



**THELKIN**  
Know the Difference

# THELKIN Systems

## **PIN-ON-DISK TRIBOMETER**



## BACKGROUND

The reduction of friction and wear within a tribological system is of great importance for many technical applications. Friction and wear performance of two bodies in contact can be assessed using simplified testing configurations, including samples with geometries of reduced complexity, that allow for the screening of a range of parameter variations.

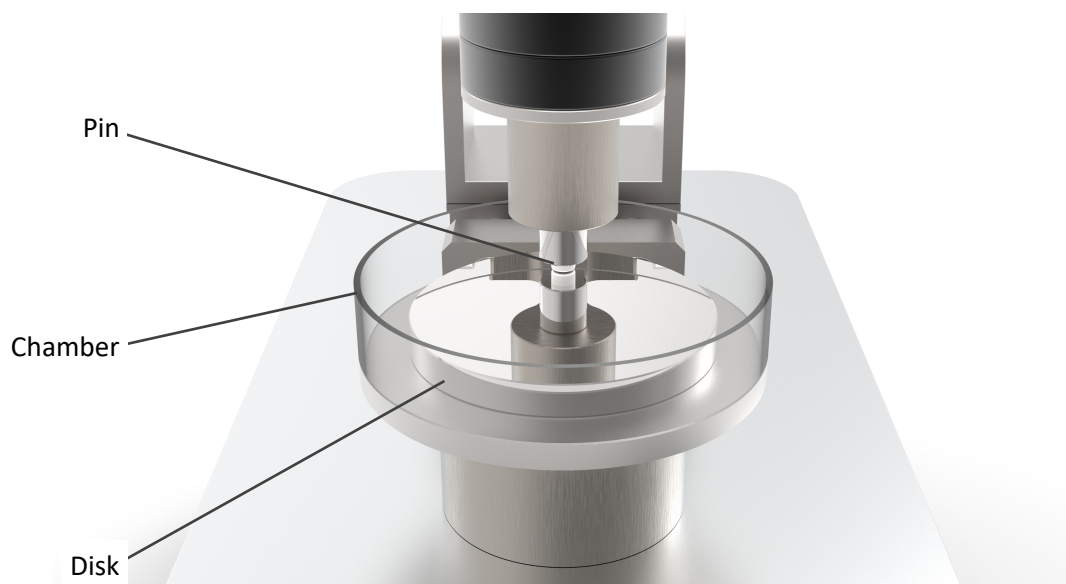
One common wear investigation setup is the pin-on-rotating-disk layout: a cylindrical pin with flat or rounded contact surface actuates against a flat disk. Operating parameters such as sliding velocity, sliding distance, contact pressure, and lubrication conditions can be controlled and investigated.

## SYSTEM DESIGN

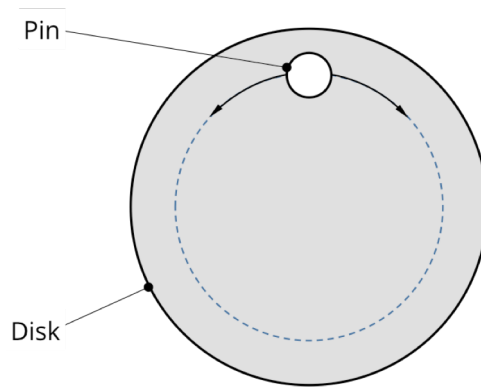
THELKIN offers a compact, robust and flexible testing apparatus for investigation of the wear performance of various material pairings. The Pin-On-Rotating-Disk Wear Tester is a table-top, single-station device. The system is easy to set up, use, and maintain. Mounting design of disk and pin allows for quick mount/dismount of the test samples, while accurate re-positioning of samples after disassembly is guaranteed. All fixturing parts are corrosion resistant and easy to clean. The system is fully electrically driven, no additional power supply (pneumatics or hydraulics) is required.

