

# THORENS

## BEDIENUNGSANLEITUNG INSTRUCTION MANUAL MODE D'EMPLOI



## TD 524

## Introduction

The THORENS TD 524 is a professional direct drive discotheque turntable.

The unit has been developed by THORENS to provide disc jockeys, dance teachers, and professionals with the technology and features required for optimum turntable utilization.

The extremely severe demands imposed by discotheques have necessitated new approaches to realizing optimum music reproduction in such applications. The controls and features have been designed with the cooperation of several renowned disc jockeys, while the acoustical performance of the unit has been optimized with tests in the largest discotheques in Europe.

The heavy suspended cast-metal chassis is mounted in a solid wood base. Specially tuned spring elements serve to inhibit solid-borne disturbances and feedback. Compensation elements eliminate rotational oscillations during quick starts. The turntable platter is 330 mm in diameter and affords a rim for cueing. The moment of inertia of the platter is 200,000 g-cm<sup>2</sup>. The mat is fabricated of natural rubber to provide high damping, thereby suppressing vibrations of the platter and the record.

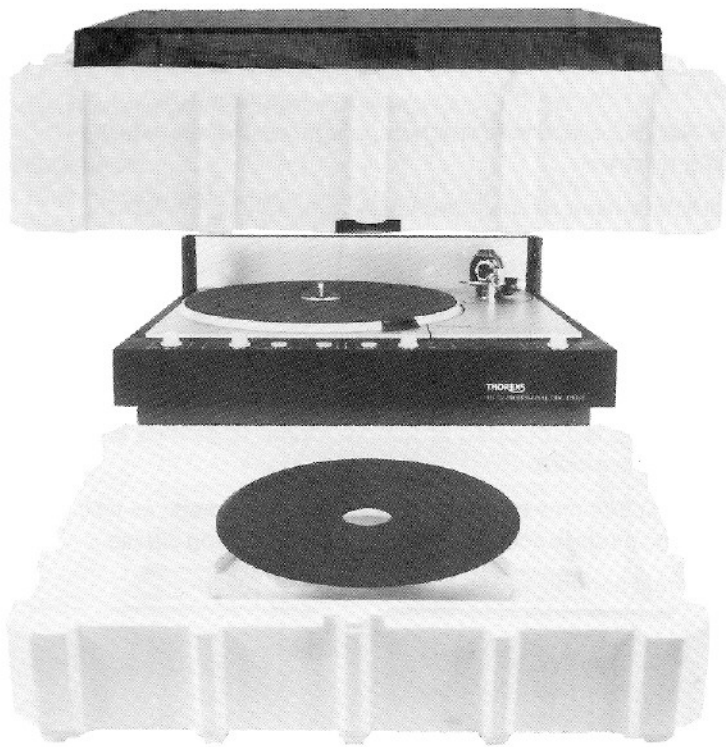
When the THORENS TP 16 L Tone Arm is mounted, the TD 524 may be operated as a semi-automatic as well as a manual turntable. Electronic indication of the operating mode is accomplished with light-emitting diodes.

All essential operating functions may be activated by remote control.

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Bild/Figure 2

## I Unpacking

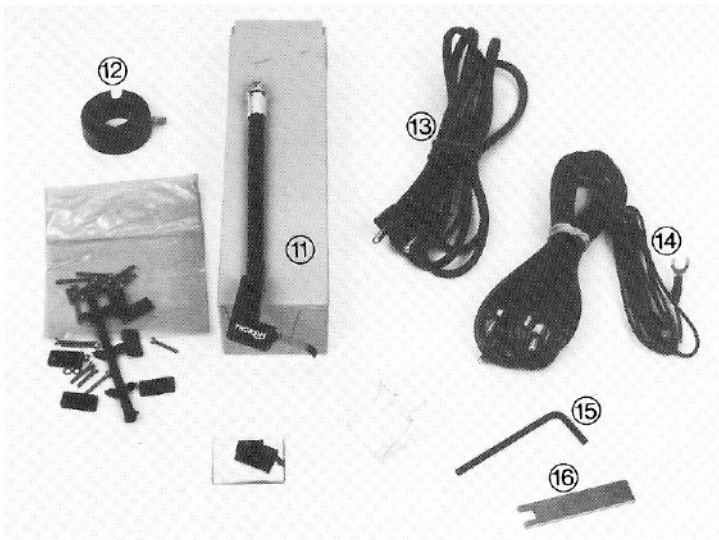
The arrangement of the packed discotheque turntable is shown in Figure 2.

The upper styrofoam packing may be easily removed by grasping into the recesses on either side and lifting straight up.

The turntable may now be taken out of the lower styrofoam packing.

**Do not use the tone arm assembly as a handle!**

The rubber mat is located under the turntable in the lower styrofoam packing.



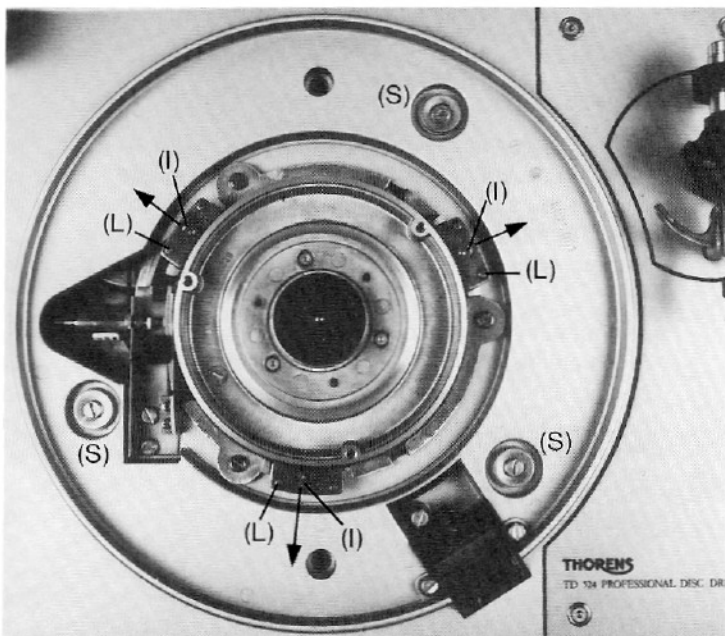
Bild/Figure 3

The upper styrofoam packing contains the following turntable components (Figure 3):

- the dust cover
- the hinged storage case with the TP 63 (11) Cartridge Wand and all accessories, including (if delivered with the turntable) the mounted pickup cartridge.
- the tone arm counterweight (12)
- the mains power cord (13)
- the audio signal cable with grounding wire (14)
- a 3 mm Allen wrench (15)
- a special screwdriver for dustcover hinge adjustment (16)

The envelope of moisture-absorbing material found in the plastic packing bag of the turntable rapidly loses its effectiveness upon contact with the open air. It may therefore be discarded.

Save all packing materials for possible reshipment or transport at some later date.



