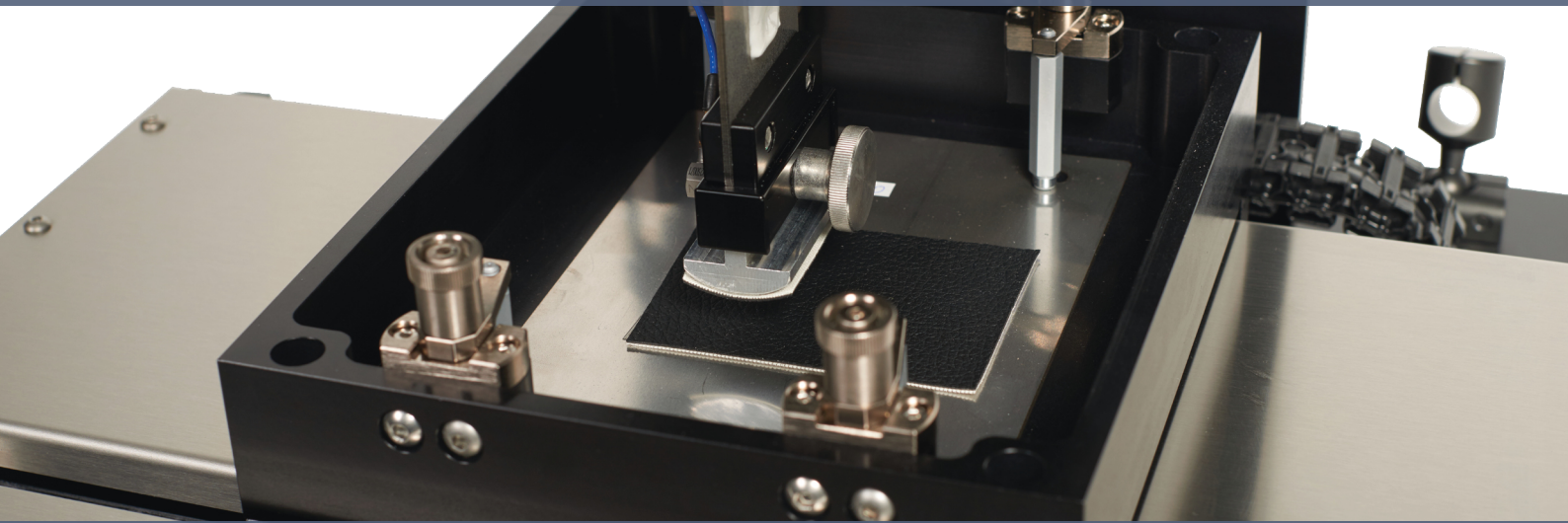


# H3P



## Test bench for the investigation of stick-slip effects under the influence of third substances

### Application

The H3P is specifically designed to measure the stick-slip effect under the influence of third substances such as oils, greases, water, paste and dust. Third substances influence the tribological properties of materials such as friction forces, stick-slip, as well as abrasion and wear. The test bench enables the systematic measurement and analysis of these properties. In addition, the influence of corrosive and wear-promoting lubricants can be quantified and tested for abrasion with this test technique.

### Ease of use

Simplicity and user-friendliness were the focus of the development. The control elements for mounting the samples are freely accessible and clearly arranged. The total size of the test stand makes it possible to place it in a climatic chamber.

### High relative velocity

The high relative velocity of 1 to 150 mm/s enables the simulation of new applications such as window regulators and sliding roofs. In addition, customer-specific test scenarios can be used for stick-slip investigations. In addition to the well-known abrasion and wear tests, tests with real dynamic profiles are optionally possible.

### Targets

- Investigation of material pairings under the influence of third substances such as oil, grease, dust and lubricants.
- The change of the dynamic friction force and the influence of lubrication between a material pair over time can be tested using a specially integrated abrasion mode.
- Measurement of the influence of dust on seals against painted sheet metal or glass.

### Target Markets

- Automotive
- White Goods
- Shoes / Textiles
- Floors/Sports Floors
- Sports Equipment
- Prosthetics
- Biomechanics

### Specification

- Velocity range: 1 - 150 mm/s
- Normal force: 2 - 60 N
- Movement: Linear, Sine, Random
- Dwell time with constant force: adjustable
- Suitable temperature range: - 20°C up to + 70°C
- Range for static and dynamic friction force: 0 - 35 N
- Results:
  - Risk-Priority-Number
  - Max. Acceleration
  - Number of Impulses
  - Impulses per millimeter
  - Groan rate
  - Friction forces
  - Coefficients of friction

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### Infeed

The infeed is done by a coil drive. This allows a constant force during the entire measurement. It ensures that the preset normal force does not deviate during the measurement. In addition, the coil drive enables position-controlled infeed. Certain applications can thus be simulated even more realistically. The adjustable normal force can be adjusted within a range of 2-60 N. The contact pressure can be adjusted in a range of 2-60 N.

### Integrated climatic concept

The test bench can be placed inside a climatic chamber to illustrate real load scenarios. This allows tests of material pairings in a climatic range from -20°C to +70°C.

### Applications

Investigation of material pairings under the influence of third substances such as oil, grease, dirt and lubricants. The effectiveness of greases and lubricants between a material pairing can be tested using a specially integrated abrasion mode. Measurement of the influence of dust on seals against painted sheet metal or glass.

### Options

#### Abrasion and wear tests

The programming of the test setup is particularly important for abrasion tests, since measurements for the change in friction force and stick-slip are required right after the abrasion runs.

#### Lifetime testing

Lifetime tests evaluate the loss of functionality over the lifetime of a product. This is usually linked to physical parameters such as the mileage driven of a vehicle or similar. In order to simulate the service life in the laboratory in a short time, time-lapse methods should be used. For this purpose, a real road profile is available which correlates with the number of kilometers driven on the road.

### Benefit

- Objective measured values for the selection of the right material combination and third substance
- Reduction of development times
- Increased objective product quality and savings in rework and warranty costs
- Increase of subjective product quality by avoiding loss of gloss and matting of surfaces
- Abrasion and/or functional analysis of coatings, material properties, surface structures, textile finishing products, leather finishing products, lubricants, felts and many more.

