

# T-10 BALL-ON-DISK TRIBOTESTER

## TECHNICAL CHARACTERISTIC

T-10 Ball-on-Disk Tribotester is intended for determination of tribological properties of engineering materials used for sliding joints of machines, particularly thin coatings. The tribotester makes it possible to determine precisely the wear resistance and friction coefficient for a pair of materials sliding against each other, depending on sliding velocity, applied load, and other factors. The test is carried out mainly by friction in dry conditions.

Experiments can be carried out in accordance with the ASTM G 99 and DIN 50324 standards. The tribosystem consists of the stationary ball pressed at the required load against the disk rotating at the defined speed. The disk is made of the tested material. In case of testing of a surface coating, it is deposited on the disk. Two configurations of the tribosystem are possible – with vertical and horizontal axis of disk rotation, available after simple changing the load lever system.

It was proved during COST 516 Tribology Action program that the wear debris should be removed from the contact zone by a stream of e.g. dry argon. It improves stability and repeatability of the friction and wear characteristics of the tested pair of materials. The introduction of argon to the contact zone requires additional equipment (option).

T-10 Ball-on-Disk Tribotester is equipped with a control-measuring system which consists of:

- ▶ a set of measuring transducers,
- ▶ controller,
- ▶ digital measuring amplifier,
- ▶ PC and special software for measurements and data acquisition,
- ▶ equipment for argon introduction (option).

During the tests the following quantities are measured:

- ▶ friction force,
- ▶ total linear wear of test specimens,
- ▶ ambient temperature,
- ▶ rotational speed,
- ▶ time and number of disk revolutions (sliding distance).

The measured values are displayed on the monitor screen and saved on the computer disk. The motor of the tribotester is automatically stopped when the preset sliding distance (number of disk revolutions) is reached. After test completion one can print a report presenting curves of changes in the particular quantities versus time.

## TECHNICAL SPECIFICATIONS

▶ type of movement	sliding
▶ contact geometry	non-conformal (point)
▶ spatial configuration	vertical or horizontal disk rotation axis
▶ nominal ball diameter	10 mm
▶ nominal disk diameter	42 mm
▶ sliding velocity	up to 1 m/s
▶ normal load	up to 50 N
▶ wear track radius	up to 20 mm
▶ tribotester dimensions (W x H x D)	320 x 600 x 260 mm
▶ tribotester weight	30 kg
▶ power supply	230 V / 50 Hz
▶ max. power consumption	0.6 kVA



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