REVOX

User manual

T77 Turntable
STUDIOMASTER **T700 Turntable**

INTRODUCTION

Congratulations on purchasing your new T77 Turntable / STUDIOMASTER T700 Turntable and thank you for the trust you have placed in us by purchasing this high-quality product.
Before using your Revox turntable, please read the instructions in this manual to ensure that you get the best possible sound quality.

General safety instructions, information on disposing of your old device, and **warranty terms and conditions** can be found in the enclosed leaflet.

Observe the warning labels on the device and its external power supply unit:

To avoid the risk of electric shock, do not remove any covers.
Maintenance and repairs may only be carried out by qualified personnel!

Unpacking

We recommend that you keep the packaging material for possible later transport.
After unpacking, please check the T77 Turntable / STUDIOMASTER T700 Turntable and accessories for completeness and transport damage. Before using the device, please read the operating instructions carefully. Keep them as a reference.

A device that shows mechanical damage or into which liquid has penetrated must not be connected to the mains.

Scope of delivery

- Chassis T77 Turntable / STUDIOMASTER T700 Turntable with pre-mounted tonearm
- MC cartridge *Ortofon Quintet Bronze / Ortofon Quintet Black* (pre-mounted and aligned)
- Subteller incl. bearing
- Turntable
- Acrylic dust cover
- External power supply 12-15 VDC/ min. 1A with power cord
- Cotton gloves
- Accessory box with anti-skating weight, tonearm counterweight, strap
- Digital tonearm scale
- Carbon record brush*
- Spirit level*
- Adjustment tool Allen key SW 1.5, SW 2.0, SW 3.0
- *Safety instructions & warranty information* leaflet
- Operating instructions T77 / T700 turntable
- Welcome letter
- Warranty card

* Not included with the T700 BASIC

Please keep the packaging in case the device needs to be packed for transport.

Foreword

Analog music experience

The T77 / **STUDIO**MASTER T700 turntables are high-end turntables featuring innovative technologies. They are manufactured exclusively in Germany from the highest quality materials and impress with their clear, elegant, and timeless design. They are masters of their class and provide music lovers with an impressive, audiophile music experience. Thanks to its built-in phono amplifier, the T77* / T700 is compatible with all Revox products—such as the **STUDIO**MASTER M300, M500 and also the M / Joy series, as well as products from the past (Evolution, Emotion, Exception, B series)—and can be easily integrated into a Revox multiroom and multi-user system. It is also compatible with other popular audio products.

Integrated phono preamplifier

A special highlight of the T77 / **STUDIO**MASTER T700 is the unique, integrated MC phono preamplifier. The integration of the preamplifier enables the best and shortest connection between the pickup and the preamplifier, resulting in the highest signal quality while avoiding interference. For this purpose, the tonearm cable is tightly twisted and soldered directly to the input of the preamplifier. In addition, there is a galvanically isolated power supply for the phono preamplifier and the motor control, which prevents mutual negative interference.
The T77 outputs the music signal in the form of an analog, balanced studio format via XLR sockets. The **STUDIO**MASTER T700 outputs its music signal via an analog, unbalanced audio format via RCA sockets.

Electronic speed control

Absolute speed accuracy is essential to ensure the best sound quality. To this end, the T77 / T700 has a high-precision, quartz-accurate PLL speed control via a contactless optical sensor. This corrects deviations (e.g., caused by environmental/temperature fluctuations, aging of belts and bearings, friction during the scanning process) and ensures that the absolute target speed is maintained with a tolerance of 0.1%. In addition, the belt drive in combination with a high platter mass and an optimally designed platter bearing already results in an almost perfect synchronous running characteristic. The soft start for a slow motor start-up guarantees reduced belt wear.

Note on wear parts

The T77 / T700 turntable has been designed in terms of its mechanical and electrical construction for years of use and enjoyment of music. However, there are two components, the *pickup system* including the stylus and the *drive belt*, which are subject to a certain amount of wear and tear during use and should be replaced when necessary. Revox recommends replacing these two components either after 500-800 hours of operation or after 4-5 years, whichever comes first.

* with the XLR-RCA adapters included in the scope of delivery

Assembly and installation

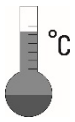
The T77 / **STUDIO**MASTER T700 turntable is a precision mechanical instrument and is therefore disassembled before transport to prevent damage to the platter bearing and tonearm bearing during transport. Before disassembly, each T77 / T700 turntable is completely assembled, the shaft and bearings are run in, and a complete final inspection is carried out. An acoustic listening test of the T77 / T700 in a hi-fi system completes the inspection.

Note on turntable bearings:
If you are a dealer or customer installing **several** T77 / T700 turntables at the same time, the turntable bearings of the individual package units must **not** be interchanged. After the turntable bearings have been run in at the factory, the bushing and axle are matched and form a mechanical unit.

Note on gloves*

When you open the inner box of the T77 / T700 turntable, you will find a pair of cotton gloves. These have been included so that the T77 / T700 can be assembled without leaving fingerprints and abrasion marks. It is particularly important to use the cotton gloves when fitting the drive belt. Under no circumstances should it come into contact with grease or oil, as this will reduce its adhesion to the pulley and cause the rubber belt to age prematurely. If the belt does come into contact with grease/oil, it can be cleaned with alcohol/isopropanol. Only reuse it once the belt is completely dry.

Temperature note



Before you begin assembly, the turntable and all its components should have reached room temperature. This is particularly important for assembling the platter bearing, as low temperatures can cause the bushing and axle to expand or contract at different rates, which may result in an incorrect fit.

Assembly step 1: Check the DIL switch ( )

Before assembly, unless you want to install a different cartridge, you should check the DIL switch setting of the integrated phono preamplifier on the underside of the chassis. This is set to the factory-installed *Ortofon Quintet Bronze/Black* MC system with a terminating resistor of **100 Ω** and a gain for **300 µV** (0.3 mV) output voltage. A detailed description of the integrated phono preamplifier can be found in the chapter *Phono Preamplifier.*

