



# Hegewald & Peschke

Meß- und Prüftechnik GmbH

Product information

## Specimen grips for high temperature tests

For tensile tests and compression tests up to 1,100°C



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**Application:**

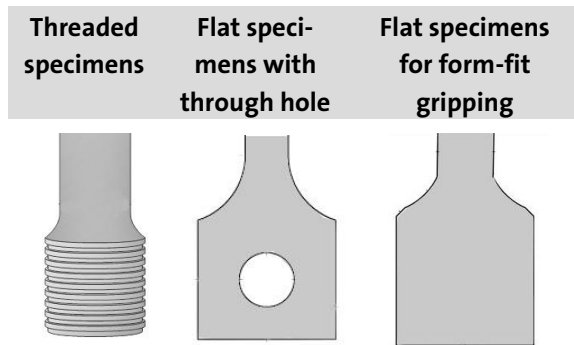
- Tensile or compression tests in the high temperature range up to and including 1100°C. (Optionally based on ceramic materials up to 1800°C).
- Force fit between specimen and testing machine

**Advantages:**

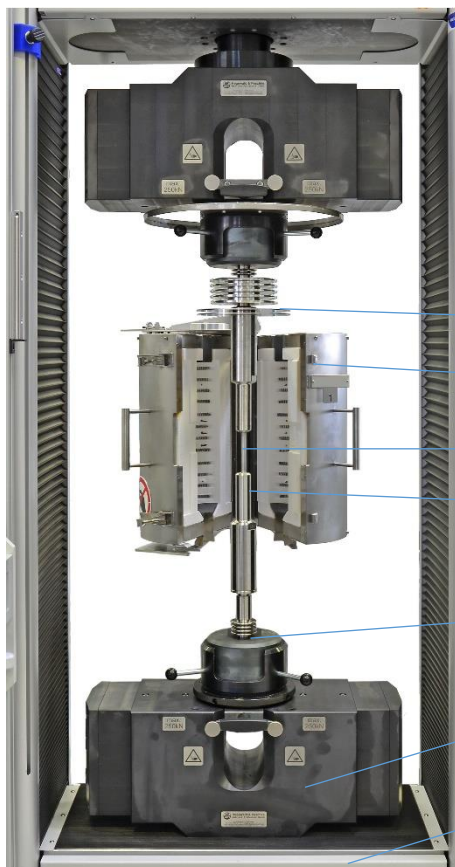
- Easy change between room temperature and high temperature testing
- Self-aligning system for tensile tests to avoid parasitic lateral forces
- Easy change of specimens
- Large variety of specimens (threaded specimens, flat specimens with through-hole in the shoulder area or form-fit specimens)
- Use of nickel-based alloys for rods up to 1100°C or ceramic materials for testing applications up to 1800°C

**Overview specimen grips for high-temperature tests**

- Various materials for different load-temperature stresses:
  - $F_{max}$  50 kN,  $T_{max}$  950°C: NIMONIC® 80A
  - $F_{max}$  250 kN,  $T_{max}$  1100°C: NICROFER® 6025 H
 (The range of application results from the material properties and the chemical constitution of the specimen in the respective temperature range in relation to the rod material. (see official material data sheets))
- Different specimen geometries for tensile tests:



**Example of a high temperature tensile test system:**



- Different constructive designs
  - Universal specimen grips with adapters for different specimen shapes & sizes
  - Compact specimen grips for a specific specimen geometry
- Different test types:
  - Load rods for tensile tests
  - Load rods for compression tests

- Heat reflector
- High temperature furnace
- Threaded specimen
- Compact hot tensile pullrod for threaded specimens
- Specimen holder with slot for ball nut R50
- Hydraulic grip with groove for insertion of the specimen holder at the top and bottom
- Testing machine



### Load strings for hot tensile test:

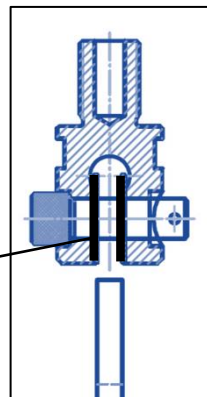
Depending on the variety of specimens, a complete load rod or the configuration via a universal rod plus intermediate adapter is recommended. The hot tensile rods are held by the ball nuts (R50 or R30) on the head side. The spherical bearing allows the load rod to self-align during the tensile test and meet the requirements of ASTM E1012. The rod lengths and adapters are designed in accordance with DIN 50125, ISO 6892-2 and ASTM E21.