Bild/Figure 4

## II Assembling the turntable

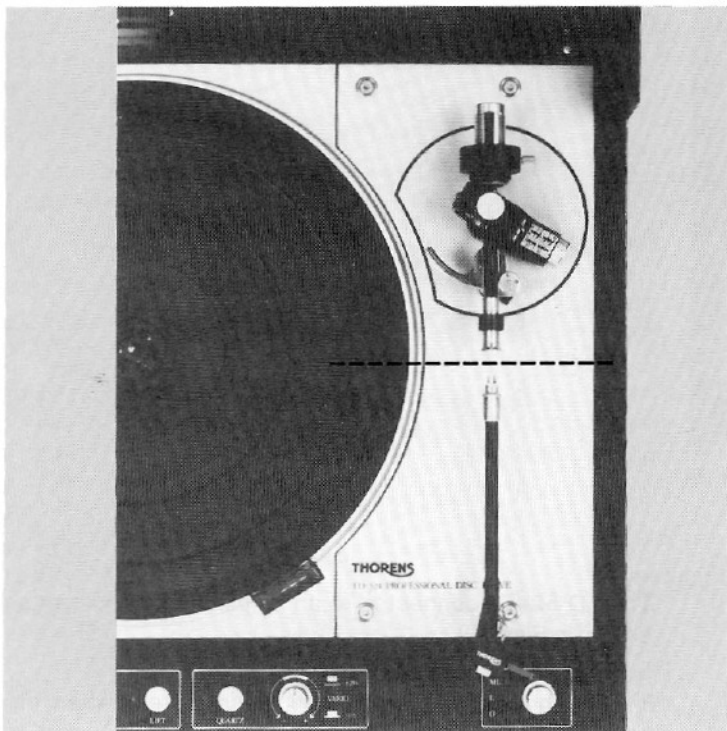
Before the unit is placed into operation, the transport locks of the motor and of the chassis must be released. The turntable platter is to be unscrewed and removed for this purpose with the 3 mm Allen wrench (15) included in the accessories.

Loosen the Allen screws (I) coded in red and push the motor locking strips (L) outward in the direction of the arrows. Secure the locking strips in this position by retightening the Allen screws. The rotor of the motor must rotate freely.

Figure 4.

To release the suspended chassis, loosen the screws (S) until the stop is reached. Do not employ force.

Remount the turntable platter, retighten the screws, and set the rubber mat onto the platter.



Bild/Figure 5

The TP 16 L Tone Arm consists of the bearing assembly and the TP 63 Cartridge Wand (Figure 5). Plug the cartridge wand with installed pickup cartridge into the front of the bearing assembly and secure with the knurled collar. For greater versatility, e.g., when other tone arms are employed, the height of the tone arm lift platform may be adjusted. The knurled screw on the shaft is to be loosened for this purpose. The mounting of a pickup cartridge in the cartridge wand is treated in Section IV.

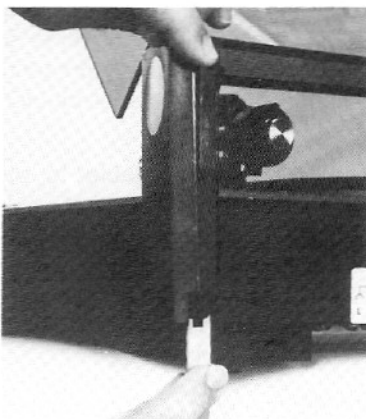
Tighten the counterweight (12) temporarily into position at the rear end of the tone arm by means of the knurled screw.

Remove the dust cover from the upper styrofoam packing and fit it into the hinges. To adjust the dust cover, the tension of the hinge springs may be changed by turning the knurled and slotted nut at the lower end of the hinge with the special screwdriver (16) including in the upper styrofoam packing (Figure 6).

Unsnap each hinge cover by pressing on its rear edge, and remove sufficiently to allow the knurled nut to be adjusted with the special screwdriver (16) (Figure 6).

Should the dust cover rest on only one of the two front corners, the tensions of the two hinge springs are unequal and must be readjusted with the knurled nuts.

The turntable should be installed in a location allowing the dust cover to be opened freely. Avoid the immediate vicinity of heating units.



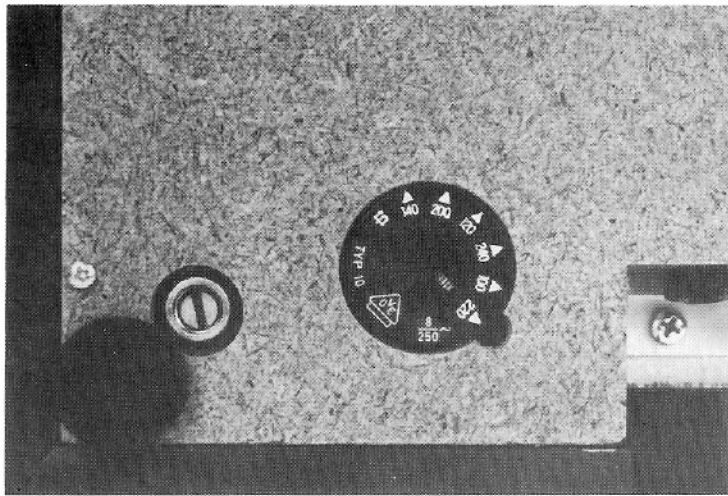
Bild/Figure 6

### III Electrical Connections

Before the turntable is connected to the mains supply with the power cord delivered with the unit, make sure that the local mains voltage corresponds to the voltage indicated on the mains selector switch. Should the selected voltage differ from the local mains voltage, switch the selector to the appropriate voltage with a screwdriver or a coin.

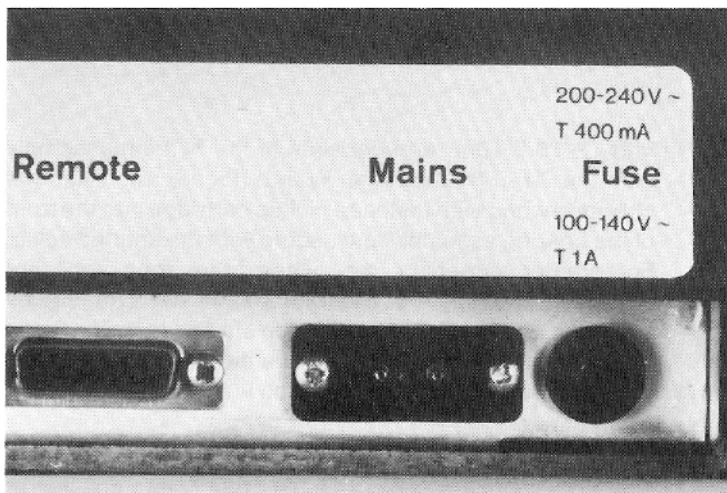
The mains selector switch is located on the underside of the unit (Figure 7). The following voltages may be selected::

100, 120, 140, 200, 220, 240 Volts, 50 or 60 Hz.



Bild/Figure 7

For the 100-140 Volt range, a 1 Ampere slow-blow fuse is required; for 200-240 Volts, a 400 milliampere slow-blow fuse.

