Pin-Type Bearing Test Fixture for Metallic Sheet

Built to ASTM E238 — Standard Test Method for Pin-Type Bearing Test of Metallic Materials



OVERVIEW

Pin-type bearing fixture for determining the bearing yield and ultimate strength of metallic sheet and plate. A hardened pin passes through a hole in the specimen and is loaded in tension through a clevis, so the pin bears against the hole edge while load and hole elongation are recorded.

KEY FEATURES

- Hardened, ground bearing pins in a range of diameters
- Clevis design applies load symmetrically to the specimen hole
- Provision for a bearing extensometer to measure hole elongation
- Supports a range of edge-distance-to-diameter ratios
- Paired with a wedge or pin grip on the opposite specimen end

TECHNICAL SPECIFICATIONS

Test method	Pin-type bearing (tension through pinned hole)
Test type / loading	Tensile loading via clevis and pin
Specimens	Flat sheet or plate with edge hole, per ASTM E238
Load capacity	50 kN standard; higher capacities on request
Fixture material	Heat-treated alloy steel clevis
Bearing pins	Hardened, ground steel pins; diameters to order
Machine connection	Clevis pin or threaded adapter, to suit customer frame
Compatible frames	Electromechanical and servo-hydraulic universal test machines

APPLICATIONS

- Aerospace sheet and plate alloys
- Bolted and riveted joint design data
- Aluminum and titanium alloy qualification
- Material allowables development

ABOUT THE STANDARD

ASTM E238 determines the bearing properties of metallic materials using a pin loaded in a hole near the specimen edge. Bearing yield strength is derived from load versus hole-elongation data, and bearing ultimate strength from the maximum load. Results support the design of riveted, bolted and pinned joints, particularly in aerospace sheet and plate.

Ordering & customization: Specify specimen thickness, pin diameter, edge distance, capacity and machine connection when ordering.

Specifications are typical and may vary by configuration; confirm at time of quote. Users should refer to the current edition of the standard for test procedures. Part ref. UGC-E238-BTF