

MC 1600

BEDIENUNGSANLEITUNG

USER GUIDE



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DEAR THORENS CUSTOMER

Thank you very much for your confidence in our product, the MC1600 phono preamplifier. With the purchase of this device, you have acquired a high-quality product for the reproduction of records, which must be handled and adjusted with care in order to fulfill its task. The components and connection sockets used guarantee the highest quality, even after years of use.

Understandably, you will want to start listening to music as soon as possible, but we would ask you to read these instructions carefully before using the phono preamplifier for the first time so that you can get the most out of it and enjoy it for a long time to come.

We have made every effort to include everything you need to know in these instructions.

If you have any questions that are not answered here, please contact your dealer directly or write to info@thorens.com.

Your Thorens team

WARRANTY

The statutory warranty provisions apply. If a defect occurs in your device within the warranty period, please contact your dealer and specify the nature of the fault. If the fault cannot be rectified on site by your dealer or distributor, they should ask for assistance by Thorens. If the device has to be sent to Thorens the original packaging should be used.

If your original packaging is not available any more, you can obtain it from Thorens for a fee.

The device must be sent carriage paid. Goods sent carriage forward will not be accepted. Return shipping is carriage paid.

Never ship the phono preamplifier without packing it securely.

Damage caused by failure to follow the operating instructions or by external mechanical influences, as well as transport damage, are not covered by the warranty. The warranty only covers the device itself; connection cables are covered by the warranty provided by the respective manufacturer.

If you have any further questions, our service team will be happy to assist you at any time.

IMPORTANT!

KEEP THE DEVICE PACKAGING IN CASE THE DEVICE NEEDS TO BE PACKED FOR TRANSPORT.

Warning!

To prevent fire or electrical damage, the device must not be exposed to moisture or rain.

SAFETY INSTRUCTIONS

When used as intended, the device is safe for consumers.

Please observe the following safety instructions!

- The device must not be placed in rooms with high humidity, e.g. kitchens or saunas, as condensation can damage the device.
- The device is intended for use in a dry environment and in a moderate climate and must not be exposed to dripping or splashing water.
- Do not operate the device near bathtubs, swimming pools, or splashing water.
- Do not clean the device under running water.
- The device must only be placed on a firm, horizontal surface.
- Do not place the device near heat sources such as radiators. Avoid direct sunlight and places with unusually high levels of dust.
- Only operate the device in a horizontal position.
- Do not use outdoors!
- If you move the device from a cold to a warm environment, moisture may condense inside the device. In this case, wait about an hour before using it.
- Do not open the device or remove any covers!

NOTES

Interference and interference immunity

The device complies with the protection requirements in the field of electromagnetic compatibility, which are listed in Directives 89/336/EEC and FCC, Part 15, among others.

The electromagnetic emissions generated by the device are limited to such an extent that other devices and systems can be operated as intended.

The device has adequate immunity to electromagnetic interference, allowing other devices and systems to operate as intended.

The device has been tested and meets the safety requirements of Protection Class 1 EN 60950; 1992 + A1/A2; 1993 (UL1950).

The EMC guidelines for interference emission in accordance with EN 55103-1 and interference immunity in accordance with EN 55103-2 for audio, video, and audiovisual equipment, as well as for studio lighting control equipment for professional use in accordance with evaluation criterion B of the electromagnetic environment E4, are also complied with.

The CE declaration of conformity is hereby confirmed.

Compliance with these standards ensures, with reasonable probability, both protection of the environment and appropriate immunity of the device. However, there is no absolute guarantee that no unauthorized electromagnetic interference will occur during operation of the device.

To largely rule out the likelihood of such interference, further measures must be observed.

Only shielded cables should be used for all audio paths. Ensure that the shielding is connected to the corresponding connector housing in a flawless, large-area, corrosion-resistant manner. Cable shielding connected at only one end can act as a receiving or transmitting antenna.

Only components that meet the requirements of the above-mentioned standards may be used in the system and in the environment in which the device is used.

The formation of ground loops must be avoided or their undesirable effects reduced by keeping their area as small as possible and reducing the current flowing in them by inserting, for example, a common mode choke.