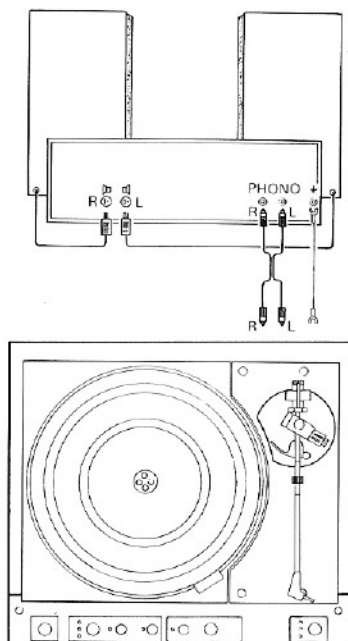


Bild/Figure 8

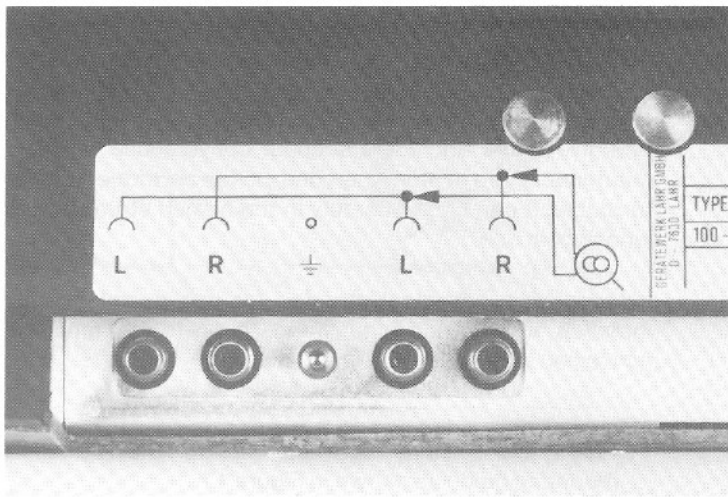
The TD 524 is connected to an amplifier or a receiver as shown in Figure 9.

If hum should be heard in the loudspeakers when the turntable is in use, check that the cartridge wand is firmly attached to the bearing assembly and that the connections to the amplifier or receiver and to the pickup cartridge are secure. Hum may also be produced by the close proximity of amplifiers or other appliances. Your THORENS dealer or service representative should be consulted if hum-free performance cannot be achieved.

When connecting the turntable to other hi-fi equipment, care should be taken that mains transformers incorporated within any ancillary units be not situated too close to the pickup cartridge. Magnetic cartridges are sensitive to the influence of magnetic fields of mains transformers and may produce hum as a result.



Bild/Figure 9



Bild/Figure 10

The coaxial stereo signal cable delivered with the unit is fitted at both ends with RCA phono plugs that are designated with "L" for the left channel and "R" for the right channel.

Magnetic pickup cartridges will deliver proper high-frequency response only when connected to the appropriate load impedance (capacitance and resistance).

A second phono jack is connected in parallel to each of the output jacks, "L" and "R" (Figure 10). Adapter plugs with the required parallel capacitance may be inserted for different pickup cartridges, thus enabling optimum matching to be achieved. The load resistance is generally determined by the amplifier.

The proper load impedance is indicated in the data delivered with the pickup cartridge. It is to be noted that the capacitances of the tone arm, the connecting cable, and the amplifier input add together to produce the total capacitance.

The tone arm capacitance per channel of the TD 524 is 35 pF at the audio output jacks; the capacitance of the connecting cable delivered with the unit is 48 pF, resulting in a total capacitance of 83 pF per channel. The difference between this value and the capacitance recommended by the cartridge manufacturer is the required additional parallel capacitance. The amplifier input capacitance is to be subtracted from this value, and the resulting difference is the value of capacitance that should be plugged in parallel with each output jack.

### Magnetic Pickup Cartridges

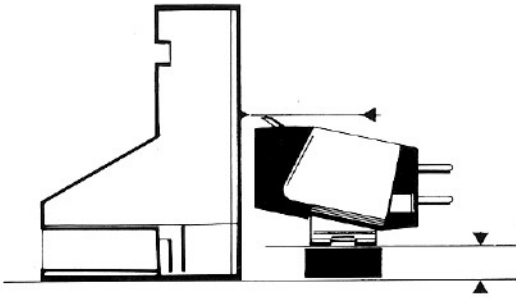
#### Manufacturer's Recommendations

Manufacturer	Model	Load Resistance	Load Capacitance
ADC	all models	47 kΩ	275 pF
AKD	all models	47 kΩ	470 pF
Audio Technica	AT - 71 E	47 kΩ	250 pF
Elac	all models	47 kΩ	300 pF
Empire	5000 EI	44 kΩ	480 pF
Ortofon	all models	47 kΩ	400 pF
Pickering	XV-15/625 DJ	63 kΩ	300 pF
Pickering	XSV-4000	47 kΩ	310 pF
Shure	M 70 EJ	47 kΩ	430 pF
Shure	M 75 ED Type 2	47 kΩ	400 pF
Shure	M 95 ED	47 kΩ	450 pF
Shure	V 15 III	62 kΩ	400 pF
Shure	V 15 IV	69 kΩ	250 pF
Sonus	all models	47 kΩ	275 pF
<b>Stanton</b>	<b>all models</b>	<b>47 kΩ</b>	<b>275 pF</b>
Technics	EPC-206 C	47 kΩ	250 pF
Technics	EPC-270 C	40 kΩ	500 pF

#### IV. Mounting and adjustment of the pickup cartridge

The TP 63 cartridge wand has been designed for low effective mass and for functional convenience in interchangeable use of more than one pickup cartridge with the turntable. It can be kept safely in the hinged storage case when not in use.

If the pickup cartridge intended for use is not already installed in the cartridge wand, it is to be mounted according to the following instructions:



Bild/Figure 11

1. Place the pickup cartridge facing the transport mounting guide as shown in Figure 11.

2. Compare the height of the stylus tip with that of the sighting graduations on the front side of the guide. Select the appropriate spacer to bring the stylus in line with the marks. There are 5 different C-spacers available, from 1 to 3 mm thick.

3. Two of the spacers, A and B, fulfill additional functions; as a consequence, the assembly scheme indicated in Figure 12 should be maintained.

The A-spacer is identifiable by the guiding ridge along each mounting hole. The shoulders fit into the mounting slits of the cartridge wand to prevent misalignment of the spacer assembly, and, **therefore, this spacer must always be used.**

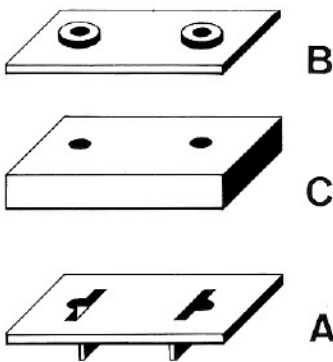
The B-spacer possesses an embossed 0.5 (mm) identification and a collar around each hole. This spacer is intended for pickup cartridges with large mounting holes only; the collars snap into the holes to prevent misalignment of the cartridge.

