THORENS TD 146

- Performances, convenience of use, good value
- THORENS Belt Drive
- Clean and uncoloured sound
- ISOTRACK TP11 MkIII tone arm with very low effective mass
- Low resonance tone arm tube utilising "split wave technology"
- Friction-free velocity-sensing electronic shut-off

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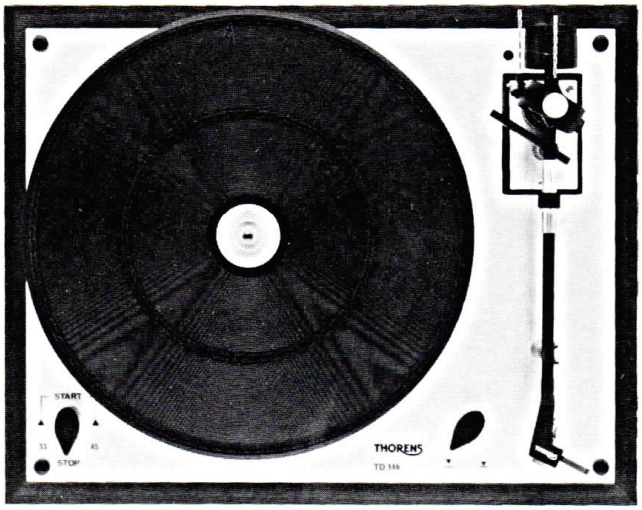

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Technical Data

Drive system	1 step belt-drive
Motor	16 pole two phase synchronous motor with slip clutch for instantaneous start
Speeds	33 1/3 and 45 rpm mechanical speed selection
Motor speed control	synchronized by mains frequency
Turntable platter	2,7 kg, zinc alloy dynamically balanced
Platter diameter	30 cm (12")
Wow and Flutter according to DIN 45507	≤ 0.05 %
Rumble unweighted according to DIN 45539	> 50 dB
Rumble weighted according to DIN 45539	> 70 dB
Rumble measured with THORENS Rumpelmesskoppler (rumble measuring device) according to DIN 45539 unweighted	> 60 dB
weighted	> 75 dB
Mains voltage	110–125 V, 210–240 V AC 50/60 Hz
Power consumption	2,5 Watt

Tone arm TP 11 Mk III

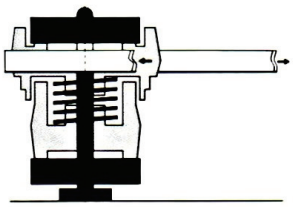
Cartridge wand TP 63	
Tone arm length	230 mm (9")
Effective mass	7.5 g
Stylus overhang	14.4 mm (9/16")
Offset angle	22°
Lateral tracking error	≤ 0.18°/cm radius
Skating compensation	weight and string
Stylus pressure appliance	graduation scale on counter-weight
Bearing friction	≤ 0.20 mN (20 mgr) in both planes
Cartridge fitting	standard 1/2" centres
Capacitance of cable	190 pF ± 10 %

Dimensions

(W × D)	430 × 360 mm
Height with cover closed	150 mm
Height with cover open	415 mm
Depth with cover open	436 mm
Weight	8.0 kgs

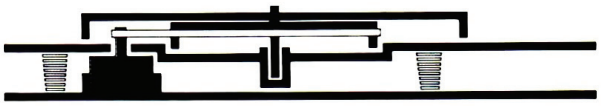
All technical modifications reserved.

Remember that when comparing technical data, it is essential to ascertain that all measurements have been made according to the same standards. Even then, important differences may show in the results obtained due to variations in the test equipment, cartridges or records that are used.



The THORENS belt-drive

The THORENS-motor drives the turntable platter by means of a rubber belt. The natural elasticity of the belt prevents most motor vibrations from reaching the platter and, therefore, the pick-up stylus. In more than 20 years of continuous development, THORENS has reduced the very few disadvantages of belt drive to an absolute minimum and has brought it to a level of technical perfection which is not approached by any other system known today.
A particular development is the THORENS acceleration clutch, which prevents the belt from stretching, thus reducing the starting time and eliminating chassis vibration.
Because of the high performance required by descerning listeners, THORENS has decided to retain its own unique belt drive system as long as no better drive system is developed in THORENS laboratories or elsewhere.



The THORENS floating suspension

Every turntable must be damped by a suspension system to prevent the sensitive pick-up from environmental vibration and from acoustic feedback. If the springs are placed between motor and turntable platter, they then fulfill the additional requirement of decoupling motor vibrations almost completely from the turntable and the pick-up system.
The TD 146 has such a double chassis system. The 2.7 kg turntable platter and the tone arm are both mounted on a secondary chassis which is resiliently suspended from the main chassis carrying the motor.

THORENS ISOTRACK TP11 Mark III tone arm

For optimum in tracking ability it is not sufficient that a tone arm has low bearing friction. It is much more important that is has a low effective mass, because high mass prevents the stylus from following the imperfections (warp or ripple) of the record as it should do.
To overcome high effective mass one can increase the stylus force, but this results in excessive record wear.
THORENS has solved the effective mass problem by removing any unnecessary weight from the tone arm.
The head shell is reduced to a shielding device, and the detachable connector is placed close to the pivots where it has negligible influence on the effective mass. In addition, the THORENS ISOTRACK is a straight arm and not S-shaped. The necessary offset angle is independent of the arm shape.
Typical arms have effective masses of around 15 grammes. The THORENS ISOTRACK is HALF this figure, allowing it to track at the lowest possible stylus pressures.
A special surface treatment of the tone arm tube – "split wave technology" – absorbs all undesirable resonances of the tone arm.

Friction-free velocity-sensing electronic shut-off

As the lead-out grooves of records show a higher pitch – i.e. the grooves are further apart from one another – the tone arm motional speed increases towards the center of the platter. An electronic circuit picks up the signal produced by the change in the tone arm velocity and commands the motor to stop and the tone arm to raise.
The precision associated with THORENS turntables is further emphasised here, since the activation of the auto stop process is not position sensitive, but fully electronic and friction-free.
The THORENS automatic stop system also enables the operator to cue with studio precision at any point on a disc, even at the very centre.
Another circuit prevents the activation of the auto stop process

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