A grounding concept for the system must be provided that considers both safety requirements and EMC issues. When deciding between star, surface, or combined grounding, the advantages and disadvantages must be weighed against each other.

Star-shaped grounding is usually appropriate for hi-fi systems.

If there are already ground loops between connected devices, it may be advisable to use balancing or differential amplifiers to separate unwanted ground or earth connections.

ABOUT THE THORENS MC 1600

The Thorens MC1600 phono preamplifier amplifies the tiny voltages generated by a cartridge system with extremely low noise and equalizes them with the least possible deviation from the standardized RIAA curve. In addition to being able to process signals from moving magnet and moving coil systems and adapt very precisely to their electrical parameters, the MC1600 also allows for the symmetrical connection of MC cartridges and completely symmetrical signal processing of their signals. XLR sockets are available for both input and output.

MC cartridges deliver a balanced (+/-) signal without ground reference as standard, so a balanced connection to the phono preamplifier is the connection of choice. This is especially true since the interference sensitivity of a balanced connection is significantly higher than that of an unbalanced connection.

With MM cartridges, a ground reference is usually part of the configuration, so an unbalanced RCA connection is recommended.

The electrical parameters of the MC1600 can be adjusted to most cartridges using DIP switches located on the bottom. The input impedance can be set between 20 ohms and 1280 ohms in 20-ohm increments, the input capacitance ranges from 50 to 600 pF, and the gain from 32 to 68 dB in 10 steps. For MM cartridges, the standard impedance is 47 kOhm.

This should allow it to handle even the most exotic cartridges. The lower impedance of 20 ohms also makes the MC1600 interesting for owners of Ortofon SPUs.

In addition, the Thorens MC1600 has a multi-stage subsonic filter that can also be switched on the bottom.

UNPACKING

When unpacking, check that everything is complete and undamaged and remove all packaging accessories. In the event of transport damage, contact your dealer or Thorens immediately. Keep the packaging material and cardboard box in a safe place. Shipping the device later in unsuitable packaging could result in damage that would not be covered by the warranty.

After unpacking, allow the device to adjust to room temperature for at least 1 hour.

SETUP

Do not place the device near heat sources such as heaters or warm air outlets, or in places exposed to direct sunlight, excessive dust, moisture, rain, mechanical shocks, or vibrations.

If liquid or a solid object enters the housing, the device must be checked by a specialist before it can be used again. Therefore, do not open the housing yourself.

If the device is moved directly from a cold to a warm place or set up in a very humid place, condensation may form inside the device.

The device will then not function properly. Therefore, always leave the device in a warm place for at least one hour until any condensation that may have formed has evaporated.

Switch off the system when connecting or disconnecting the power cord or audio cables.

Clean the housing, front panel, and controls with a soft cloth slightly moistened with a mild soap solution. Do not use scouring pads, scouring powder, or solvents such as alcohol or gasoline, as these can damage the surface of the housing.

FIRST STEPS

Experience shows that reading a comprehensive operating manual is tedious and that most people want to start using their new device immediately.

Mostly the operating instructions are only read once the new device is already playing or even not playing.

To enable quick initial playback, here are some brief instructions. Nevertheless, we recommend reading these operating instructions in full to familiarize yourself with all the features of the Thorens MC1600 phono preamplifier.

It is assumed that the other components for music playback are fully wired and functional.

Before connecting the MC1600 to the system, please first disconnect all components from the power supply. This reduces the possibility of static discharge when connecting the cables to the phono preamplifier. Then, on the bottom of the MC1600 itself, set the electrical parameters (gain, capacitance, input impedance) according to the values of the cartridge used. If no specific values are available, proceed as follows:

For a moving magnet system (MM), first set the gain to 38 dB, the input resistance to 47 kOhm, and the capacitance to 100 pF.

For a moving coil system (MC), first set the gain to 58 dB, the input resistance to 100 Ohm, and the capacitance to 100 pF. However, there are also moving coil systems on the market that only sound “good” from 500 ohms upwards.

A detailed description of the switch settings is provided below in the chapter on settings.

The turntable can then be connected to the MC1600. Both unbalanced RCA and balanced XLR sockets are available as inputs. The ground cable is screwed to the GND terminal. On the output side, there is also a pair of RCA and XLR sockets.