### High temperature universal pullrods:

- Suitable for testing different specimen sizes and shapes
- Design: Universal rod + adapter for flat or threaded specimens of different sizes (see illustration on the right)

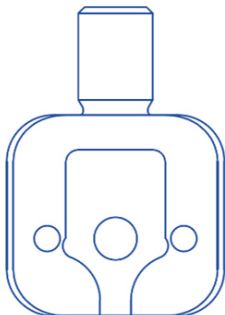
(1) Adapter for threaded specimens (M6 to M16)

(2) Adapter for flat specimens: Force is transmitted form-fit via bolts. Centric alignment of the specimen in the axial load string is achieved by means of distance plates.

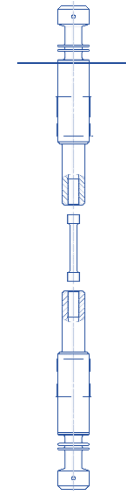


### High-temperature compact pullrods

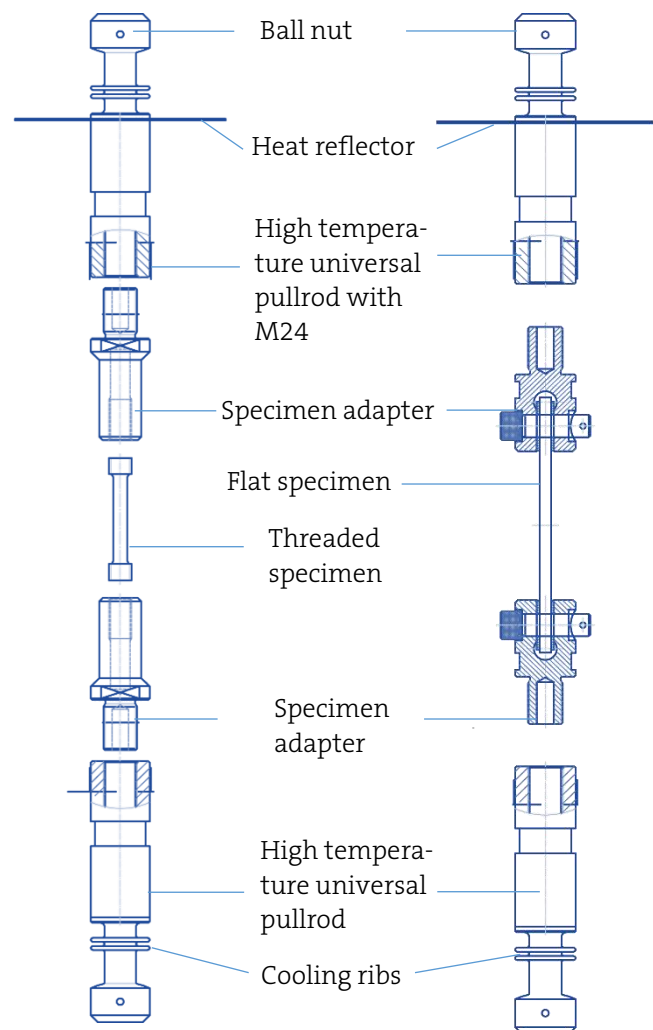
(1) For form-fitting flat specimens (form fit via shoulder radius)



(2) For the testing of thread specimens with identical size in each case (M6 to M24)



### Setup high temperature universal pullrods for Threaded specimens      Flat specimen





**High temperature compression device**

- For testing cylindrical specimens
- Compact design without additional adapters
- Adaptation usually rigid via sleeve-bolt principle (R60/30)



**Optional accessories:**

**Handling device for test systems for high temperature tensile tests (16-008-241)**

- Vertical insertion of the high-temperature pullrods into the high-temperature furnace
- Parking position for up to 8 hot tensile linkages



**Setting fixture for mounting hot tensile specimen grips (16-018-001)**



**Overview article structure specimen grips for high-temperature tests**

Item	Material	NIMONIC® 80A	NICROFER® 6025 H
High-temperature compact pullrods for threaded specimen M6 to M20		16-018-1..	16-022-1..
High-temperature compact pullrods for form-fitting flat specimens			16-022-954 (customized design)
High temperature universal pullrods M24		16-018-002	16-022-001
Adapter for threaded specimens		16-018-4.. (M10 to M16)	16-022-4.. (M6 to M16)
Adapter for pierced flat specimens		16-018-552	16-022-5..
Distance plates		16-022-5..	16-022-6..
High temperature compression plates		16-020-000	16-020-002