4. Remove the metal lifting handle assembly from the headshell.

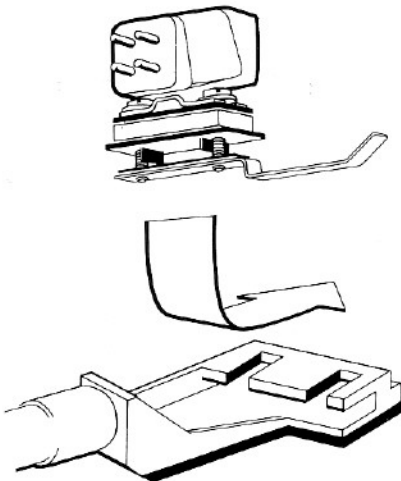
– The following steps are performed outside of the wand.–

Disassemble it. Select two screws of appropriate length together with washers and insert them through the mounting holes of the pickup cartridge and the spacers. Secure the assemblage by screwing on the metal lifting handle with the attached insulating spacer. The screws employed should not now extend more than 1 mm out of the handle when fastened.

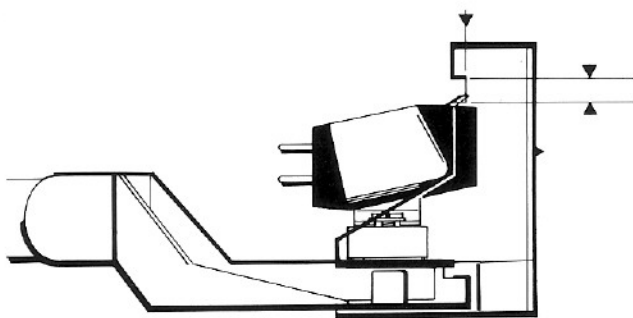
5. Slide the mounted pickup cartridge onto the cartridge wand (Figure 13).



Bild/Figure 12

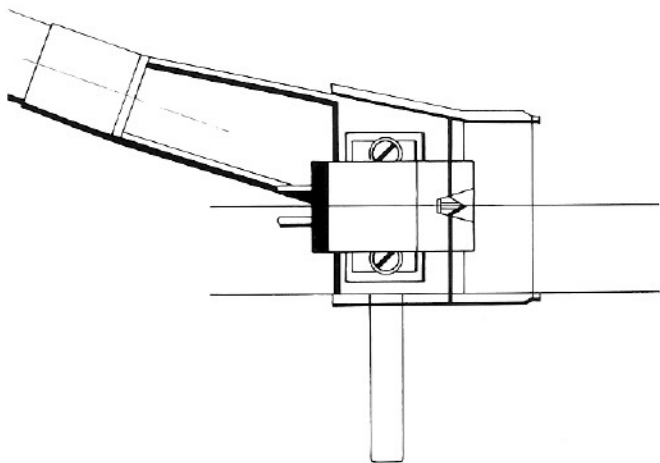


Bild/Figure 13



Bild/Figure 14

- Slide the cartridge wand as far as possible into the mounting gauge. Figure 14 illustrates the correct position of the stylus tip. The longitudinal position of the stylus can be varied by sliding the cartridge with respect to the arm. If the spacers have been properly chosen, the stylus tip will lie within the sighting slits. After the correct stylus position has been achieved, the mounting screws are tightened. Thereafter, the pickup cartridge should be compared with the edge of the arm on the handle side as shown in Figure 15 if the two are not parallel, a misalignment of the cartridge is indicated.



Bild/Figure 15

- Using a pair of tweezers, push the contacts of the tone arm leads onto the connection pins of the cartridge. The leads are colorcoded in compliance with international standards, as follows:

White – Left channel signal lead

Blue – Left channel shield

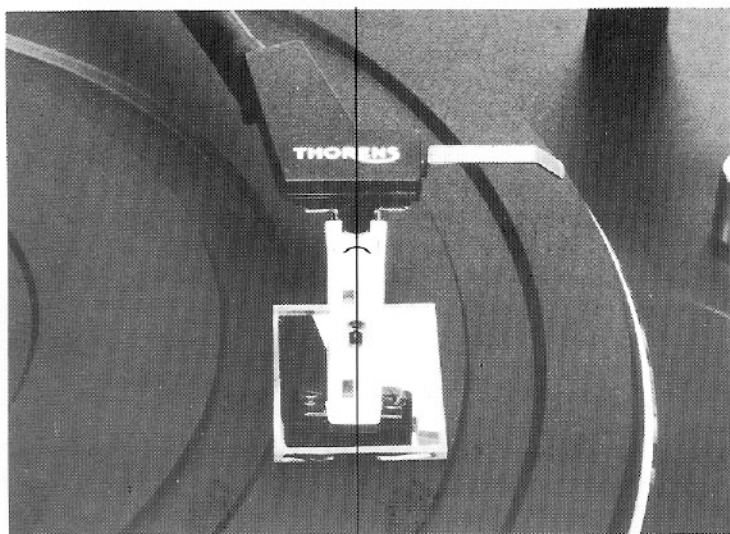
These leads are also to be used when a monophonic pickup cartridge is employed.

Red – Right channel signal lead (hot, positive)

Green – Right channel shield (cold, negative)

The second contact on the green lead is connected to the bare pin on the inner side of the cartridge wand to establish a ground connection between the shield of the right channel and the tone arm.

The existence of hum may indicate poor grounding of the cartridge; should hum persist after the instructions in Section III have been followed, consult your THORENS dealer for assistance.



Bild/Figure 16

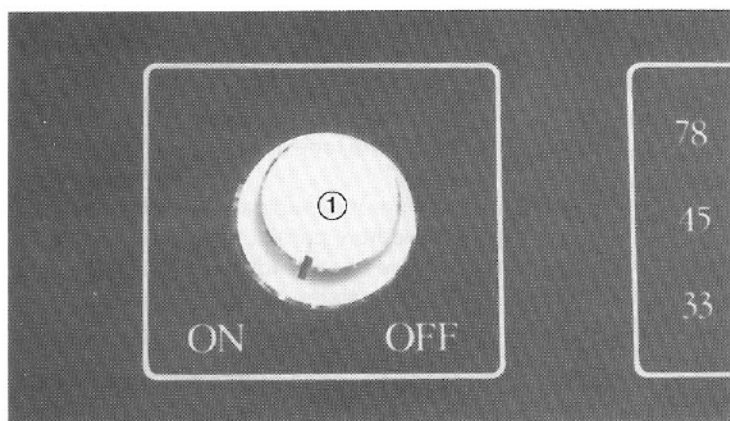
- Insert the cartridge wand into the bearing assembly and tighten the knurled nut.
- After the tone arm has been mounted and adjusted, it is necessary to verify the correct horizontal position of the cartridge with respect to the platter. Place the mirror on the platter and lower the pickup stylus onto its surface. When viewed from the front, the cartridge must be positioned symmetrically about its vertical axis. By comparing the cartridge with its mirror image, the correct position may be determined (Figure 16); if necessary, the cartridge can be adjusted by holding the wand and rotating the head part only, until symmetry is achieved.