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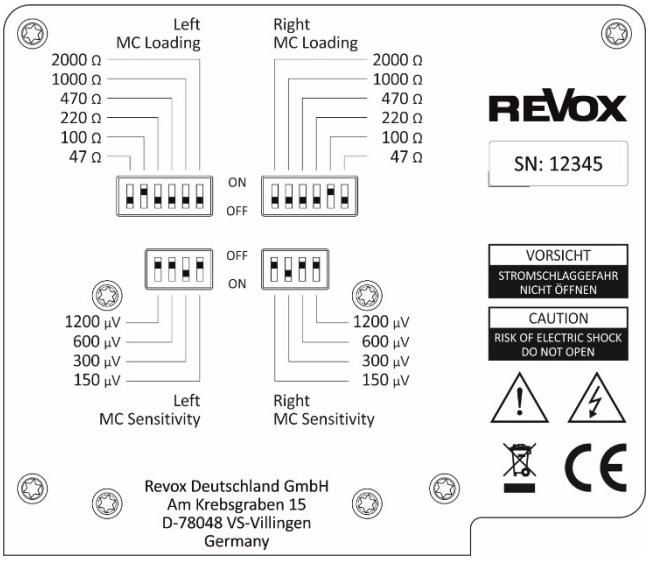
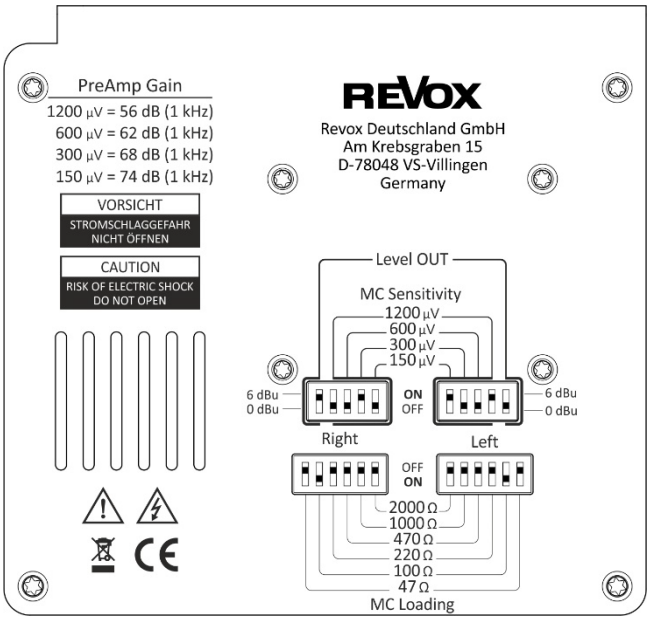


Setting options T700



Setting options 700-Pro / T77

Fig.: Factory setting phono preamplifier for *Ortofon Quintet Bronze/Black*

* Not included with the T700 BASIC

Assembly step 2: Attaching the sub-platter and turntable platter

The next step is to remove the plastic cover plug from the turntable bearing. Please note that you should not use any sharp objects that could damage the soft sintered bronze bearing bushing. The cover plug should be stored in the accessory box for later transport.

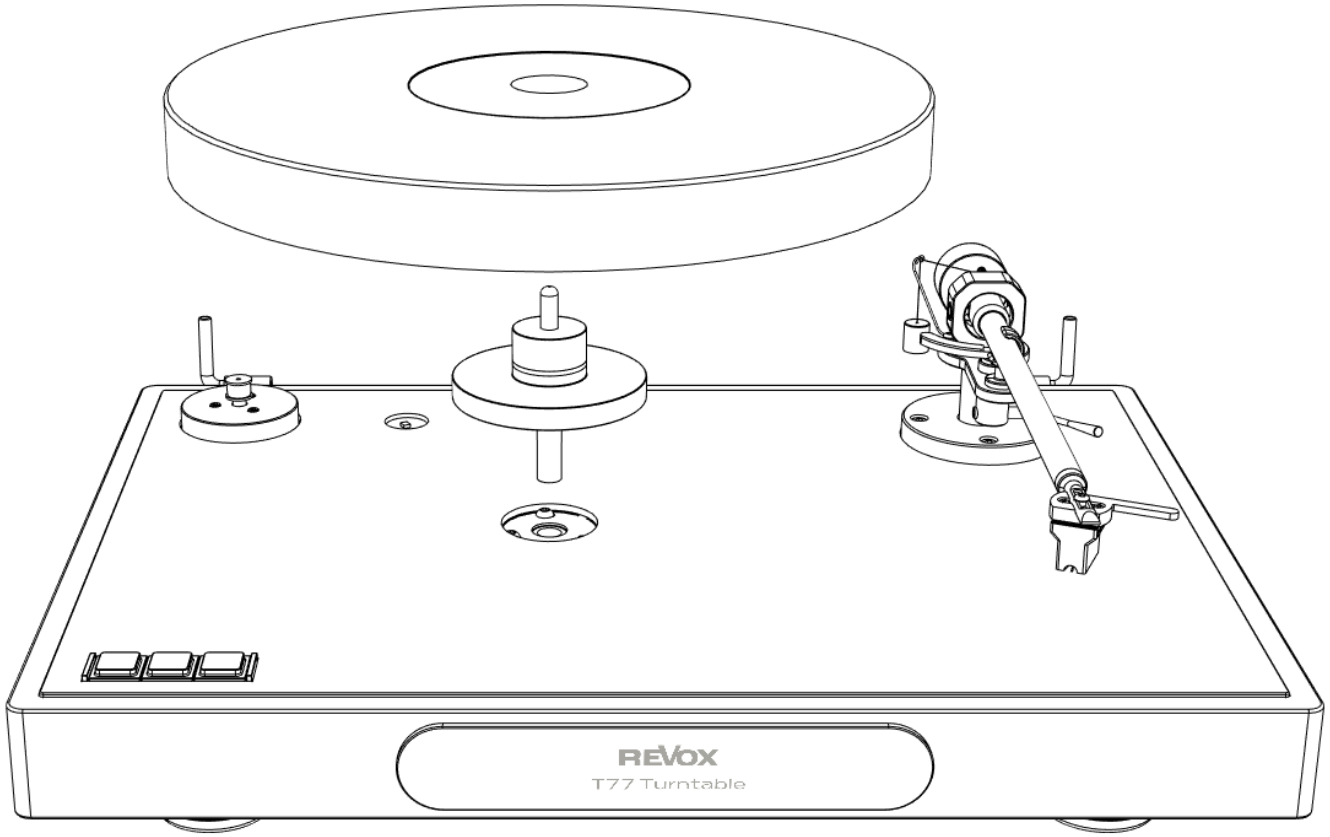
Caution: There is a loose, polished steel ball in the bearing bush that can fall out if you now turn the chassis 180°!

The aluminum sub-platter and the POM turntable are included as a single unit in the packaging. Remove the sub-platter from the turntable by applying light pressure to the steel axle. To be on the safe side, this should be done over a soft cushion so that the sub-platter is not damaged if it falls.

Once detached, the sub-platter② with steel axle can be inserted into the bushing① . Due to the tight fit, the sub-platter or axle will now slide very slowly into the bearing. The axle has been treated with a special oil at the factory prior to the running-in phase and does not require any further action, even after years of operation.

Now place the black turntable③ on the sub-platter② .

Note: There is a silver **reflector strip** (25 x 8 mm) on the underside of the turntable, which is used to operate the operates the optical sensor. This must not be removed under any circumstances, as otherwise the speed can no longer correctly.



Assembly step 3: Putting on the drive belt

When fitting the drive belt, you should wear the gloves provided to prevent grease/oil from getting onto the belt. The easiest way to do this is to first place the belt around the large turntable③ with both hands and then, applying a little tension, wrap it around the pulley④ (motor drive shaft). To ensure that the belt is applied evenly, turn the turntable a few times by hand until the belt is in the middle of the pulley.