Please note that only one turntable can be connected and only one connection from the MC1600 to the following amplifier may be made.

It does not matter whether the respective connections are made via RCA or XLR. A mixed connection is also possible. For example, by connecting the turntable to the input sockets using an XLR cable and routing the signal to the amplifier via a RCA cable.

Then connect the power cable, switch on all devices, and turn up the volume to an acceptable level.

FRONT OVERVIEW

The front of the Thorens MC1600 contains no other elements apart from the illuminated Thorens logo, an LED for monitoring the operating status, and an overload warning. The color of the logo can be changed using RGB switches on the underside.

The LED lights up red during normal operation and changes to blue when overloaded.



REAR OVERVIEW

The rear panel contains the power connection socket with fuse and hard power switch on the left-hand side, the input and output sockets for the signal in RCA and XLR, the screw for the earth connection, and the dimmer for the brightness of the Thorens lettering on the front panel.

The input sockets for connecting to the turntable are in the input section. The RCA sockets are at the top and the XLR sockets below them. Only one pair of sockets can be used at a time, so it is not possible to connect two turntables. The letters L and R indicate the left and right channels. Both MM (moving magnet) and MC (moving coil) cartridges can be connected. However, balanced signal processing is only possible when using an MC cartridge with an XLR connection.

Right next to it is the screw labeled GND for connecting the turntable's ground wire.

The output section contains the output sockets for the cables to the following amplifier. This is where the equalized and amplified signal is located. Here, too, only one connection is possible. Balanced with a suitable cable via the XLR output sockets and unbalanced via RCA cables.

The control labeled DIMM is used to adjust the brightness of the Thorens logo on the front panel.



THE PHONO STAGE

This phono preamplifier can be manually adjusted to the cartridge system to a very large extent. It supports both

- MC = moving coil (quiet and loud) and
- MM = moving magnet (quiet and loud)

kind of cartridges.

The parameters are adjusted using the DIP switches accessible from below to set

- the capacitive loads (input capacitance)
- the ohmic loads (input impedance)
- the gain

The device must be disconnected from the mains before making any adjustments!

Both channels can be adjusted separately but should always have the same values.

Once the cartridge has been installed and connected, the termination is first set to the capacitive and impedance values recommended by the system manufacturer.

SETTINGS FOR MM SYSTEMS

For MM systems, only one capacitive component is usually added, and the capacitance of the connection cable must also be considered. Unless the system manufacturer expressly recommends otherwise, the rule of thumb is to keep the capacitance as low as possible. The Thorens MC1600 allows values between 50 pF and 600 pF, which are set on the underside of the device. A capacitance too high can result in a flat, tired sound with little spirit and dynamics for some cartridges.

Furthermore, the input impedance must be set to 47 kOhm. The other values for the input impedance cannot be used. There is no explicit switch between MM and MC.

SETTINGS FOR MC SYSTEMS

With MC systems, only a suitable input impedance is usually considered; the input capacity is generally irrelevant. Suppliers of MC systems usually provide a guideline value for the resistance. If no guideline value is provided, it is advisable to start with a value that is approximately ten times the internal impedance of the cartridge and then adjust the value by listening until the right setting is found. Modern cartridges usually perform very well at 100 ohms, while older cartridges, such as the Ortofon SPUs or classics as the MC10/20/30, tend to perform better at lower values down to 20 ohms, and a Denon DL103, for example, delivers the best results at values above 500 ohms. The Thorens MC1600 offers a very wide adjustment range from 20 to 1280 ohms in increments of 20, allowing you to set the right value for almost all MC cartridges on the global market.

Note: sometimes it is worth listening to MC systems with 47 kOhm as well.

ADJUSTING THE GAIN

For the gain, it is also advisable to follow the recommendations of the pickup manufacturer.

Loud MM systems require only a small amount of gain, while quiet ones require more.

First, set the output impedance of the pickup system to the recommended capacitive and impedance values.

Once these have been set, adjust the gain by trial and error.

The gain setting can be made much easier with the level meter on the front panel.

To find the correct setting, proceed as follows:

First, set the volume control of the preamplifier to a low value.