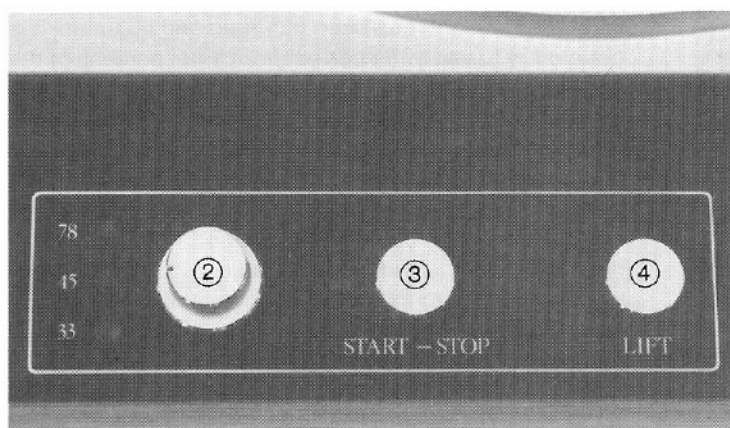
## V Operation

The TD 524 Turntable is operated with the following control elements (Figure 1):

- |   |            |   |
|---|------------|---|
| ① | ON/OFF     | mains power switch  |
| ② | 33/45/78   | speed selector switch   |
| ③ | START-STOP | start / stop button   |
| ④ | LIFT       | tone arm lift button  |
| ⑤ | QUARTZ     | quartz-controlled speed, on / off switch  |
| ⑥ | VARIO      | pitch and speed variation control with push-pull range switch ( $\pm 6\%$ or $\pm 25\%$ ) |
| ⑦ | ML/L/O     | auto-stop mode switch   |
| ⑧ |            | stroboscope for indicating the nominal speed  |
| ⑨ |            | cueing rim  |
| ⑩ |            | center-hole adapter   |



Bild/Figure 17



Bild/Figure 18

The respective operating states are indicated by light-emitting diodes located next to the switches and buttons.

### Applying Power to the Unit

The turntable is turned on by turning the switch knob ① to ON.

The stroboscope ⑧ illuminates, and the light-emitting diodes next to the buttons and rotary knobs are illuminated in correspondence with the selected functions.

The tone arm always remains raised when power is applied to the unit, thereby preventing damage to the pickup stylus. If the tone arm has been lowered when the unit was last turned off, it will be immediately raised when power is applied.

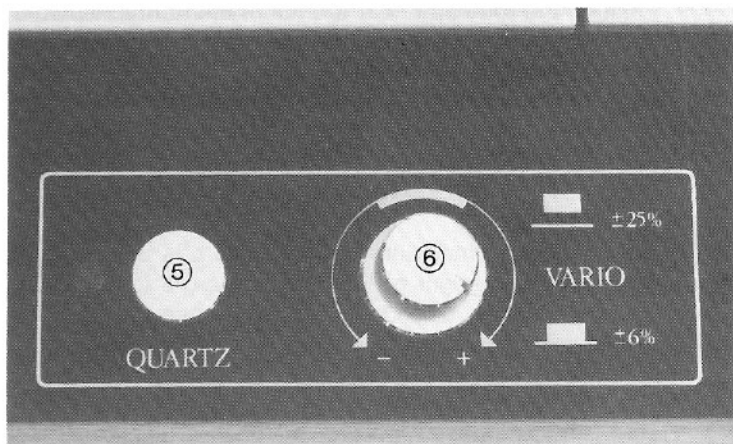
### Playing a Record

Place a phonograph record onto the platter and manually position the tone arm over the lead-in groove or a desired location on the record. After starting the turntable with the START-STOP button ③, lower the tone arm with the LIFT button ④. After the tone arm has been lowered, the red light-emitting diode next to the LIFT button illuminates correspondingly. The extremely rapid run-up time of the turntable platter (less than 0.25 seconds at 33-1/3rpm, corresponding to a rotational angle of approximately 40° on the platter) permits a record to be "cued" according to the following procedure.

Position the tone arm over the desired point on the record and lower the arm with the LIFT button ④. Turn the turntable by hand at the cueing rim ⑨ until the beginning of the desired modulation, e.g., the first note of a musical selection, is found. Rotate the platter backwards about 40°. The platter may now be started with the START-STOP button ③. Reproduction begins when the platter has attained the selected speed, enabling howling to be eliminated at run-up.

The indicator diode next to the START-STOP button ③ illuminated red at starting and switches to green after the selected speed has been attained. The red phase of the indicator corresponds to the run-up time of the turntable platter as well as to the muting function provided for the remote control mode.

The center-hole adapter ⑩ is included at the platter spindle for playing records with a large center hole. When the center adapter is turned a quarter revolution clockwise, it pops up from the recess. It may be secured with a slight twist, and a record may now be placed on to the turntable without the adapter ⑩ in a counterclockwise direction permits it to be returned to the recess, where it is locked into place.



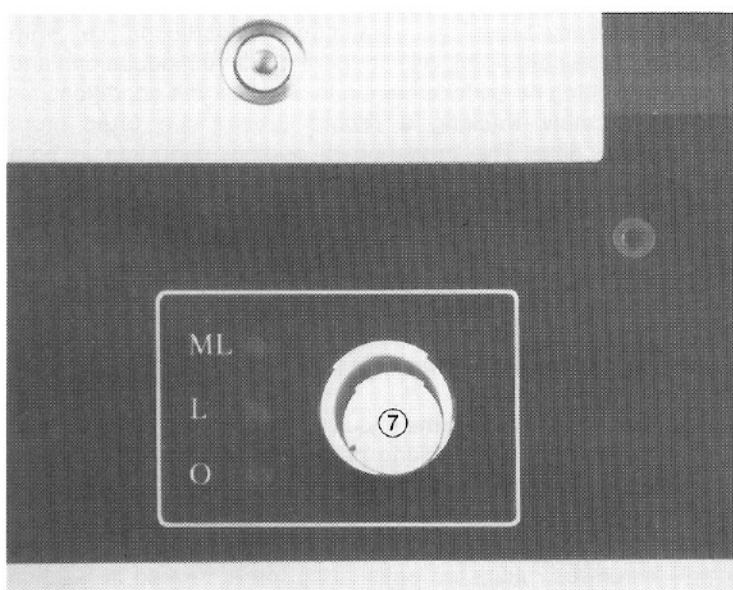
Bild/Figure 19

### Speed Selection

The rotational speed is selected by turning the rotary switch (2). The selected speed is indicated by a corresponding red light-emitting diode.

When the green light-emitting diode next to the QUARTZ button (5) is illuminated, the turntable drive is quartz controlled and the selected rotational speed is exactly maintained. Pressing the QUARTZ button (5) illuminates the red indicator; the speed may now be varied by  $\pm 6\%$  when the VARIO control knob is pushed in or by  $\pm 25\%$  when pulled out.

