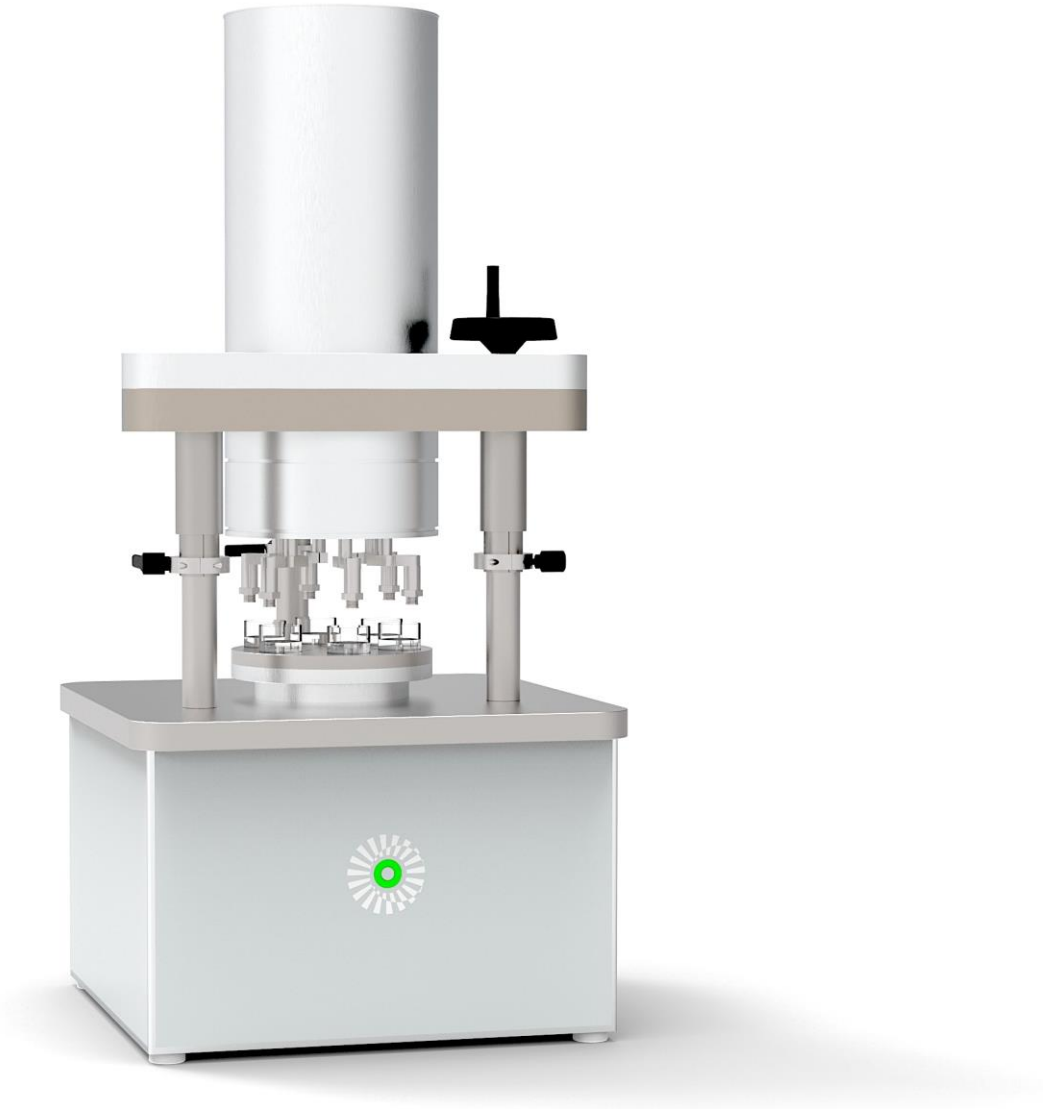
THELKIN
Know the Difference

THELKIN Upgrades

OrthoPOD PIN-ON-DISK TESTER



BACKGROUND

The OrthoPOD is a multidirectional pin-on-disc machine for the investigation of the wear performance of various material pairings. It is especially used for investigating the in vivo wear behavior of joint implant materials.

This system is no longer serviced and supported by its original manufacturer. Therefore, THELKIN offers a complete upgrade of the OrthoPOD system to extend the system's lifetime with state-of-the-art control electronics and user interface.