Using a loud record, first select a low gain on the switches (e.g., 38 dB for MM, 58 dB for MC) and check whether the level meter, referred to below as the PEAK meter, ever lights up blue. Now increase the gain on the switches until this PEAK indicator occasionally lights up during pulses. Then reduce the gain by 4 dB.

The playback volume can then be compared with another source, such as a CD or streamer. If there are significant differences, the volume can be adjusted with the small switches but always pay attention to the PEAK indicator.

The PEAK indicator can and may light up with other records, as it becomes active approximately 14 dB below clipping. The PEAK indicator is therefore not yet clipping and serves as a rough guide that there is enough headroom.

After adjusting the gain, the capacitive and ohmic loads can then be varied experimentally to achieve the best sound. In principle, however, high gain often means audible noise, but the Thorens MC1600 is designed to be so low-noise that even at the highest gain of 68dB, no disturbing noise occurs.

Note: So-called high-output MC systems, which are operated at the MM input with 47 kOhm input impedance, usually require higher gain than normal MM systems and should therefore initially be tested at 44-48 dB gain. It may be worthwhile to increase the gain even further.

THE ADJUSTMENT OPTIONS

The bottom of the MC1600 shows the following image.

DIP switches on the bottom

The switch banks are coded according to their function.

With the exception of the RGB bank, which can be used to set the color of the Thorens logo on the front, all functions are channel-separated.

The coding of the switch banks is as follows:

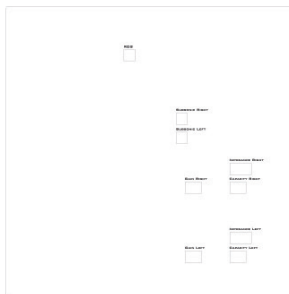
Impedance – input impedance

Capacity – input capacity

Gain – amplification

Subsonic – filter against low-frequency interference

The desired values are set separately for each channel in the switch banks on the bottom:



THE SETTINGS

The input impedance is set separately for the left and right channels.

Note: for MM operation, the value must be set to 47 kOhm, as there is no explicit switch between MM and MC.

Impedanz	1	2	3	4	5	6	7
20R	ON	ON	ON	ON	ON	ON	ON
40R	ON	---	ON	ON	ON	ON	ON
60R	ON	ON	---	ON	ON	ON	ON
80R	ON	---	---	ON	ON	ON	ON
100R	ON	ON	ON	---	ON	ON	ON
120R	ON	---	ON	---	ON	ON	ON
140R	ON	ON	---	---	ON	ON	ON
160R	ON	---	---	---	ON	ON	ON
180R	ON	ON	ON	ON	---	ON	ON
200R	ON	---	ON	ON	---	ON	ON
220R	ON	ON	---	ON	---	ON	ON
240R	ON	---	---	ON	---	ON	ON
260R	ON	ON	ON	---	---	ON	ON
280R	ON	---	ON	---	---	ON	ON
300R	ON	ON	---	---	---	ON	ON
320R	ON	---	---	---	---	ON	ON
340R	ON	ON	ON	ON	ON	---	ON
360R	ON	---	ON	ON	ON	---	ON
380R	ON	ON	---	ON	ON	---	ON
400R	ON	---	---	ON	ON	---	ON
420R	ON	ON	ON	---	ON	---	ON
440R	ON	---	ON	---	ON	---	ON

Impedanz	1	2	3	4	5	6	7
460R	ON	ON	---	---	ON	---	ON
480R	ON	---	---	---	ON	---	ON
500R	ON	ON	ON	ON	---	---	ON
520R	ON	---	ON	ON	---	---	ON
540R	ON	ON	---	ON	---	---	ON
560R	ON	---	---	ON	---	---	ON
580R	ON	ON	ON	---	---	---	ON
600R	ON	---	ON	---	---	---	ON
620R	ON	ON	---	---	---	---	ON
640R	ON	---	---	---	---	---	ON
660R	---	ON	ON	ON	ON	ON	ON
680R	---	---	ON	ON	ON	ON	ON
700R	---	ON	---	ON	ON	ON	ON
720R	---	---	---	ON	ON	ON	ON
740R	---	ON	ON	---	ON	ON	ON
760R	---	---	ON	---	ON	ON	ON
780R	---	ON	---	---	ON	ON	ON
800R	---	---	---	---	ON	ON	ON
820R	---	ON	ON	ON	---	ON	ON
840R	---	---	ON	ON	---	ON	ON
860R	---	ON	---	ON	---	ON	ON
880R	---	---	---	ON	---	ON	ON
900R	---	ON	ON	---	---	ON	ON
920R	---	---	ON	---	---	ON	ON
940R	---	ON	---	---	---	ON	ON
960R	---	---	---	---	---	ON	ON
980R	---	ON	ON	ON	ON	---	ON
1000R	---	---	ON	ON	ON	---	ON
1020R	---	ON	---	ON	ON	---	ON