Assembly step 4: Mount the tonearm weight on the tonearm

To mount the counterweight① , we recommend not loosening the transport lock attached to the tonearm mount② for the time being.

Remove the tonearm weight from the accessory box and place it flat on the thread of the tonearm. You can now "screw on" the tonearm weight by turning it clockwise with light pressure. The tonearm weight does not have an internal thread, but two inserted silicone rings that help to decouple it from the tonearm. A little pressure is therefore required until the first silicone ring "grips" the external thread of the tonearm.

Turn the tonearm weight until there is a distance of approx. 26 mm between the tonearm weight and the tonearm bearing, see illustration below. This distance corresponds to a tracking force of approx. 23 mN (2.3 g) when the *Ortofon Quintet Bronze/Black* cartridge is mounted. This is also the recommended tracking force for this system. Precise adjustment is carried out in a second step using the digital tonearm scale included in the scope of delivery.

Now remove the transport lock on the tonearm mount② .

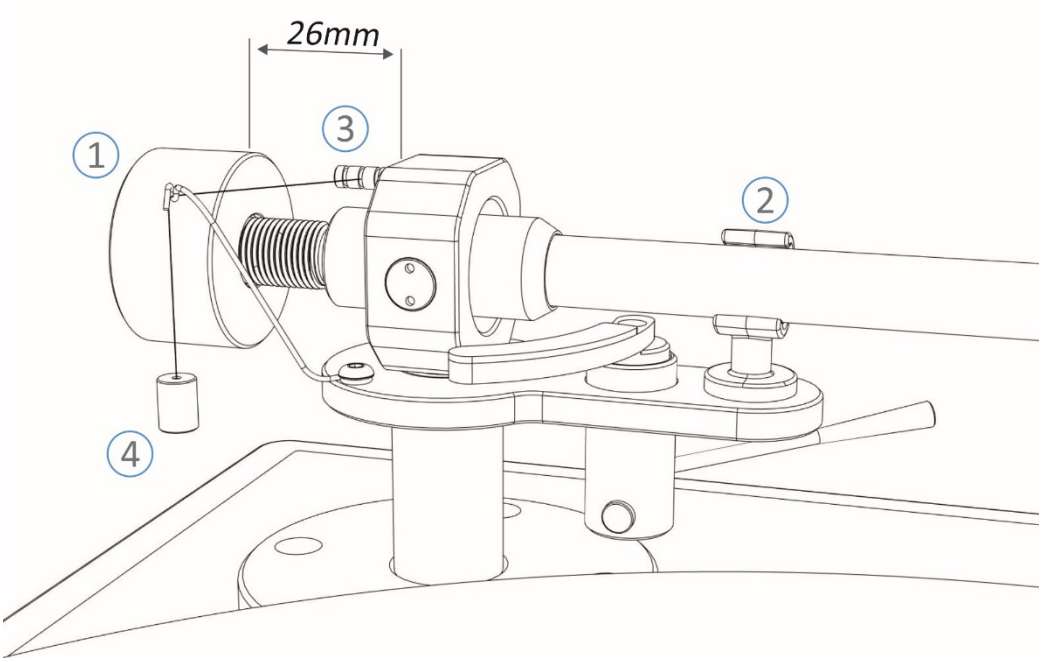


Fig.: Tonearm bearing with tonearm weight and anti-skating weight

Assembly step 5: Adjusting the tracking force with the digital scale

In this step, the recommended tracking force is set precisely using the digital tonearm scale. For the factory-fitted *Ortofon Quintet Bronze/Black* cartridge system, the tracking force should be 23 mN, which corresponds to approximately 2.3g at an altitude of 0-2000 m. To take the measurement, pull the protective cover horizontally off the tonearm scale and place the scale on the turntable (**without a record** and without **the anti-skating weight**).

Now remove the stylus guard from the cartridge. Switch on the scale using the "⏻ " button and lower the stylus directly into the center (marked point) of the scale using the tonearm lift. Based on the value displayed, you can now decide whether the tonearm weight needs to be screwed closer to the tonearm bearing (value is less than 2.3g) or whether the tonearm weight needs to be turned outwards (value is greater than 2.3g).

The tracking force of 2.3g recommended by Ortofon should be considered a guideline and can be adjusted within a range of ± 0.2 g according to your preferences. *Ortofon* itself specifies the possible range for the tracking force for the *Quintet Bronze/Black system* as 2.1 - 2.5 g.

A detailed description of the Revox tonearm balance can be found in the chapter *Tonearm Balance* on page 12.

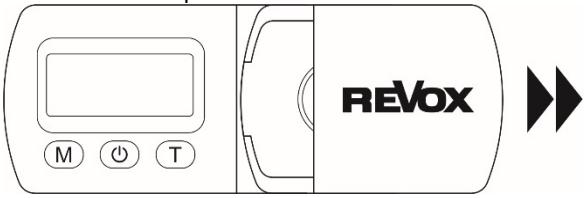


Fig.: Removing the protective cover from the tonearm balance

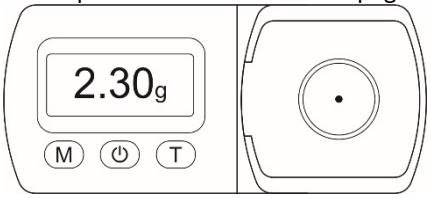


Fig.: Tonearm scale open

Assembly step 6: Attaching the anti-skating weight

The T700 has an anti-skating device in the form of a weight④ that generates a counterforce via a small pin③ on the tonearm bearing. This small weight is located in the accessory box and is attached to the pin with a small thread via a deflection unit. For the **5.0 g** anti-skating weight (diameter 9 mm), we recommend using the **middle groove** in the pin. If you have the smaller **1.8 g** anti-skating weight (diameter 6 mm), we recommend using the **outer groove**.

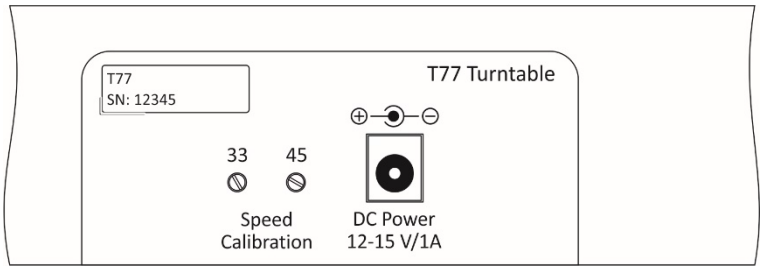
Note: The tracking force (assembly step 5) must always be determined **without** the anti-skating weight, as otherwise measurement errors may occur. It is also advisable to disconnect the T700 from the power supply to prevent unintentionally start the cartridge while the stylus is off the tonearm balance.
You can easily determine the weight of your anti-skating weight using the tone warm scale.

