

## TRIBOMETER

TRM 500 | 1000 | 2000 | 5000



### TEST CONFIGURATIONS

Dry

- ◆ Disc - pin
- ◆ Disc - ball
- ◆ Disc - disc

Lubricated

For the testing of lubricants a test pot is used, which can be heated up to 150 °C.

- ◆ Disc - pin
- ◆ Disc - ball

### COMPONENTS

- ◆ Test bench
- ◆ Control cabinet
- ◆ Machine table and housing
- ◆ PC with Windows 10
- ◆ Monitor, keyboard and mouse
- ◆ Software TriboControl

### SCOPE

The tribometer TRM 500/1000/2000/5000 is used to determine and simulate friction and abrasion during sliding loads. It can be operated with solid friction without lubrication and with boundary or mixed friction with liquid lubricants.

### PRINCIPLE

In the test principle used as standard, a stationary specimen (pin or ball) is pressed with a defined normal force against the end face of a rotating disc. Both specimens are arranged vertically one above the other, with the rotating disc at the top. Both solid materials and liquid lubricants can be tested.

For a test, the specimen is clamped in a holder. The holder is located vertically above a test piece (pin, disk, ball), which is mounted on the base plate. The base plate is located on the linear table, which is movably mounted on a spring in the Z-axis.

During the test, the specimen is rotated by a drive motor and pressed from above against the test piece. As a result, the specimen moves together with the linear table against the spring force down. About the spring travel and the spring constant, the applied normal force can be calculated.

As a result of material abrasion (wear), both friction partners (specimen, test piece) become thinner and the linear table moves upwards due to the spring force. In order to keep the normal force constant, the specimen must therefore be moved further down by this amount. This distance per unit of time is a measure of wear.

During the test, the torque required to rotate the specimen, the normal force and the travel are measured. In order to be able to rule out the influence of friction in bearings and guides of the test stand as far as possible, the drive/specimen holder is mounted on air bearings. The measurement of the torque is carried out via a torque measuring shaft, the travel is measured via a laser-optical displacement measuring system.



- ◆ Test piece holder
  - ◆ Pin round
  - ◆ Ball
- ◆ Swash plate
- ◆ Heatable test pot
- ◆ Specimen holder
- ◆ Test pins
- ◆ Test balls
- ◆ Spacer for distance measurement
- ◆ Hook wrench
- ◆ Manual

### DIMENSIONS

Test bench

Width x depth x height:  
850 x 950 x 1600 mm\* (850 x 990 x 2100,  
table & housing)\*

Weight: approx. 300 kg\*

Control cabinet

Weight: approx. 50 kg\*

Width x depth x height: approx. 500 x 600 x 800 mm\*

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### SUPPLIES

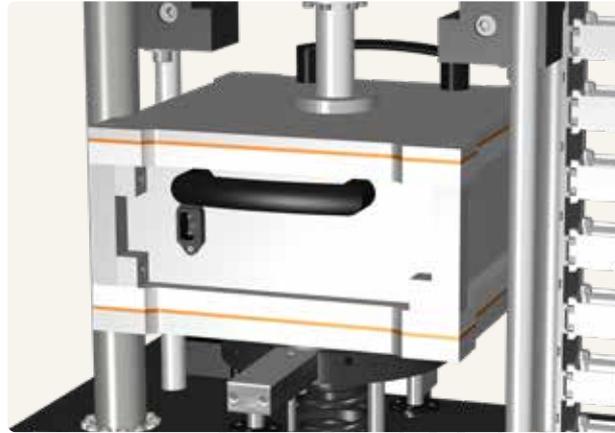
400 VAC / 50 Hz 16 A three-phase current,  
plug 5xCEE, 9-15 kVA (device dependent)  
230 VAC 50/60 Hz  
Compressed air, inlet pressure 6-7 bar, 100l/min

### TO BE PROVIDED BY THE CUSTOMER

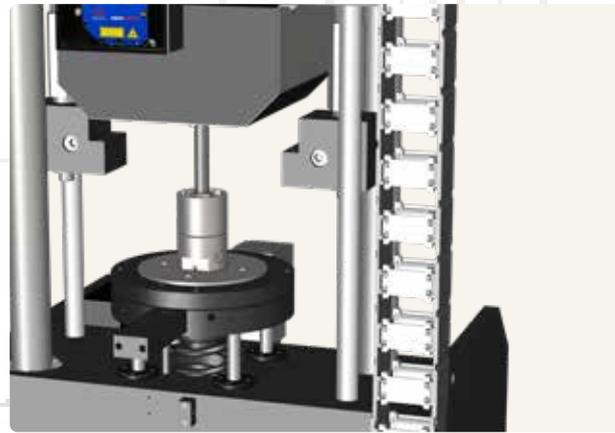
An existing Residual Current Circuit-Breaker must be designed for frequency converter applications (inverter-type U).

### OPTIONAL ACCESSORIES

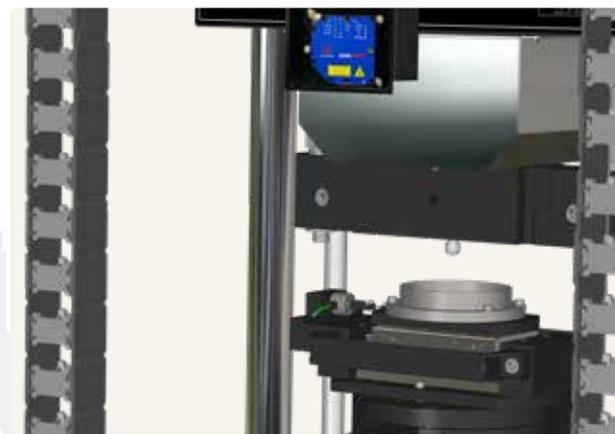
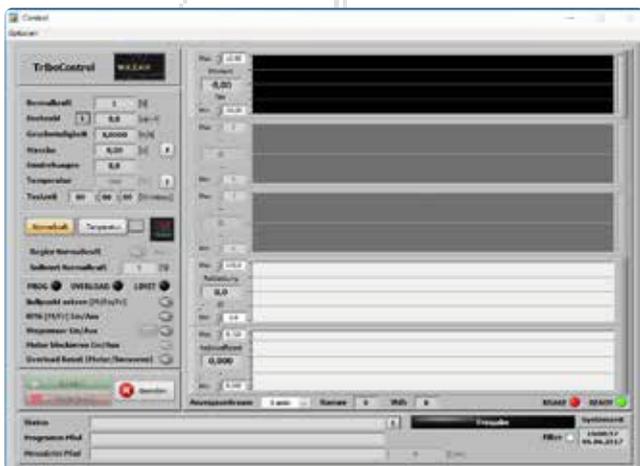
High temperature heating  
Infrared heating  
Linear oscillation  
Heated swash plate  
4-ball-apparatus  
Conditioned test pot  
Pin holder rectangular  
Additional specimen holders of other dimensions



High temperature heating



4-ball apparatus



Linear oscillation

\* Our products are constantly evolving. For this reason, the actual dimensions may differ.

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