

Pin-on-Disc Friction Analyzer



The new generation of analyzing friction forces

2D measurement system made for the universal determination of the friction coefficient of compliant sample materials like rubber or elastomers.

Benefits

+ Excellent value:

- Best disc performance up to 500 RPM
- 2D force measurement up to 10 N
- Controlled normal force in the mN range
- Guided and easy calibration for all axes

+ Efficient instrument:

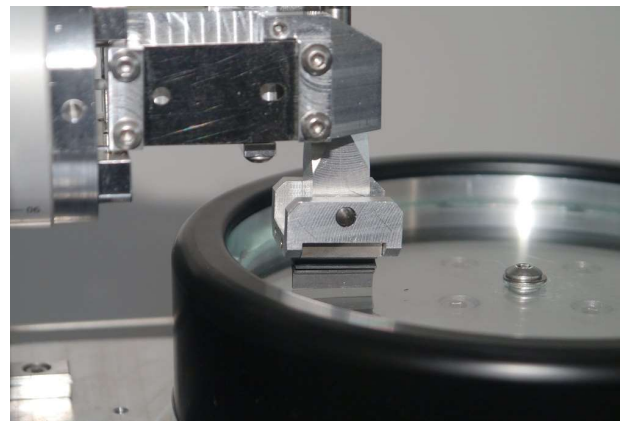
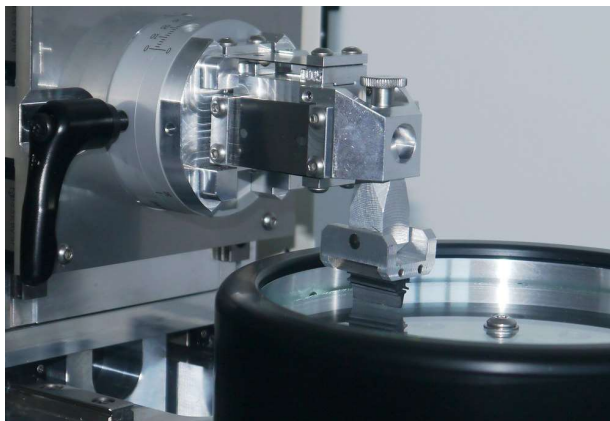
- Fast measurement and analysis
- Small footprint of 350 x 250 x 340 mm³
- Low weight with only 20 kg

+ Versatile measurement:

- Uni and bi-directional motion
- Highly flexible experiment configuration
- Investigation of parameter influences
- Fully automated measurement process
- Cycle and experiment-based visualization

+ Dispensing function:

- Adjustable water drop dispensing
- Controllable down to 0.05 ml per drop
- Easy water discharging box



Technology and parameters

Drives	Superior motion systems for rotational and linear high-resolution positioning (1µm)
Sensors	2D force sensor based on strain gauges with high resolution (5 mN)
Software	GUI for experiment configuration, execution, calibration and data export
Data export	Data easily exportable via Ethernet und customizable file formats
Peripherals	Comes with a PC & Display, Ethernet and 220V/120W Power Supply

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GUI – Experiment configuration:

WIPER FRICTION TESTER

Project Settings | Experiment Configuration | Experiment Execution | Force Sensor Calibration | Device Information

Experiment Step Table:

You can define your experiment step plan below. Please use drag n' drop actions to add, move, copy, duplicate and delete a step.

Type	Name	Duration	Water consumption	Cumulative volume
+	Mandatory step - referencing	20.00 s	0.00 ml	0.00 ml
+	Reference syringe [automatic insert]	120.00 s	0.00 ml	0.00 ml
+	1	10.45 s	0.50 ml	0.50 ml
+	2	16.67 s	0.05 ml	0.55 ml
+	3	16.67 s	0.05 ml	0.60 ml
+	4	16.67 s	0.05 ml	0.65 ml
+	5	16.67 s	0.05 ml	0.70 ml
+	6	16.67 s	0.05 ml	0.75 ml
+	7	16.67 s	0.05 ml	0.80 ml
+	8	16.67 s	0.05 ml	0.85 ml
+	9	16.67 s	0.05 ml	0.90 ml
+	10	16.67 s	0.05 ml	0.95 ml
+	11	16.67 s	0.05 ml	1.00 ml
+	12	16.67 s	0.05 ml	1.05 ml
+	13	16.67 s	0.05 ml	1.10 ml
+	14	16.67 s	0.05 ml	1.15 ml
+	15	16.67 s	0.05 ml	1.20 ml
+	16	16.67 s	0.05 ml	1.25 ml
Exp. steps: 26, Ref. steps: 2, Interrupts: 1		Total runtime: 00h : 09m : 4	Total volume: 1.75 ml	Volume resets: 1

Parameterize experiment steps:

You can edit and parameterize the selected step in the fields below. Changes will be saved immediately.

- Horizontal Axis**
 - Radius (sample center): 45.0 mm
- Normal Force**
 - Force value (FN): 0.272 N
 - Controlled:
 - Lift off before step:
 - Lift off after step:
- Pre-alignment**
 - Enabled:
 - Pre-alignment cycles: 10
 - Dispensing enabled:
- Measurement**
 - Record data:
- Rotation Table**
 - Experiment mode: unidirectional
 - Rotational speed: 128 RPM
 - Acceleration: 640 RPM/s²
 - Starting direction: clockwise
 - Velocity (sample center): 603 mm/s
 - Acceleration time: 0.20 s
 - Cycles: 25

GUI – Experiment execution & results:

WIPER FRICTION TESTER

Project Settings | Experiment Configuration | Experiment Execution | Force Sensor Calibration | Device Information

Controls: Start | Stop (warning: dispensing)

Experiment state:

FN [N]: 0.00

FT [N]: 0.00

CoF: 0.00

Plot Scale:

Autoscale Cycle Graph

	Min	Max	Steps
X	0.00	360.00	20.00
Y			

Autoscale Experiment Graph

	Min	Max	Steps
X	0.00	25.00	
Y			

Cycle Graph:

Legend: FN (blue), FT (orange), CoF (grey)

Relative rotation angle [°]

Experiment Graph:

Legend: FN (blue), FT (orange), CoF (grey)

Number of Cycle

Type	Name	Duration	Fn warning
+	Mandatory step - referencir	20.00 s	
+	Reference syringe [automat	120.00 s	
+	1	10.45 s	
+	2	16.67 s	
+	3	16.67 s	
+	4	16.67 s	
+	5	16.67 s	
+	6	16.67 s	
+	7	16.67 s	
+	8	16.67 s	
+	9	16.67 s	
+	10	16.67 s	
+	11	16.67 s	
+	12	16.67 s	
+	13	16.67 s	
+	14	16.67 s	
+	15	16.67 s	
+	16	16.67 s	
+	17	16.67 s	
+	18	16.67 s	
+	19	16.67 s	
+	20	16.67 s	
Total runtime: 00h : 09m : 4			