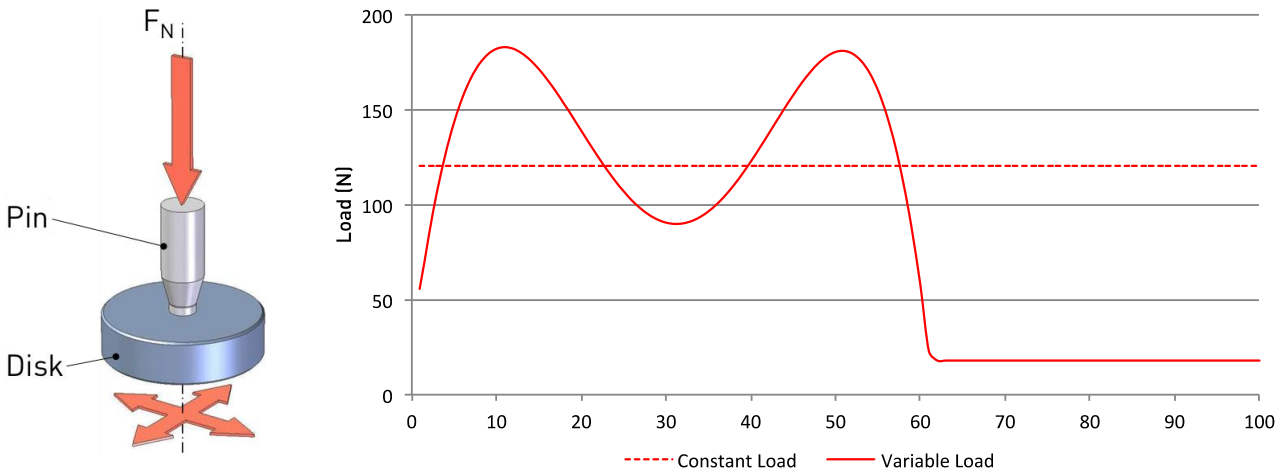
THELKIN offers a complete refurbishment of the entire system, including exchange of all electronic components and replacement of potentially worn mechanical parts.

SYSTEM DESIGN

The upgraded OrthoPOD Pin-On-Disk Tester is a table-top device with six stations arranged in a circle. Each station is comprised of a test arm to hold the pin sample and a flat disk as the opposite articulating surface. Both, the bottom plate that holds the disks and the pin-arm-assemblies are actuated with rotary drives to create the articulating motion. Vertical load is supplied to each arm via servo-controlled pneumatic pressure. The overall vertical load is measured with three sensors, sitting in the frame columns. Each station experiences the same vertical load and horizontal motions.

Plexiglas chambers on each station allow for submersion of the test parts in water-based lubricant. Electrical heating of the test chambers (up to 37°C) is provided through integrated electrical heating of the base and top frame. Load and motions are individually controlled and programmed through an easy-to-use and versatile software interface.

After the THELKIN upgrade, no external cooling or water connection for temperature control is needed.



Pin-on-disk testing setup (left) and load profile examples (right).

UPGRADE SPECIFICATIONS

Drive Components and Frame

Bottom Drive Unit

- Check and service of the bottom drive unit
- Exchange of worn bearings
- Rotary encoder check and replacement
- General cleaning and oil change

Top Drive Unit

- Check and service of the top drive unit
- Exchange of worn bearings
- Rotary encoder check and replacement

Z-Axis Actuators – Vertical Load

- Maintenance pneumatic valves and actuators
- Replacement of linear bearings
- Inspection and revision of load-bearing components

Frame and Covers

- Base plate renewal
- Replacement of sheet metal covers
- Addition of a status light

Controller and Electronics Upgrade

Controller

- Replacement of control boards, incl. motor & valve controls
- General rewiring
- Implementation of safety relais