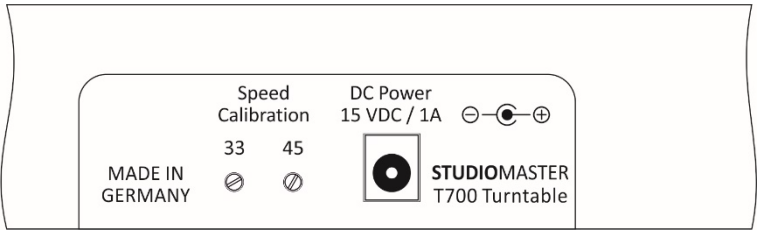
Assembly step 7: Connect the T700 / T77 turntable

In the final step, connect the T700 turntable to the power supply and the hi-fi amplifier.

Power supply:
The input socket for the external power supply unit, which is included in the scope of delivery, is located on the rear of the T700 / T77 turntable. Plug the barrel connector into the socket labeled ***DC Power***. Only the power supply unit supplied by Revox may be used. Power supply units from third-party manufacturers can cause damage and malfunctions that are not covered by the warranty.

Technical data for power supply unit: Input 100-240 VAC / 50-60 Hz
Output 12 - 15 VDC / min. 1A





Audio connection:
The T700/ T77 has an internal, high-quality MC phono amplifier that is preconfigured at the factory for the *Ortofon Quintet Bronze/ Black* pickup system.

T700 Turntable
The T700 outputs a stereo audio signal at line level from the *analog line output* RCA jacks. This means that the T700 can be connected directly to any analog input on an amplifier, receiver, or Revox audio bar without the need for a separate phono preamplifier. These inputs are usually labeled *Line-IN, Analog Input, Aux, CD, Tuner, or Tape.*

T77 Turntable / T700 PRO
The output level of the T77 is based on the studio standard and is 1.55 V when the +6 dBu DIL switch is in the ON position or 0.775 V when the DIL switch is in the 0 dBU position. The XLR outputs allow the T77 / T700 PRO to be connected directly to mixing consoles or other studio equipment. Amplifiers with a balanced XLR input can also be connected directly and benefit from the virtually interference-free transmission. If there are no XLR inputs on the partner side, the audio signal can be output unbalanced using the XLR-RCA adapters included in the scope of delivery. If the level of the turntable is significantly lower than other audio sources, the output voltage can be doubled to 6 dBu using the ***Level OUT*** DIL switch – see the section on output levels on page 12.

Note: The T77 / T700 must **not** be connected to an MC or MM input on an amplifier!

A separate ground wire, as is common with turntables without an integrated phono preamplifier, is not necessary with the STUDIOMASTER T700. Due to the amplified signal at line level, the risk of interference is no longer as critical as with turntables without a preamplifier. For audiophile reasons, Revox nevertheless recommends using a high-quality, well-shielded RCA cable. Your dealer can advise you on this matter.

Figure: T700 RCA output

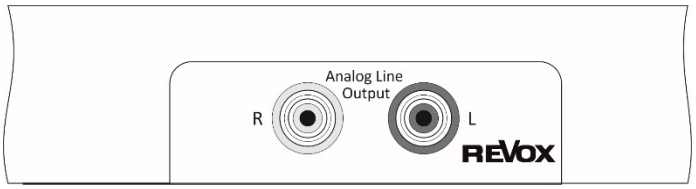
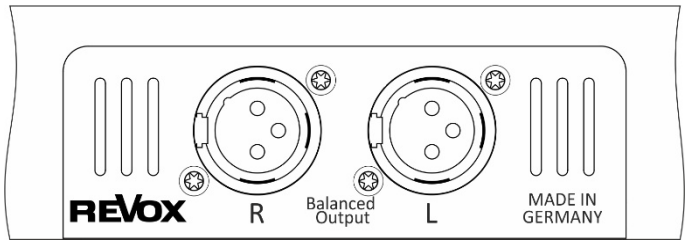


Figure: T77 XLR output



Operation

Test after installation

Before playing your first record, you should perform a test after installing the T700. Connect the T700 to the power supply; the STOP button⊡ on the glass surface will light up red. The tonearm is in its holder and the stylus guard below the cartridge has been removed.

Now start the turntable at low speed by touching the33 button on the surface. The turntable will start to rotate immediately. Until the target speed of 33 ⅓ revolutions per minute is reached, the light under the33 button will flash. Once the target speed is reached, the button will light up continuously.

For clarity, the button is labeled only with the number 33, but the speed is of course regulated to exactly 33 ⅓.

In the next step, the higher speed of 45 revolutions per minute can be tested by touching the "45 " button. Here, too, the light under the "45 " button flashes until the target speed is reached.

In both cases, the target speed should be reached after 3-6 seconds. If it takes longer, the speed control should be readjusted using the **calibration routine**. This is done on the rear of the T700 using the two adjustment screws of the spindle trimmer next to the power supply. A detailed explanation can be found in the chapter "*Target speed setting*" on page 10.

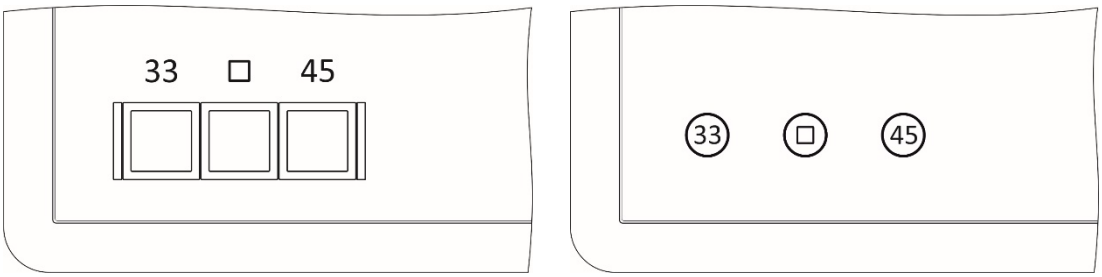


Fig. 1: T77 keypad or T700 touch panel with start/stop buttons

Finally, the horizontal alignment of the installation site for the T700 can be checked using the box level included in the scope of delivery. The box level (Fig. 2) is located in the accessory box and is simply placed on the surface to be checked. The air bubble should be in the range of the 1° mark.

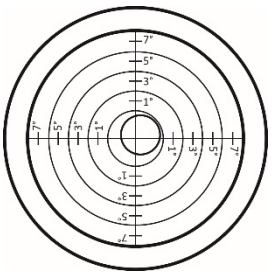


Fig. 2: Spirit level

Playing a record

After this test, you can now play a record. Please note the specified speed at which the record was pressed. As a rule, long-playing records with a diameter of 30 cm require a speed of 33 ⅓ revolutions per minute, while smaller single records with a diameter of 7 inches (17.5 cm) require a speed of 45 revolutions per minute. The speed is often also described as *the playback speed*.