The rotational speeds  $33 \frac{1}{3}$ , 45 and 78 rpm may be verified with the built-in stroboscope (8). The row of illuminated dots remains stationary at the nominal speed.



Bild/Figure 20

### Auto-Stop and Mode Switch

When the tone arm reaches the lead-out groove of the record, the optoelectronic stopping device is activated.

The rapid lateral motion of the tone arm triggers the auto-stop function. A special technique is used to register the motion of the tone arm once per platter revolution; thus, even records placed at an eccentric position on the platter may be played without triggering the auto-stop before the lead-out groove has been reached.

Various stopping functions may be selected with the mode switch (7):

- ML – the Lift raises the tone arm, and the platter Motor is switched off
- L – the Lift raises the tone arm, but the turntable platter continues to run
- O – the auto-stop is not in operation, and the unit functions as a manual turntable.

The tone arm is generally returned to its rest position by hand.

However, lightly tapping the tone arm with a finger will also swing it back into its rest position. A magnet on the lift platform insures that the arm will remain in the rest.

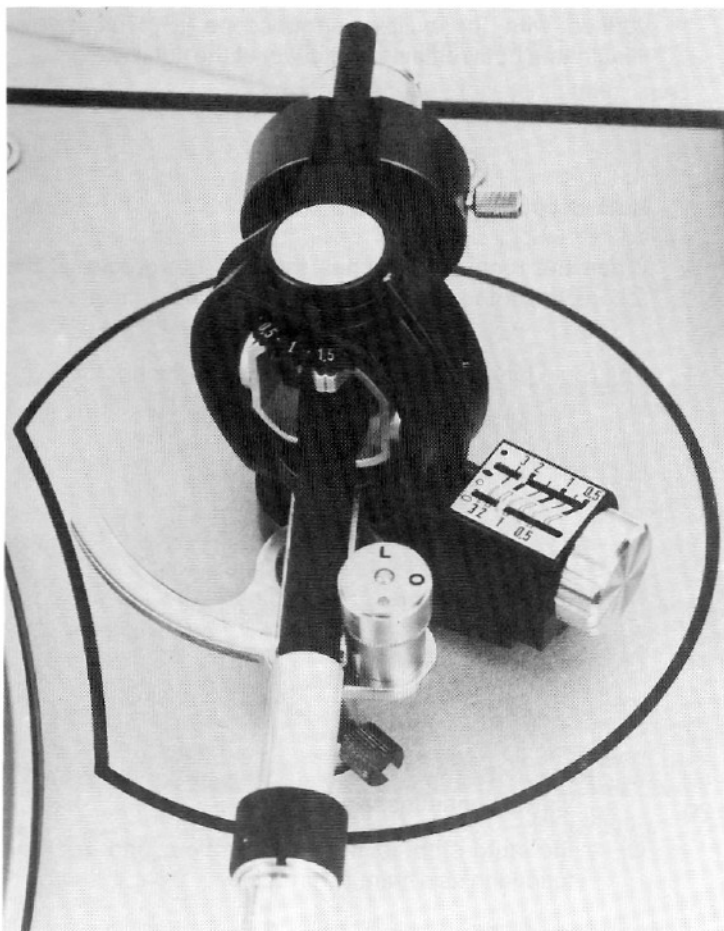
### Interruption of Record Play

If a record is not to be played completely, the tone arm may be raised with the LIFT button (4). The platter will continue to run; it may be switched off with the START-STOP button (3).

## VI Tracking force adjustment

10 mN (millinewtons)  $\approx$  1 p (pond) = 1 g (gram weight)

Before the tracking force can be set, the tone arm must be balanced with the cartridge to be employed. Turn the toothed tracking force dial on the bearing assembly to the zero position. Release the tone arm from the rest by turning the lock on the lift platform in a counterclockwise direction.



Bild/Figure 21

Position the tone arm near the rim of the turntable platter and lower by pressing the LIFT button. Hold the arm with the left hand to prevent lateral motion. Loosen the knurled screw on the counterweight. By sliding the counterweight, balance the tone arm so that the stylus hovers at record playing level. Tighten the knurled screw and recheck the balance.

**Note:** The counterweight of the TP 16 L is designed for balancing lightweight pickup cartridges (up to about 8.5 grams). Heavier cartridges require a heavier counterweight, available through your dealer from THORENS.

The tracking force may now be set by turning the adjustment dial. In Figure 21, the grooved pointer indicates that a value of 1.5 has been selected. The numbers on the dial correspond to the tracking force in grams. Intermediate values are indicated by the white dots between the numbers.

The tracking force may be initially chosen according to the recommendations of the cartridge manufacturer. However, it should be noted that such prescribed tracking forces are frequently based on ideal playing conditions, i.e., with records containing only moderate signal modulations and exhibiting no surface warps. In practice, the conditions for accurately tracking a record groove are often more demanding. The presence of audible distortion in both channels during loud passages may indicate the presence of tracking distortion, which can be eliminated by increasing the tracking force by 2.5 or 5 mN (0.25 or 0.5 grams). This measure will actually extend the life expectancy of the record placed, since tracking distortion is invariably accompanied by groove deformation and hence premature wear.

It is necessary that the stylus tip be kept free of residues to insure optimum tracking performance; use only a stylus brush manufactured for cleaning purposes.

Distortion in only one channel may be caused by an incorrectly adjusted antiskating force, treated in Section VII.

## VII Antiskating force adjustment

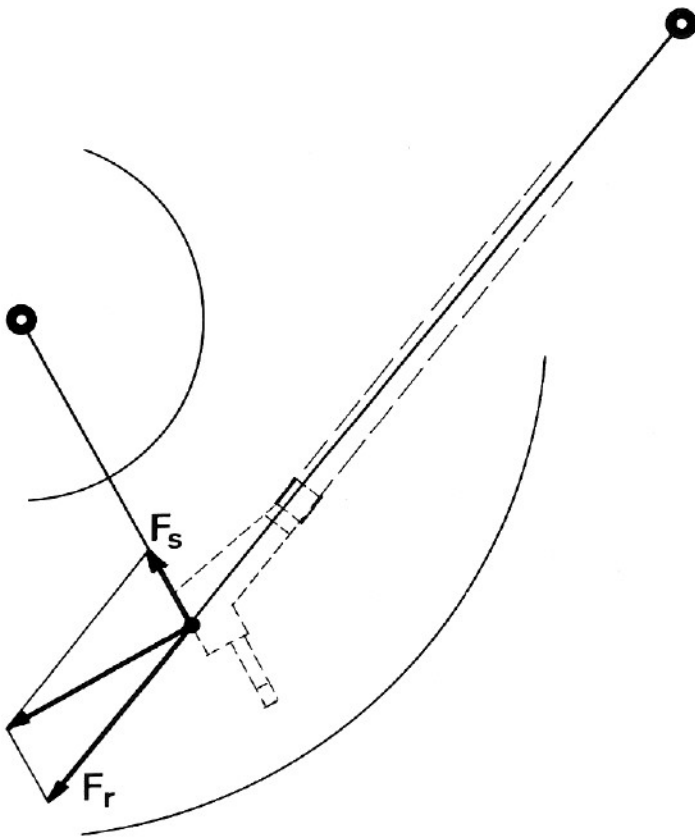
The geometry of the TP 16 L Isotrack Tone Arm results in minimum tracking errors.