Experiments can run in dry conditions or lubricated using the polycarbonate test chamber. Optionally, the test chamber and lubricant can be heated up to 50°C. Programmable motion profiles include full rotations at different speeds, and reciprocating motion patterns with sinusoidal or custom profiles. Constant vertical loads are applied using dead weights.

The system is equipped with a high resolution side load sensor to measure the frictional forces of the pin-on-disk interface. This setup is particularly appropriate for biologic materials such as cartilage, and other material pairings with a low coefficient of friction.



Pin-on-rotating-disk sample assembly.



Individually programmable oscillating or rotating motions.

## SPECIFICATIONS

Number of stations		1
Vertical force	N	100
Motion Profile	oscillating or rotating	
Speed	mm/s	1'000
Horizontal Force Sensitivity	N	100
Weight	kg	35

Environment	- Dry or lubricated - Room temperature or heated up to 37°C	
Pin dimensions <sup>1</sup>	mm	
- Diameter		10
- Height		20
Disk dimensions <sup>1</sup>	mm	
- Diameter		120
- Height		10
Electrical power	VAC	115 / 230

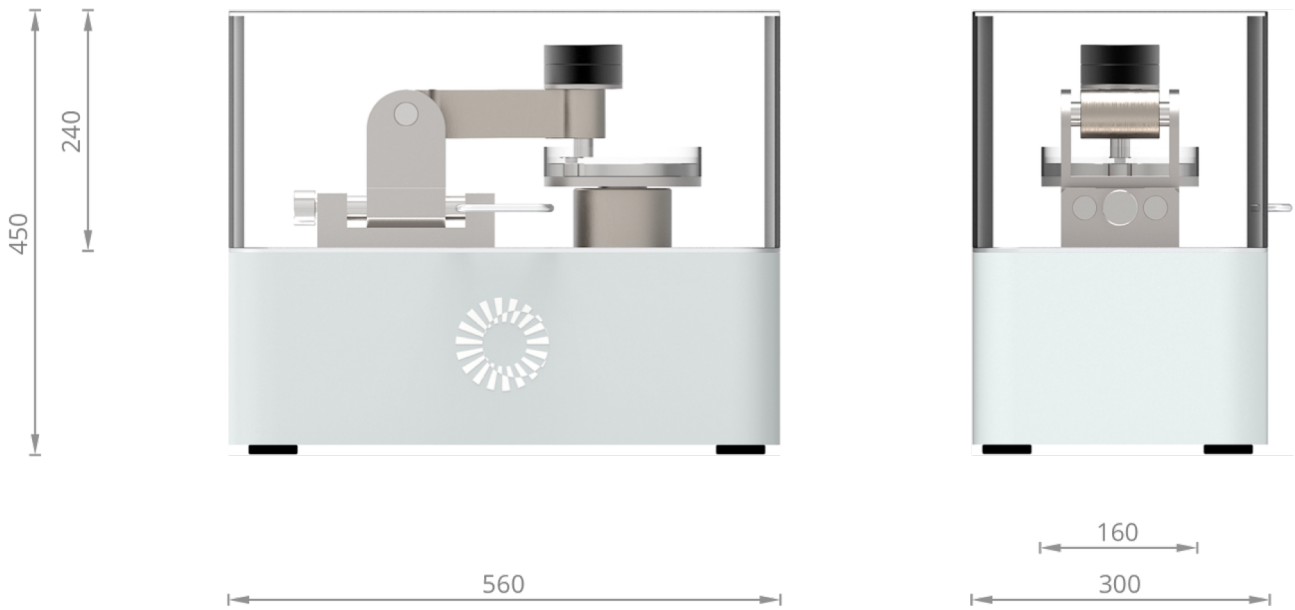
<sup>1</sup>Typical values, can be changed to user requirements.

# DIMENSIONS

(in mm)

front view

side view



# SYSTEM ELEMENTS