For small 7-inch records, you will need a single adapter/puck (not included), which reduces the large inner diameter of a single from 38.1 mm to the regular 7 mm spindle in the center of the turntable. Alternatively, there are plastic clips that can be clipped on and remain permanently in the single.

- ⓘ A single adapter can be safely stored in the accessory box in the compartment of *the spirit level*.
- ⓘ An incorrectly selected speed will not cause damage to either the stylus or the cartridge, but will result in the music being played at the wrong pitch; this is known as the "Mickey Mouse effect."

Note on turntable mat

The turntable of the T700 is made of POM plastic, which has very low resonance and can be used without a turntable mat. However, if you are a fan of turntable mats, you can of course use one. Please note that the height adjustment of the tonearm may need to be adjusted to the increased position of the record.
How to do this is described in the chapter *Adjusting the tonearm height* on page 11.

Cleaning the record

Before starting playback, the record should be cleaned with the turntable brush. Dust on the record causes crackling noises during playback and can settle on the sensitive stylus.

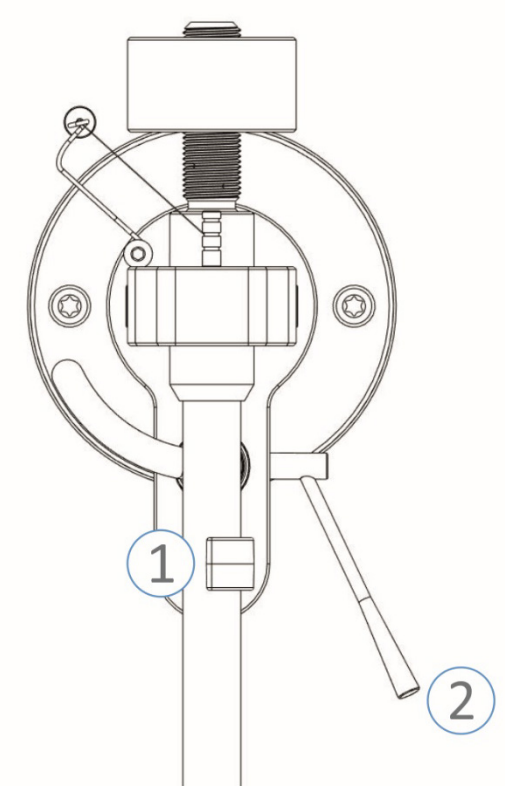
A carbon fiber turntable brush is included with the T700 and can be found in the accessory box. Place the brush vertically on the rotating record, with the brush pointing toward the center of the record, similar to the second hand of a clock. Leave the brush on the record for a few seconds and then slowly pull it outwards. Repeat this process if necessary until no dust particles are visible on the record.

To clean the brush, simply swipe the carbon fiber comb over the bar in the brush frame. Compressed air from a can (photo accessory) helps to thoroughly clean the brush.

Caution: Please do not use compressor air, as it contains fine oil particles.
The carbon fibers should not be touched so that no grease film can stick to them.

Start playback

Once the record is spinning at the correct speed, check that the tone arm lift is in the upper position. To do this, swing the lift lever② from the lower position (fig. left) to the upper position. The lift slides up to just below the tone arm. Now grasp the system carrier (colloquially known as *the headshell*) and pull the tone arm out of the tone arm holder① to the left over the lead-in groove of the record. The lead-in groove is located on the outer diameter. Now lower the tone arm using the lift lever② and the music will start to play.



Stopping playback

The T700 does not have an automatic stop function. When the record has finished playing, the needle remains in the run-out groove and the turntable continues to rotate until the stop button⊡ is pressed. When the turntable is at rest, use the lift lever to raise the tone arm again and then manually return it to the tone arm holder① . The tone arm lift may remain in the upper position, as when correctly adjusted, it does not exert any pressure on the tone arm when it is in the holder.

Caution
When not playing records, the tonearm should always be "parked" in its holder.
If the stylus remains in the groove for days or weeks, damage to the stylus bearing may occur, reducing the scanning capability.

ⓘ The run-out groove is located near the center of the record.

Basic settings and maintenance

Liability

Correct adjustment of the mechanical components of a T77/T700 turntable requires experience and expertise. Revox cannot accept any liability for damage caused by personal handling. If in doubt, please always contact your dealer!

Phono preamplifier

The integrated phono preamplifier is designed for MC (moving coil) cartridges. For these systems, it can be adjusted very precisely to the sensitivity (gain) and the recommended termination resistance.
Revox uses only gas-tight DIL switches for the configuration, which can be adjusted with a small miniature screwdriver. Unlike DIL switches, other switch systems, such as toggle switches or relays, cannot guarantee the required contact reliability over many years.
The tonearm cable is soldered by hand directly to the input of the phono preamplifier. This ensures that the interference-sensitive audio signal reaches the phono amplifier via the shortest possible route.

The phono preamplifier is located on the underside of the T77/T700 in the area of the two output sockets. For safety reasons, the turntable and sub-platter should be removed when setting the DIL switches if the turntable is positioned on its side. The tonearm should be in the tonearm holder.

Important All DIL switches must always be set to the same values in mirror image.
This is the only way to ensure that the left and right audio channels behave identically.

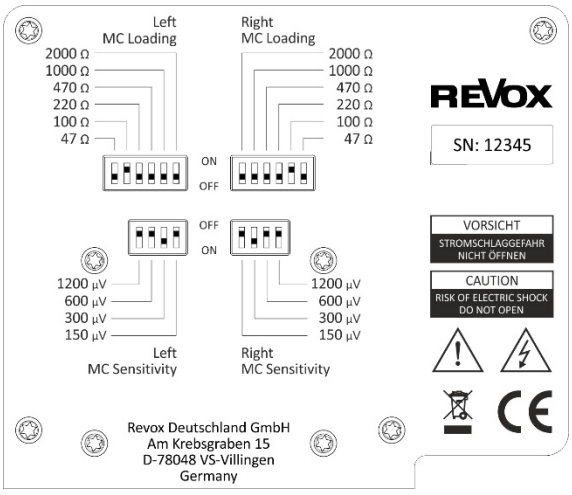


Fig. 1: Integrated phono preamplifier on the underside of the T700

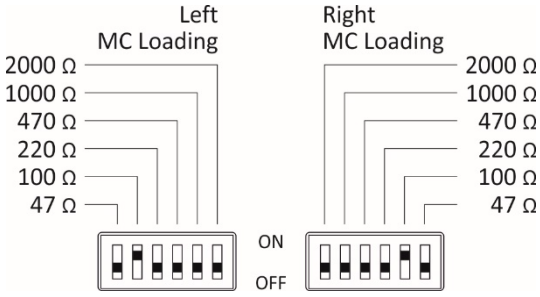


Fig. 2: Factory setting for *terminating resistor*

Terminating resistor (MC loading)

The two 6-pin DIL switches can be used to adjust the terminating resistor to the pickup in the range from 47 to 2000 Ω. There are 6 absolutely low-noise Susumu resistors to choose from, which can be used individually or in parallel. If only a single resistor is selected with the DIL switch, i.e., the DIL switch is in the ON position, the printed value is the terminating resistor. In the case of the *Ortofon Quintet Bronze/Black* pickup system, Revox has chosen a value of 100 Ω – see Fig. 2.
Intermediate values can also be achieved by connecting two or more DIL switches in parallel.