The tracking friction of the stylus in the moving record groove produces a force which may be resolved into the two components indicated in Figure 22.

The component  $F_r$  pulls on the tone arm bearing in line with the arm, while the other draws the arm perpendicularly against the groove toward the center of the record. This second component, the skating force  $F_s$ , exerts a high pressure on the inner groove wall.

With a lightly balanced tone arm, the skating force can lift the stylus out of the groove and send it skating across the record surface toward the center of the turntable.

To counteract this tendency, a frictionless magnetic assembly in the THORENS TP 16 L applies a force that is directed outward and is consequently termed the anti-skating force.



Bild/Figure 22

As the skating force is proportional to the tracking friction, the antiskating force must be selected in proportion to the factors contributing to this friction. The adjustment scale thus includes consideration of the stylus tracking force and tip configuration for a wet or dry record surface.

The symbols on the calibration scale represent the following tracking conditions:

- spherical stylus } wet record surface (resulting from
- elliptical stylus } simultaneous liquid groove cleaning, preferred by some users, especially in Europe)
- spherical stylus } dry record surface (normal)
- elliptical stylus }

The thicker calibration marks correspond to values on the tracking force dial; the lines in between are intermediate values. The knurled knob is used to set the pointer to the tracking force employed, indicated on the appropriately calibrated scale.

The setting shown in Figure 21 illustrates the correct adjustment for a stylus tracking force of 15 mN (1.5 grams) with an elliptical stylus and a dry record groove.

**Technical Note:**

The antiskating scale is calibrated for actual playing conditions, i.e., for modulated record grooves. Methods variously proposed for determining the correct antiskating force, for example using an unmodulated record groove, will lead to inaccurate settings.

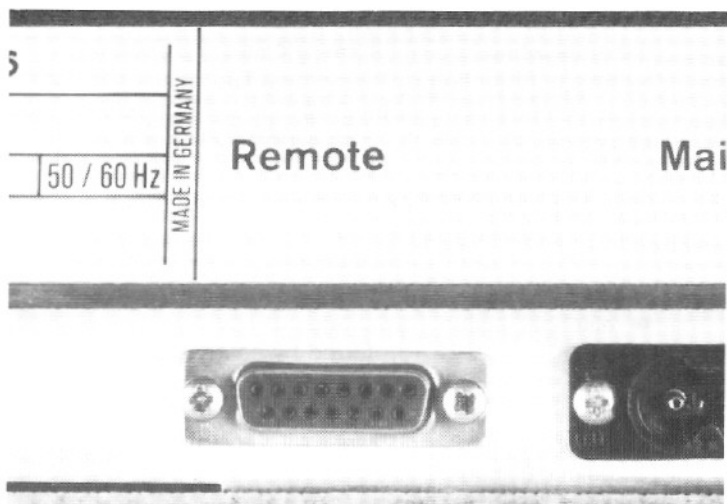
Should distortion be heard in only one channel during loud passages, a different antiskating force is required. To determine the proper antiskating setting, select a good stereophonic record containing loud, fortissimo passages near the lead-out groove:

- Recheck the balance of the tone arm according to Section VI.
- Set the tracking force to the minimum value recommended by the cartridge manufacturer, e.g., 10 mN (1 gram).
- If distortion be distinctly audible in both channels, increase the stylus pressure in steps of 2.5 mN (0.25 grams) until the distortion in one channel ceases or diminishes to a minimum compared with the other channel.
- Set the antiskating force to an initial position, e.g., 0.5, and observe the effect. Gradually increase the setting until the distortion ceases in both channels.

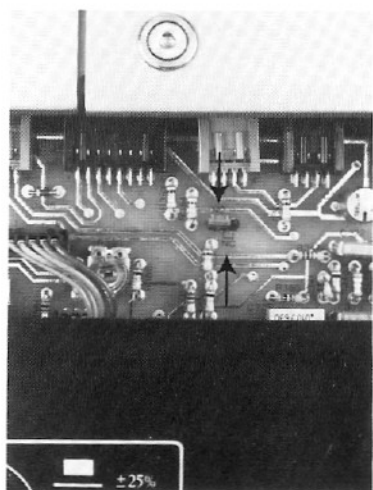
**Important Note:**

If the distortion moves to the other channel, the antiskating setting is too high and must be reduced.

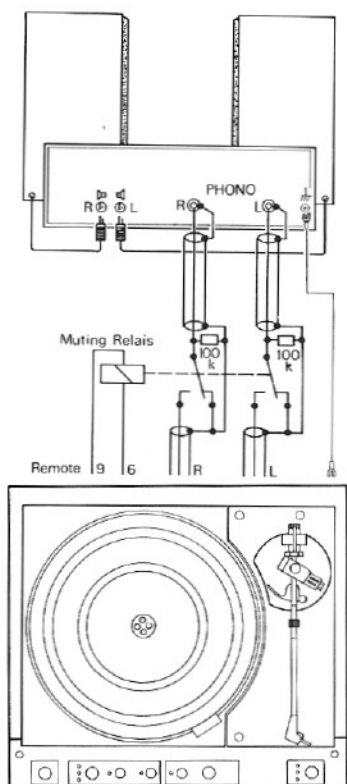
Should the same level of distortion remain in both channels, the tracking force must be increased. The antiskating force is then to be raised by the same scale value as the increase in stylus force.



Bild/Figure 23



Bild/Figure 24



Bild/Figure 25

## VIII Remote Control

All important functions of the TD 524 Turntable may be operated by remote control. The appropriate "Remote" connector is located at the rear of the unit (Figure 23).

The functions are limited to those actually required in use. All switches and buttons with return indicator functions, except for the VARIO potentiometer, are switched to 0 V (pin 6).

The START/STOP button (pin 11), QUARTZ/VARIO button (pin 14), and LIFT button (pin 15) are connected in parallel to the buttons in the turntable; the functions may thus be activated from either the turntable or by remote control.

The turntable may be started by turning up a fader if a normally open (NO) end contact is provided; in other words, when the fader is opened, the end contact must switch pin 5 to 0 V to start the turntable. The turntable may likewise be started with the START/STOP button on the unit or at a remote location.

A normally closed (NC) contact at the fader may also be employed to start the turntable; however, a minor circuit modification is required that is performed as follows. Remove the ON/OFF knob. After removing the upper mounting screws with a 2.5 mm Allen wrench and the lower Philips screws, pull out the front panel and tilt it slightly. The Interface circuit board is now accessible, upon which a programming plug is located that must be reinserted from the "NO" to the "NC" position (Figure 24).

The use of this starting mode has one disadvantage. If no remote control switch is connected, the turntable will start as soon as mains power is applied.