Impedanz	1	2	3	4	5	6	7
1040R	---	---	---	ON	ON	---	ON
1060R	---	ON	ON	---	ON	---	ON
1080R	---	---	ON	---	ON	---	ON
1100R	---	ON	---	---	ON	---	ON
1120R	---	---	---	---	ON	---	ON
1140R	---	ON	ON	ON	---	---	ON
1160R	---	---	ON	ON	---	---	ON
1180R	---	ON	---	ON	---	---	ON
1200R	---	---	---	ON	---	---	ON
1220R	---	ON	ON	---	---	---	ON
1240R	---	---	ON	---	---	---	ON
1260R	---	ON	---	---	---	---	ON
280R	---	---	---	---	---	---	ON
47k	ON	ON	ON	ON	ON	ON	---

The input capacity is also set for the left channel and right channel.

Kapazität	1	2	3	4	5
50p	---	---	---	---	---
100p	ON	---	---	---	---
150p	---	ON	---	---	---
200p	ON	ON	---	---	---
250p	---	ON	ON	---	---
300p	ON	ON	ON	---	---
350p	ON	---	ON	ON	---
400p	---	ON	ON	ON	---
450p	ON	ON	ON	ON	---
500p	ON	---	ON	ON	ON
550p	---	ON	ON	ON	ON
600p	ON	ON	ON	ON	ON

The gain is also set separately for each channel.

Verstärkung	1	2	3	4	5
+32 dB	---	---	ON	---	---
+36 dB	---	ON	---	---	---
+40 dB	---	---	---	---	---
+44 dB	ON	---	ON	---	---
+48 dB	ON	ON	---	---	---
+52 dB	ON	---	---	---	---
+56 dB	ON	---	ON	ON	---
+60 dB	ON	ON	---	ON	---
+64 dB	ON	---	---	ON	---
+68 dB	ON	---	---	ON	ON

The subsonic filter is set for both the left and right channels. The cut-off frequency is 15 Hz. In the DC position, the filter is disabled.

Subsonic	1	2	3
DC	ON	ON	---
6db / Oct	---	ON	---
12db / Oct	---	---	ON

Important: All settings must be the same for both channels.

The color of the Thorens logo on the front panel is set using the RGB switch block.

Color	1	2	3
Off	---	---	---
Blue	---	---	ON
Green	---	ON	---
Turquoise	---	ON	ON
Red	ON	---	---
Purple	ON	---	ON
Yellow	ON	ON	---
White	ON	ON	ON

Technical data	
Concept	Dual mono design with two-stage amplification and passive and active RIAA equalization
Frequency response	10 Hz ... 20 kHz with max deviation 0.1 dB
Total harmonic distortion	< 0.005%
Signal-to-noise	ratio based on 2 V depending on amplification with 100 ohms: > 100 dBA to > 76 dBA
Crosstalk attenuation	amplification-independent with 100 ohms: 110 dB based on 2V
Amplification	+32 dB to +68 dB in ten steps of 4 dB each
Inputs	2 x RCA and 2 x XLR
Output level	2 x RCA and 2 x XLR
Output current	100 mA rms max.
Output impedance	50 ohms RCA, 110 ohms XLR
Supply voltage	100–280 V with automatic adjustment
Dimensions (W x H x D):	300 x 90 x 301 mm
Weight	5 kg
Front panel design	Brushed black aluminum
Warranty	3 years

Technical data and changes that serve to improve sound quality or technical progress are reserved.

Thorens GmbH

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