The general formula for this is:

$$\frac{1}{R_{ges}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots$$

For two DIL switches, the formula is:

$$R_{ges} = \frac{R_1 \cdot R_2}{R_1 + R_2}$$

Example: DIL switches 100 Ω and 470 Ω are in the ON position, resulting in a terminating resistor of approx. 82 Ω

$$R_{ges} = \frac{470 \cdot 100}{470 + 100}$$

$$R_{ges} = 82{,}5\ \Omega$$

The lowest terminating resistance is achieved when all 6 DIL switches are in the ON position. This results in a value of approx. 25.3 Ω. The highest terminating resistance of 2000 Ω is achieved when only the 2000 Ω DIL switch is in the ON position.

Sensitivity (MC Sensitivity)

The phono amplifier can be adjusted to different sensitivities of MC systems. There are 4 levels to choose from for output voltages of 150 µV, 300 µV, 600 µV, and 1200 µV. The sensitivity is used to set the gain of the phono preamplifier and thus the output voltage of the audio signal.

Equalization is performed according to the RIAA (Recording Industry Association of America) characteristic curve.

Attention: DIL switch

Contrary to the selection of terminating resistors, **only 1** DIL switch may be in the ON position when setting the sensitivity. A mixture of different sensitivities is not permitted.

The phono preamplifier is factory set to the *Ortofon Quintet Bronze/Black system*, which provides an output voltage of 300 µV (0.3 mV at 1000 Hz, 5 cm/sec.) – see illustration on the right.

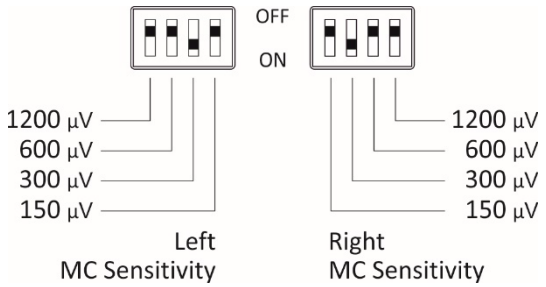


Fig.: Factory setting *sensitivity T700*

Gain factor

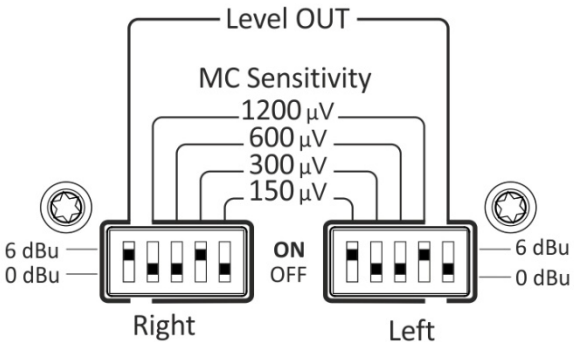
If you want to correctly adjust your pickup using the gain factor (dB @ 1 kHz), you will find the corresponding values here. These values are printed on the bottom of the T77 phono preamplifier.

1200 µV = 56 dB (1 kHz)
600 µV = 62 dB (1 kHz)
300 µV = 68 dB (1 kHz)
150 µV = 72 dB (1 kHz)

Output level *Level OUT*

The T77 and T700 PRO offer the special option of adjusting the output level in two stages. The outer DIL switch *Level OUT* can be used to set the nominal output level between 0 dBu and 6 dBu. 0 dBu corresponds to a voltage value of 0.775 V (effective). In the 6 dBu position, the voltage doubles to 1.55 V.

If the included XLR-to-RCA adapters are used to connect the T77 / T700 PRO to an amplifier without an XLR input, the 6 dBu setting usually results in the correct output level.



Target speed setting

The tonearm of the STUDIOMASTER T700 turntable is factory-set for the pre-mounted *Ortofon Quintet Bronze/Black* cartridge system. This includes parallel alignment of the tonearm to the turntable, adjustment to the two angle-neutral fixed points, and azimuth alignment of the cartridge (colloquially known as the pickup). Furthermore, the PLL circuit, which is implemented via optical scanning below the turntable, is set to the target speeds of 33 ⅓ and 45.
Over the years, wear and aging may make it necessary to readjust the target speed. This can be recognized if it takes more than approx. 6-8 seconds to reach the target speed after starting.
Calibration is performed separately for each of the two target speeds. All you need for calibration is a miniature/watchmaker's screwdriver with a width of 2.5 mm. The setting is made on the back of the T700 in the ***Speed Calibration*** section.

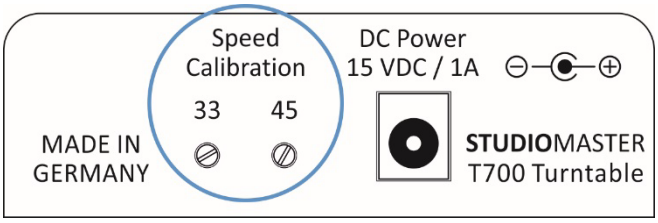


Fig. 1: Rear of T700 with speed controller 33 or 45

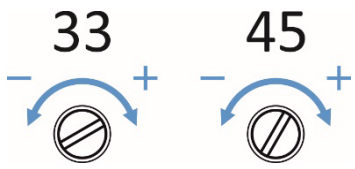
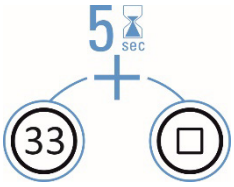


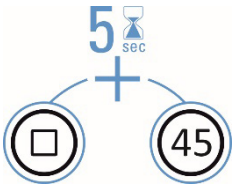
Fig. 2: Speed change

Calibration Target speed



Start the calibration procedure for 33 ⅓ revolutions per minute by pressing and holding the two buttons " ㉝ " and "□ " together for approx. 5 seconds. The two button symbols will now start to flash.
Now take the miniature screwdriver and turn the spindle trimmer on the back of the T77/T700 in one direction and observe the pulsing button for a moment. The result will only become apparent after 2-4 seconds!

If the button pulses faster, you have moved further away from the target speed and must turn in the other direction. The minimum deviation from the target speed is reached when the button lights up continuously.
You can now complete the calibration by pressing the stop button□ .



In the second step, proceed in the same way with the target speed of 45 revolutions per minute by pressing and holding the two buttons㊺ and□ together for approx. 5 seconds.

