom side of the Decade are used to adjust both the terminal resistance and the input capacitance. You will find the setting options on page 44 and 45.

2 | R/C-1/R/C-2

These are free slots for custom impedances to be activated via the appropriate DIP switches for both channels (no. 6 each). A resistor/capacitor plugged here will be put in parallel to all other switch-activated impedance/capacitance values and to the 47 kohms/47 pF as well.

Sound optimisation tips

The Decade can only be as good as the signal supplied by the turntable or pick-up system. Since playing back a record consists of mechanical sampling with many important influencing variables, we provide some sound optimisation tips here. For high-end record players in particular, you should consult your dealer for the required service and adjustments.

1 | Adjusting the pick-up arm geometry and system should always be performed by a specialist. In case of incorrect settings, the effects range from sound problems to one-sided and therefore premature wear of the system. Good specialist dealers have special measuring and adjusting equipment. It is much more accurate than what may be included with the pick-up system.

2 | On record players with a sub-chassis, the **vibration behaviour** should also be optimised by an expert. Sound improvements are possible here as well.

3 | Using a **decoupling mat** that contributes to better mechanical separation between the record and turntable can further improve the sound quite significantly.

4 | Special attention should also be paid to the chosen **cable materials and assembly**. This applies in particular to the system cables (headshell), the cables from the pick-up to the Decade and the cables to the downstream pre-amplifier.

Technical specifications

	MM	MC
Sensitivity for output level 775 mV/ 0 dB (with activated high gain switch)	3,8 mV/1 kHz	0,38 mV/1 kHz
Gain 1 kHz	46 dB	66 dB
Maximum input level	45 mV	4,5 mV
Signal to noise ratio (RMS unweighted)	78 dB	69 dB
Gain	36 dB, 46 dB, 56 dB, 66 dB	
Channel separation	> 80 dB at 10 kHz	
Input impedance	47 kohms, 1 kohm, 100 ohms • 1 x custom load	
Output impedance	5 ohms	
Input capacitance	47 pF to 1,370 pF	
Channel mismatch	typ. 0,5 dB	
Bass filter	50 Hz, 6 dB/oct.	
Power consumption	app. 13 VA	
Mains voltage	<ul style="list-style-type: none"> • Europe: 240 V AC • USA/Canada/Mexico/Taiwan: 120 V AC 	
Fuse	<ul style="list-style-type: none"> • Europe: 250 mA Slow • USA/Canada/Mexico/Taiwan: 500 mA Slow 	

Outer dimensions W x D x H	<ul style="list-style-type: none"> • Audio section: 110 mm x 280 mm x 50 mm • PWX II power supply: 110 mm x 280 mm x 50 mm
Weight	<ul style="list-style-type: none"> • Audio section: 0,87 kg netto • PWX II power supply: 1,56 kg netto

Troubleshooting

Fault	Cause	Solution
LED indicator is not lit.	The mains cable is not plugged in at the power outlet.	Insert the mains cable into the power outlet.
	The power supply is not connected with the device.	Connect the power supply with the device.
No signal.	The mains cable is not plugged in at the power outlet.	Insert the mains cable into the power outlet.
	The power supply is not connected with the device.	Connect the power supply with the device.
	Input and output are not wired correctly on the Decade.	Check if the cables coming from the turntable are connected to the input and also if those going out to the amp are connected to the output of the Decade. Reconnect them correctly if necessary.
	A wrong input channel has been selected on the following amplifier.	Select the appropriate input channel.

Signal on one channel only.	The DIP switches are unevenly set.	Check the positions of both DIP switches. Make sure that the settings are equal on both channels.
	One connection lead has a loose contact, is not well plugged in or defective.	Check the connection leads for slack joints, loose pushfits or defects and, if necessary, replace them. Potential causes: system cable (headshell), tonearm cable from turntable to Decade and line cable from Decade to the following input.
	The subsequent input stage is defective.	Check by connecting to different line inputs.
Left and right channels are reversed.	The channels were reversed in the connection lead.	Check the connection leads and swap the channels here, if necessary. Potential causes: system cable (headshell), tonearm cable from turntable to Decade and line cable from Decade to the following input.
Signal level is too low.	Non-optimal matching between pickup cartridge and Decade.	Increase the gain factor according to this user manual by means of the switches located on the front panel of the Decade.
	The selected input impedance on the Decade is too low.	Select a resistance value for the input impedance which is at least 10 times greater than the pickup's system impedance.
Signal is soft and muffled.	An MC impedance has been selected for an MM system.	Deactivate all MC impedances via DIP switch. Also watch out for a custom impedance that may be plugged in.