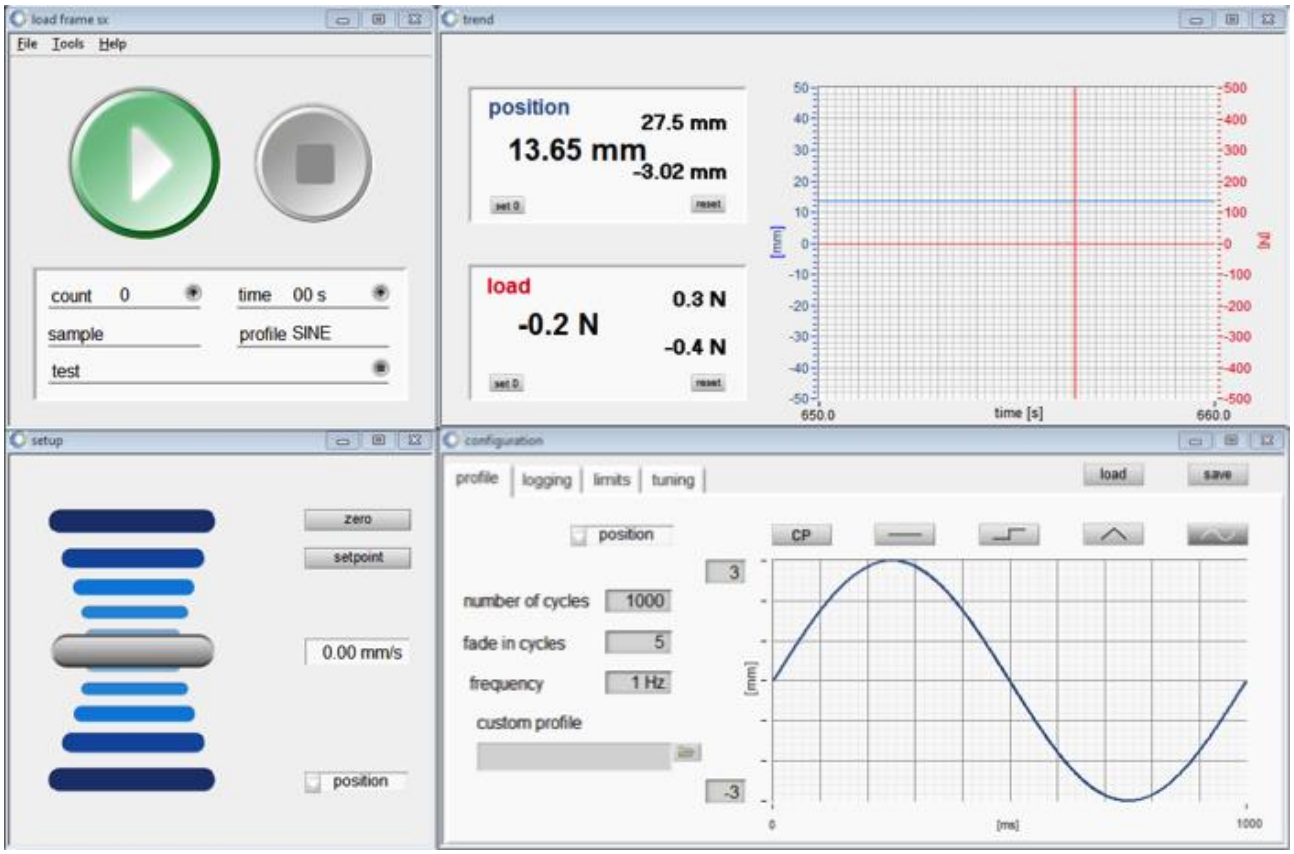
Electronics

- Replacement of motor drives
- Replacement of safety circuits and emergency stop
- Inspection and re-wiring of load sensor
- Integration of air cooling

New Operating

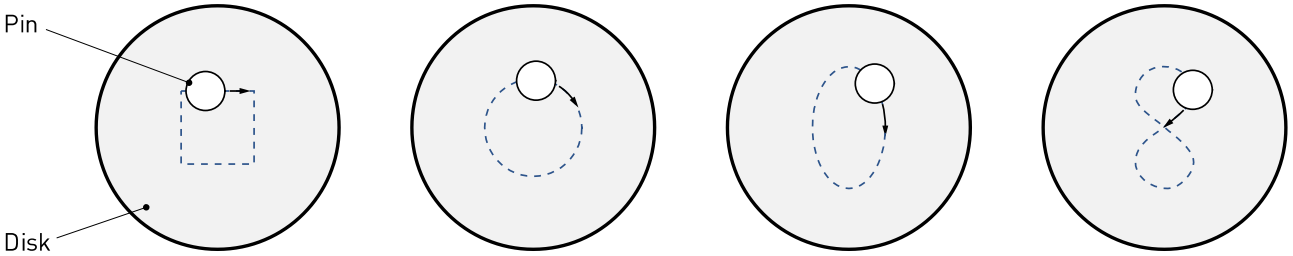
New Software – THELKIN POD SX

- Easy-to-use, well-arranged and flexible software interface
- Base functionalities include
  - Specimen setup window
  - Standard & custom test profiles
  - Soft start option
  - Flexible data acquisition tools
  - Advanced limit and specimen failure definitions
  - Control parameter setting
  - Numeric and graphical data displays



Certification

- CE certificate
- UL listed components
- Declaration of conformity



Individually programmable motion profiles.

SPECIFICATIONS

Number of stations		6
Motion profile	oscillating or rotating	
Load control	Servo-pneumatic	
Vertical force	N	450
Temperature control	electrical	
Frequency	Hz	2
Environment	- Dry or lubricated - Room temperature or heated up to 37°C	

Software	THELKIN (Ortho SX)	
Weight	kg	75
Electrical power	VAC	115 / 230
Pneumatic	bar	6

[1]Typical values, can be changed to user requirements.

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SWISS MADE