Replacing the cartridge

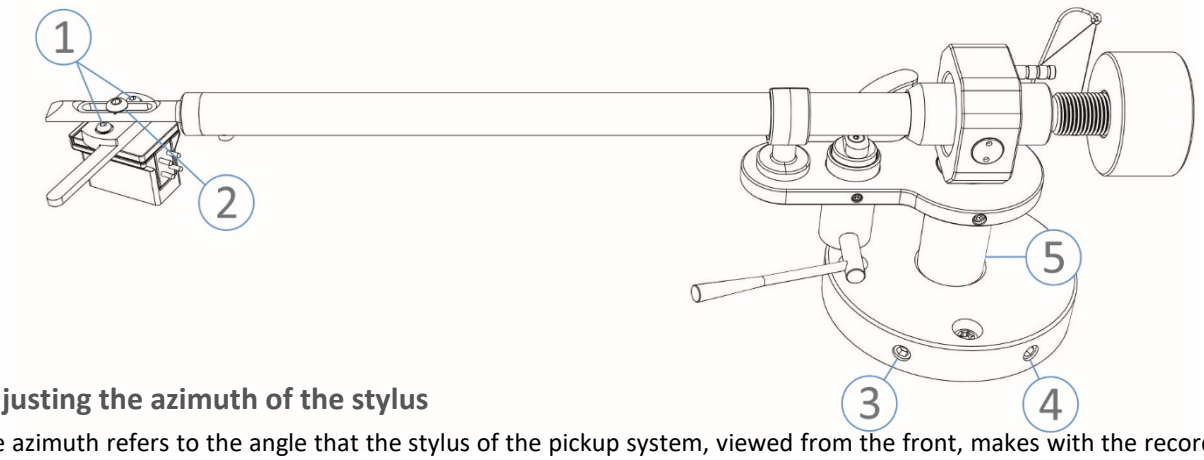
The pickup system should be replaced after 500-800 hours of operation. If another *Ortofon Quintet Bronze/Black* is used as a replacement, the conversion is very simple. The stylus guard should be attached for removal. First, use tweezers to disconnect the 4 connection wires from the sound carrier. Then use the enclosed SW 2.0 Allen key to loosen the two screws① in the system carrier until the pickup can be removed. To install the new system, follow the steps in reverse order.
When changing to a system with different mechanical dimensions, it is necessary to readjust the zero crossing, tonearm height, anti-skating, and tracking force. The cartridge can be adjusted to the correct zero crossing using the screw② (Torx TX10 or Allen SW 2.0). This requires a tonearm adjustment template, such as those available from Schön, Ortofon, or similar manufacturers.

Adjusting the tonearm height

The height of the T77/T700 tonearm can be adjusted if necessary. This may be necessary if, for example, a different pickup system is installed or if a turntable mat is used.
The tonearm is already correctly adjusted to the *Ortofon Quintet Bronze/Black* when delivered and does not require any adjustment. This assumes that the record is placed directly on the black turntable **without** a turntable mat.

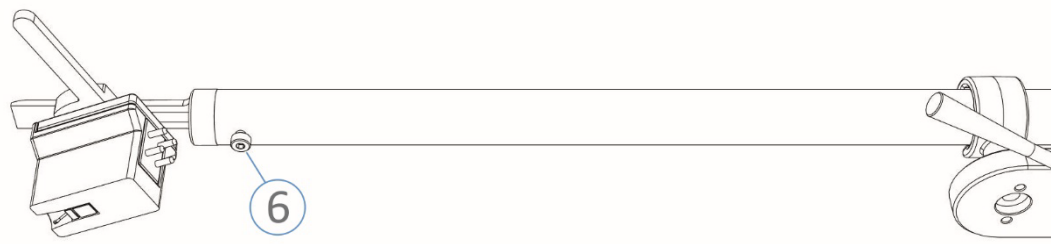
The height of the tonearm can be adjusted by loosening the two hexagon socket screws③ and④ on the tonearm base and adjusting the height of the tonearm tube⑤ vertically. A SW 3.0 wrench is required for the two hexagon socket screws. This can be found in the accessory box; it is the largest of the three hexagon socket wrenches.

The correct height is achieved when the tonearm is parallel to the record when lowered. You can quickly and easily check the parallelism by placing two small blocks, e.g., Lego or Fischertechnik building blocks, on an old record underneath the tonearm. The further apart the blocks are placed, the more accurately you can detect any misalignment. Once the correct tonearm height has been determined, the two SW3.0 hexagon socket screws are tightened again with light force.



Adjusting the azimuth of the stylus

The azimuth refers to the angle that the stylus of the pickup system, viewed from the front, makes with the record. It should be exactly 90 degrees to the groove/record. The T700 is delivered with the azimuth already correctly set to 90°.
The azimuth is adjusted by turning the headshell in the tonearm tube. To do this, loosen the small cylinder screw (⑥) using a 1.5 hex key (see illustration below).



The azimuth is set correctly when the pickup system/needle is exactly perpendicular to the surface of the turntable. With the *Ortofon Quintet Bronze/Black* pickup system, the azimuth can be determined very easily with the aid of a small makeup mirror placed under the pickup. Viewed from the front, any slight difference/misalignment in the horizontal plane can then be seen very clearly. After the adjustment process, carefully tighten the small screw again by hand.

Tonearm scale

For precise determination of the tracking force, Revox supplies the T700 with a digital tonearm scale in the accessory box. This allows you to set the tracking force recommended by the cartridge manufacturer to an accuracy of 0.01 g. A 5.0 g test weight is included in the accessory box for checking the measuring accuracy.
The weighing plate is very sensitive and therefore has a protective cover that can be pulled off to the right. The protective cover should be used when the scale is not in use.

The tonearm scale has 3 buttons with the following functions:

(M) **Measurement**
Switch between different units of measurement for weight.

(⏻) **Power**
Turns the tonearm scale on or off. An automatic shut-off function after approx. 120 seconds is available.

(T) **Tare**
This button can be used to perform a zero calibration. To do this, the scale must be placed on a flat, horizontal surface. Pressing and holding the tare button sets the currently measured weight to 0.
After resetting the supplied test weight, the tonearm scale should display a value of 4.98–5.02 g.

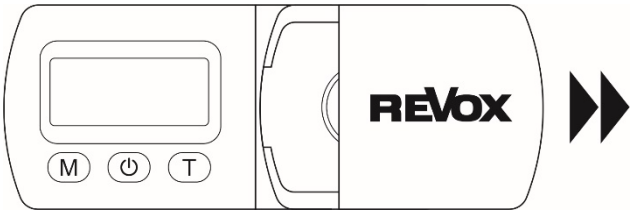


Fig.: Remove the protective cover from the tonearm scale

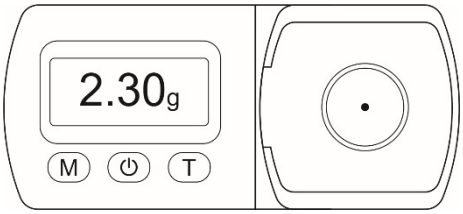


Fig.: Tonearm scale open

Calibration
Calibration should only be performed if there are problems determining the tracking force or if the enclosed test weight of 5.00 g is not displayed correctly.
Procedure: Turn on the scale using the power button (⏻) and wait until the scale displays 0.00 g. Now press and hold down the power button (⏻) until **- 0 -** is displayed. Wait until the scale flashes to indicate the required test weight of **5.00 g** by **flashing**. Now place the enclosed 5g test weight on the scale. The display will now show 5.00 g **continuously** and end the calibration process with the display **PASS**. When you remove the test weight, 0.00g will appear. Calibration is now complete.