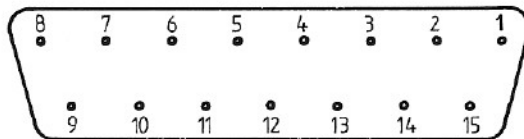
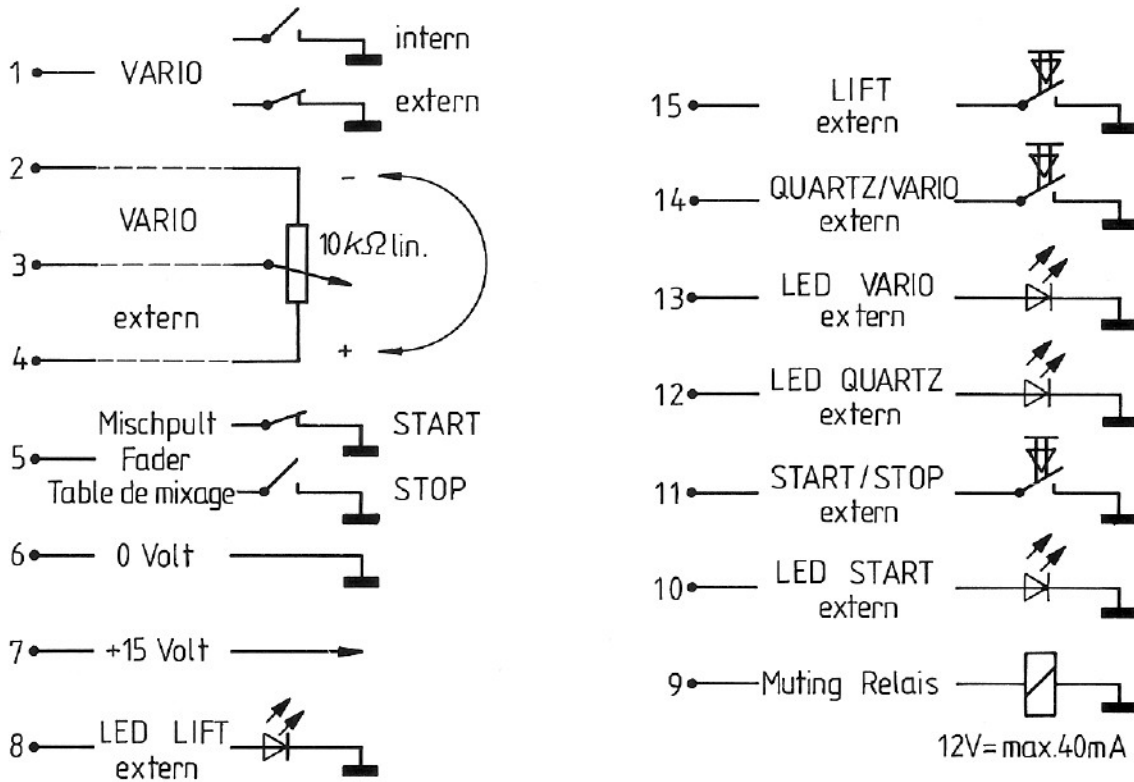
Pin 9 delivers a voltage of 12 V (with 40 mA maximum current drain) after the run-up phase for a muting relay. Such a relay enables the audio outputs of the turntable to be muted until the platter has reached nominal speed, thus preventing howling at run-up.

The schematic in Figure 25 illustrates the electrical connections of a Muting Relay.

The voltage at pin 10 for the START LED return indicator appears when the platter has reached nominal speed. The run-up phase of the platter cannot be indicated with this signal.

For the return indicators Remote QUARTZ LED (pin 12) and Remote VARIO LED (pin 13), it is expedient to employ a two-colour light-emitting diode (e.g., CQX 95, available from THORENS) with green for Remote QUARTZ and red for Remote VARIO. A +15 V voltage is available at pin 7 for powering possible supplementary devices such as an infrared remote control unit.

# Fernsteuerung Remote Control Commande à distance



**7 825 064**  
Type: AMPHD 20

Lötseite des anzuschließenden Steckers "Remote"  
Soldering lugs of the connecting plug "Remote"  
Côté des soudures de la fiche "Remote"

**ENGLISH**

## IX Technical Specifications

Drive System	THORENS Direct Drive
Motor	DC motor with 256-pole tachogenerator
Motor speed control	Quartz
Speeds	33 1/3, 45 and 78 rpm
Vario control	$\pm 6\%$ , switchable to $\pm 25\%$
Speed error	$\pm 0$
Run-up time	< 250 ms corresponding to a rotation angle of 40°
Turntable platter	aluminium alloy, damped by a special mat of natural rubber
Platter diameter	330 mm, affords a rim for cueing
Wow and Flutter according to DIN 45 507	< 0.035 %
Rumble unweighted according to DIN 45 539	> 52 dB
Rumble weighted according to DIN 45 539	> 72 dB
Rumble measured with THORENS Rumpelmesskoppler (rumble measuring device) according to DIN 45 539	
unweighted	> 62 dB
weighted	> 80 dB
Remote Control	Start/Stop, Fader Start Quartz/Vario Switch; Vario Control Tone Arm Lift; Muting relay terminal
Mains voltages	100, 120, 140, 200, 220, 240 V 50/60 Hz mains selector located on the underside of the unit
Power consumption	65 VA

### Isotrack Tone Arm TP 16 L

TP 63 cartridge wand	
Effective length	247.7 mm
Effective mass	11 g
Stylus overhang	17.7 mm, adjustable
Offset angle	$\leq 0.18^\circ/\text{cm}$ of radius
Skating compensation	frictionless magnetic assembly
Tracking force	by calibrated spring dial adjustment
Bearing friction	$\leq 0.15$ mN (15 mp) in both planes
Cartridge mounting	standard 1/2"
Capacitance of tone arm	35 pF

### Dimensions

Turntable with base (W x D)	500 x 445 mm
Height with cover closed	160 mm
Height with cover open	410 mm
Weight	22 kg

## X. THORENS Factory Warranty

We warrant that we shall replace free of charge every defective part of this unit or repair it free of charge in our factory in one of our authorized service stations should a defect occur within the period of warranty. The warranty period is one year from the date of the original purchase.

The above warranty is valid only if the enclosed warranty card, duly filled out, be returned within 10 days after purchase to the THORENS General Representative in your country; his address will be provided by your dealer.

Should a defect appear within the warranty period, please contact your THORENS General Representative, describing completely the defective operation and quoting the Model and Serial Number of your unit. Defective parts which are user replaceable will be sent to you by mail. Otherwise you will be given the address of the service station nearest you or be requested to ship the unit directly to the representative.

In the latter case, please pack the unit using the original packing materials.

Shipping costs must be prepaid.

Any damage caused by failure to observe the instructions contained in this manual as well as damages incurred in transport or shipping are not covered by this warranty.

This warranty will be invalidated by repairs or modifications made by anyone other than THORENS authorized service personnel.

**NB:**

Please observe possible complementary warranty conditions issued by our authorized general representatives.

THORENS / Gerätewerk Lahr GmbH



# THORENS

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