



Product information

Specimen holder

For testing threaded-end and shouldered-end specimens, screws, nuts and fittings as well as for hot tensile tests





Application:

Specimen holders are suitable for material testing of specimens that cannot be gripped directly with vice or wedge type grips due to their size, geometry or composition (e.g. threaded-end, shouldered-end and screw specimens).

A wide variety of test methods can be carried out in accordance with standards, such as

Testing according to EN ISO 898-1:

- Tensile test under wedge loading on finished screws
- Tensile tests for finished screws for determination of tensile strength R_m ,
- Tensile tests on full-size screws for determination of elongation after fracture A_f and stress at $0.0048d$ non-proportional elongation R_{pf}
- Tensile test on screws with reduced robustness due to the head design
- Tensile test for screws with waisted shank
- Proof load test on finished screws
- Tensile test on drilled specimens

Testing according to EN ISO 898-2:

- Proof load test on nuts

Testing of metallic tensile specimens according to EN ISO 6892-1:

- Tensile tests on round specimens with threaded heads, shoulder heads, conical heads (specimen shapes B, C, D to DIN 50125)

Structure of modular clamping system specimen holder:

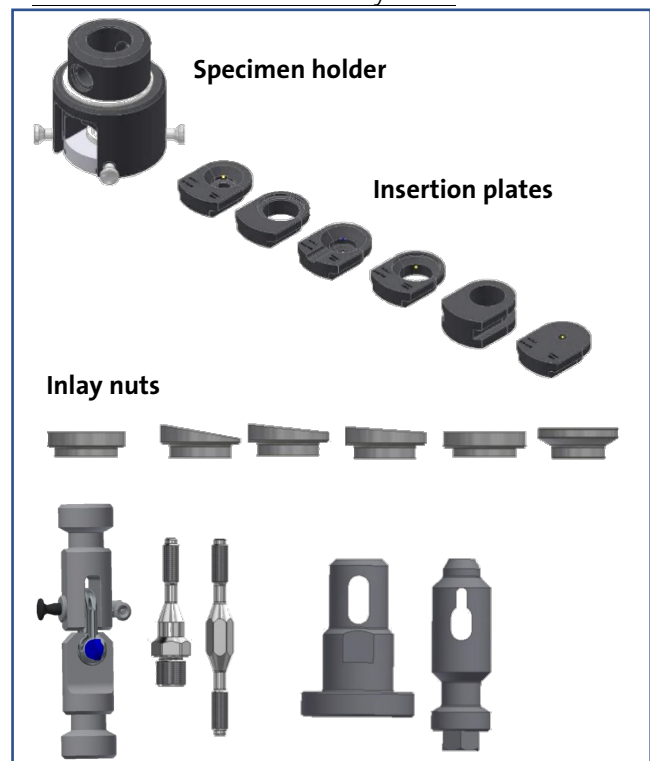
In order to cover all these different requirements in compliance with standards, the specimen holder has a modular accessory kit.

Insertion plates are mounted in the specimen holder via a slide-in system. These are available in different versions so that they can be used for direct gripping for example of threaded- or shouldered-end specimens acc. to DIN 50125.

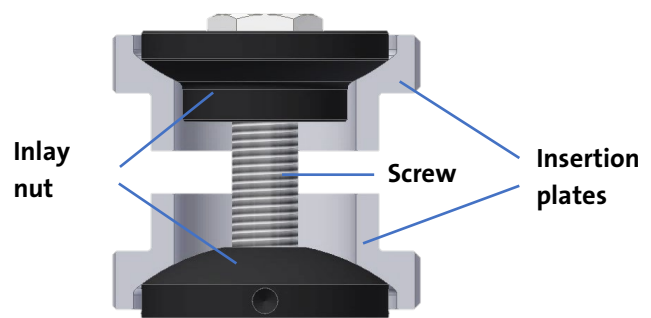
For testing screws, nuts or similar, the insertion plates are used indirectly as a holder for an inlay nut. The inlay nuts are specially developed for specific specimen shapes and sizes.

This modular design ensures that one specimen holder can be used to test the complete range of screws as well as a wide variety of other specimen shapes.

Structure of the connection system:



Example set-up for screw testing:





Advantages of the specimen holder:

- High flexibility: modular clamping system enables the testing of a wide variety of specimen shapes (*threaded-end specimens, shouldered-end specimens, screws, fittings, nuts*) and the performance of various test methods (*tensile test, tensile test under wedge loading, compression test, rupture test, proof load test*) with just one clamping fixture
- Cost-efficient and variable
- Future expansion of the test setup possible for new test requirements
- Form-fit clamping
- Standard-compliant testing in accordance with EN ISO 898
- Simple and fast specimen gripping
- Rigid or movable specimen mounting via inlay nuts
- No introduction of lateral forces during bolt testing
- Use of the special extensometer MFS to measure the elongation over the entire length of the bolt
 - Necessary for carrying out proof load tests (in accordance with EN ISO 898-1 section 9.6) in combination with determining the ultimate tensile load in the tensile test → more efficient and sustainable: saves time and material (only one specimen is used for both tests)
 - Recommended for the exact determination of the yield strength R_{pf} on finished bolts in accordance with EN ISO 898-1 section 9.3
 - Special design of the specimen holder with openings for attaching the extensometer to the bolt from above and below
- Suitable for standard-compliant clamping of load application rods for hot tensile tests acc. to EN ISO 6892-1 via spherical insertion plates

Models of the specimen holder:

- Different capacities: 20 kN, 50 kN, 250 kN, 600 kN, 1200 kN

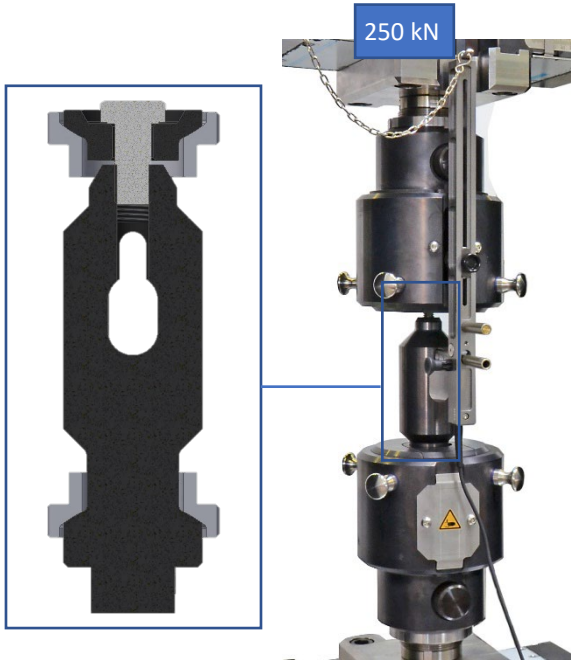


- Version for room temperature or temperature chamber
- Different connections:
 - Direct connection to the testing machine
 - Connection via coupling adapter, e.g. to hydraulic grips or screw type wedge action grips or wedge type grips
- Version for clip-on extensometer MFS with openings in the specimen holder



Application examples for specimen holders

Screw testing with MFS clip-on extensometer



Shackle testing



Coupling of the specimen holder to the screw type wedge action grip

