

High Alignment Hydraulic Grips

Test Applications

- Static Tensile Tests
- Tension-Compression Stress Reversal Tests of Metals
- Low Cycle Fatigue (LCF) of metals (ASTM E606)
- High Cycle Fatigue (HCF) of metals (ASTM E466)
- Ratings available to 500 kN (110 kip)
- Ambient and High Temperature versions

GB5-600 grips are uniquely and specially engineered for stress and strain controlled tests where the loading profile goes through zero position or zero load, including low cycle fatigue or strain controlled testing per ASTM E606. In those applications, the lateral and vertical stiffness of the machine changes which requires special engineering considerations to maintain and hold high sample alignment requirements – or test samples will fail prematurely in buckling mode. GB5-600 grips include self aligning and self locking spherical seats at both ends to counter misalignment of the load train. High temperature grips rated to 1000⁰ C (1800F) are available.

Design features

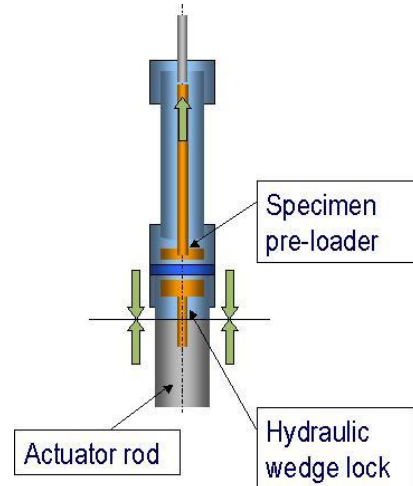
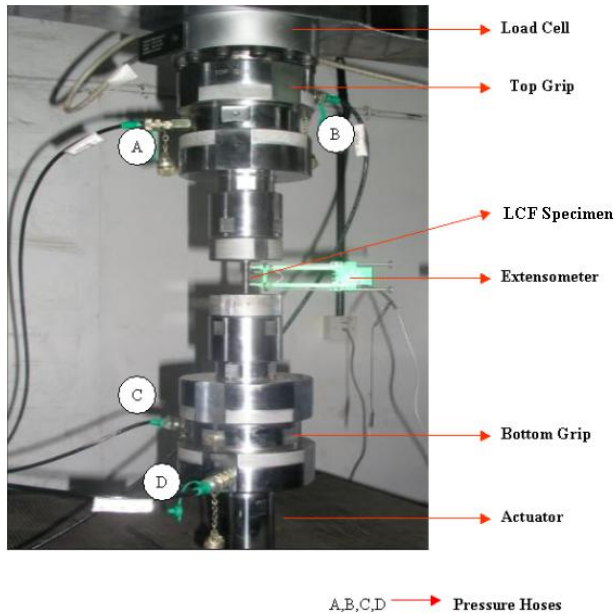
- Self locking and self aligning
- Backlash free design
- Quick connect and self sealing hydraulic hose connections
- Lightweight and easily mountable without special tools
- Electronically controlled grip pressure and activation
- Adapter Cups for threaded and button head specimens

Overview

These unique grips feature spherical seals at both ends to ensure minimal angular and axial misalignment of load frame crossheads, load cell and actuator mountings. Using these grips does not require load train alignment prior to testing. Hydraulic pre-load eliminates the need to tighten the specimen. Potential damage to specimen is eliminated and there is no need for additional tools. Hydraulic accumulator charge ensures grip integrity even in the event of power failure.

Spiral washers or other anti-backlash fixtures are eliminated. The grip features quick and easy grip mountings. Simply screw on and activate pressure. Stress and strain controlled testing of metals is no longer dependent on operator skills and experience. GB5-600 grips are easy-on, easy-off with no additional tools means greater productivity and safety. Note that alignment checks can be done on the grips using strain gauged high strength LCF steel specimen, in accordance with ASTM E 606. The grips require high pressure oil supply and are compatible with hydraulic test machines that have 3000 psi (210 Bar) power sources. The hydraulics can be tapped from the main system with a special manifold. Optional inexpensive handpumps provided for use with all electric static test machines.





Activating the grip locks the hydraulic wedge lock and activating the press locks the specimen pre-loader.

Grip Models

Model	Load Rating	Environment
GB5-601	50 kN (11250 lb)	Ambient
GB5-602	100 kN (22500 lb)	Ambient
GB5-603	300 kN (67500 lb)	Ambient
GB5-604	500 kN (112,500 lb)	Ambient
GB5-601-900C	50 kN (11250 lb)	Rated to 900C (1652 F)
GB5-602-900C	100 kN (22500 lb)	Rated to 900C (1652 F)
GB5-603-900C	250 kN (56000 lb)	Rated to 900C (1652 F)

Sample Inserts

Grip-Model-Insert	Description
JB5-60X-Thd	Insert matched to sample thread – English or Metric
JB5-60X-Button	Insert matched to button headed sample– English or Metric
JB5-602-CF1	Special Collet for Flat samples 0 to 10 mm thick x 25 mm wide - 100 kN grip
JB5-60X-900C-Thd	Insert matched to sample thread – English or Metric – Rated 900C

Options

- Hydraulic manifold for tapping into 3000 psi power packs
- Manual hand pump rated for 3000 psi.
- Hydraulic power pack rated 3000 psi for use with electromechanical test machines.
- High temperature versions rated to 1000C (1800 F)
- Similar mechanical version available for forces up to 50 kN (11 kip)