Signal sounds distorted.	The gain is set too high on the Decade.	Lower the gain factor according to this user manual by means of the switches located on the front panel of the Decade.
	The output of the Decade is connected to the subsequent phono input.	Connect the output of the Decade to a line input on the following amp.
The signal sounds hollow, without a proper bass and localisation.	The pickup system has been connected phase-reversed.	Connect the system cable in-phase.
Audible hum.	The tonearm ground is not connected on the Decade.	Connect the tonearm ground on the Decade.
	Several connected devices create a ground loop.	Make a correct grounding connection. If required, consult an electrician.
	There is an interference caused by some other power consumer.	One by one, disconnect all devices connected to the same electric circuit and listen to the effect. Keep the interfering device turned off during music listening or use a mains filter to connect it to the electric circuit.
	The mains transformer of a device placed nearby is causing interference at the input.	Make sure the distance between your hifi chain and interfering devices is sufficient.

Radio interference audible in the background.	The tonearm ground is not connected on the Decade.	Connect the tonearm ground on the Decade.
	The standard input capacitance (47 pF) is too low for MC.	See your dealer to have the custom impedance plug-in slot fitted with an additional capacitance.

If a problem cannot be remedied with the help of this summary, please contact the specialist retailer where you purchased the device. If this is not possible, you can easily find another competent dealer in your area with the dealer search at www.lehmannaudio.com/service/dealers.

Legal notes

Warranty

Each device from Lehmannaudio is tested individually and subject to a comprehensive functional check. The use of only the very best components enables us to grant a warranty of two years.

The receipt/proof of purchase shall serve as warranty proof. A registration form is supplied with the product or can be downloaded at www.lehmannaudio.com/service/register.html. Damages due to incorrect installation or inappropriate handling are not covered by warranty and will therefore be repaired at the owner's expense. Claims for damage of any kind, notably for secondary failures, are excluded. In addition we exclude any liability which exceeds the merchandise value of the device.

The general terms and conditions apply of:



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State of technology

To ensure the highest audio quality, Lehmannaudio devices are constantly updated to the current state of the art. We reserve the right to make necessary alterations in design and circuitry without prior notice. Technical data and visual appearance may therefore differ from the present user manual.

Service

In any event all maintenance or repair works must be carried out by qualified technical staff. If you want to send back the device, please contact Lehmannaudio directly to discuss the procedure in detail.

For service works on the Decade please contact the retailer where you purchased the device. If this is not possible, you can easily find another competent dealer in your area with the dealer search at www.lehmannaudio.com/service/dealers.

Any modifications on the device are not permissible. In case of nonobservance the device will lose its CE conformity and warranty claims.

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When properly installed in line with this handbook, this product complies with the following European directives:

Low-Voltage Directive 2006/95/EG: EN 60065

EMV Directive (electromagnetic compatibility) 2004/108/EG:

EN 55103-1:2009, EN 55103-2:2009



The product has been manufactured in compliance with the directive 2002/95/EG.



WEEE no.

DE 40695871

WEEE Disposal of waste electronic equipment

The crossed-out trash bin is the EC symbol for the separate disposal of waste electronic equipment. The Decade contains electric and electronic components which, after disposal of the device, will either be reused or salvaged and recycled. According to the directive 2003/108/EG it must therefore not be disposed of together with household waste. In case of disposal please take the junk device back your dealer or request further information there.

The Lehmannaudio Vertriebs GmbH is listed in the WEEE registry.

A handwritten signature in black ink, appearing to read 'Norbert Lehmann'.

Norbert Lehmann, managing director

Cologne, January 30, 2018



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