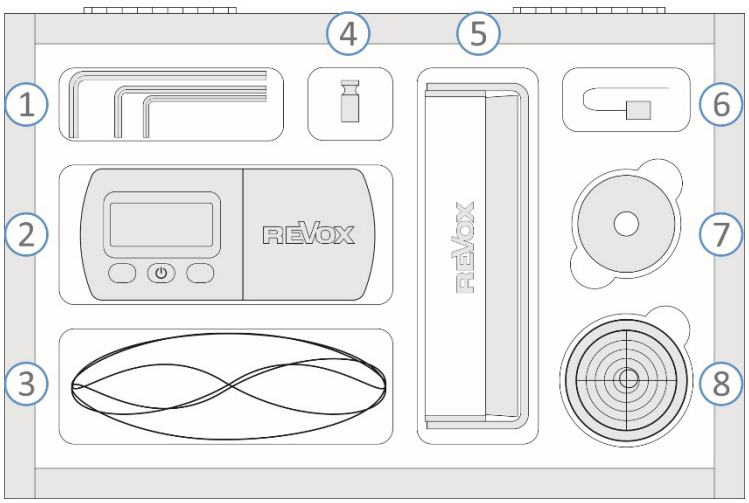
Technical data

Measuring range:	0 – 5.00 g
Units of measurement:	Gram [g], Ounce [OZ], Grain [GN], Carat [Ct], Tael [TL], Ounce [ozt]
Batteries:	2 x 1.5 V lithium batteries, e.g. LR43, AG12, 186

Accessories

The Revox Turntable (except BASIC) comes with a high-quality accessory box that holds both the sensitive turntable components, such as the tonearm weight, and the adjustment and care products for playing records.

1) Hexagon socket 1.5 mm (e.g. Azimut)
   Hexagon socket 2.0 mm (system change)
   Hexagon socket 3.0 mm (tonearm height)
2) Tone arm scale
3) Drive belt
4) Control weight for tonearm scale [5g]
5) Record brush
6) Anti-skating weight
7) Tonearm weight
8) Can level



Technical data T77/ T700

MC phono preamplifier

Frequency response:	7 Hz ... 80 kHz (-3dB)
Signal-to-noise ratio:	- 69 dB (20 Hz ... 20 kHz)
Distortion:	0.005
Channel deviation:	0.2 dB
Channel separation:	greater than 80 dB
Subsonic filter:	10 Hz with 1st order high pass (6 dB filter)
RIAA accuracy:	± 0.2%
Impedance matching:	6 levels: 47 Ω, 100 **Ω***, 220 Ω, 470 Ω, 1 kΩ, 2 kΩ (intermediate values possible through parallel connection)
Input sensitivity:	4 levels: 150 µV, 300 **µV***, 600 µV, 1200 µV
Gain factor (1kHz):	4 levels: 56 dB (1200 µV), 62 dB (600 µV), 68 dB (300 µV), 74 dB (150 µV)
Output level (studio level):	0.775 V (0 dBu) / 1.55 V (+6 dBu) (XLR output T77/T700 PRO)

* Factory preset values for the *Ortofon Quintet Bronze/Black* MC system

m tonearm

Tone arm with gimbal mount

Tone arm tube material:	carbon
Effective length:	237.6 mm (9.35 inches)
Overhang:	15 mm (variable)
Crank angle:	23.96° (fixed)
Dynamic mass:	11 g

Platter weight*

Weight:	270 g
Diameter:	82 mm
Height:	40 mm
Material:	Full aluminum, anodized

* Scope of delivery T77

Pickup

Model:	Ortofon Quintet Bronze/Black
Output voltage:	0.3 mV (1000 Hz, 5 m/s)
Frequency response:	20–25,000 Hz (-3 dB)
Channel deviation:	< 1.0 dB
Crosstalk attenuation:	> 23 dB (1 kHz)
Crosstalk attenuation:	> 15 dB (15 kHz)
Tracking ability	80 µm (at tracking force 2.3 g)
Needle compliance:	15 µm/mm
Scanning diamond: *x*	Fine Line, bare *bronze* Shibata on sapphire cantilever, bare *black*
Rounding:	r/R 8/40 µm *bronze* r/R 6/50 µm *Black*
Contact force range:	21 – 25 mN (2.1 – 2.5 g)
Recommended contact force:	23 mN (2.3 g)
Scanning angle:	20 degrees
Resistance (DC):	5 ohms
Weight:	9 g

T700 Turntable BASIC, T700 Turntable

Speed:	33⅓ / 45 revolutions per minute
Synchronization:	< 0.1%
Connections:	Line output Analog (RCA stereo)
	DC power socket
Dimensions:	470 x 337 x 156 mm (WxDxH) without sockets
Protrusion (rear):	16 mm (hinge, RCA sockets)
Power	0.2 W (standby after 30 sec.)
	2.7 W (33⅓ or 45 rpm)
Mains voltage:	100 - 240 VAC / 50-60 Hz
Supply voltage T700:	12-15 VDC = / min. 1 A
Weights:	10.3 kg total
	2.85 kg POM (polyoxymethylene) platter
	0.21 kg sub-platter aluminum
	5.0 g (anti-skating weight∅ 9 mm - for medium groove)

Drive T77, T700 Turntable PRO

Speed:	33⅓ / 45 revolutions per minute
Accuracy:	< 0.1%
Connections:	Balanced analog output (XLR stereo)
	DC power socket
Dimensions	470 x 337 x 160 mm (WxDxH) without sockets
Protrusion (rear):	16 mm (hinge, RCA sockets)
Power	0.2 W (standby after 30 sec.)
	2.7 W (33⅓ or 45 rpm)
Mains voltage:	100 - 240 VAC / 50-60 Hz
Supply voltage T700:	12-15 VDC = / min. 1 A
Weights:	11.5 kg total
	2.85 kg POM (polyoxymethylene) platter
	0.21 kg sub-platter aluminum
	3.6 g (anti-skating weight T77)
	5.0 g (anti-skating weight T700 PRO,∅ 9 mm - for medium groove)

REVOX
Studio Sound Quality

Contact

Germany
Revox Deutschland GmbH
Am Krebsgraben 15, D 78048 VS-Villingen
Tel +49 7721 8704 0
info@revox.de
www.revox.de

E&EO