

## Hydraulic Wedge Action Grips

### For static and fatigue testing applications

GB5-400 Series hydraulic wedge action grips are designed for static and fatigue testing of metals, composites and other materials that require relatively high test forces.

They are commonly used with servo hydraulic test machines where high pressure hydraulic fluid is available. They are also supplied with static electromechanical test machines. An optional grip hydraulic power pack is available (reference model GHPP) with pressure ratings to 10,000 psi (700 bar).

Hydraulic operation enables reliable, consistent and adjustable clamp loading which is important in the case of relatively fragile samples. The grips feature a side opening design for simple and quick specimen insertion. A variety of wedge jaw faces are available for different specimens.

These grips are designed so that bending strains are minimized. The grip bodies move vertically to open and close wedge jaws which are held in position on the sample. The dual acting wedge jaws move simultaneously relative to the grip centerline, ensuring correct specimen alignment, removing bending strains that invalidate test results.



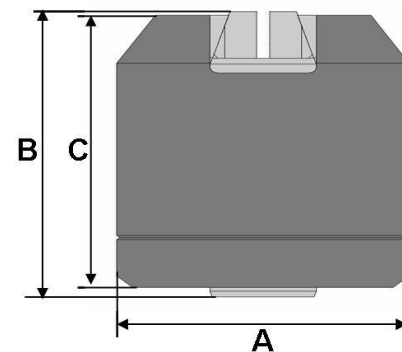
Glass fiber composites are a common test application where hydraulic clamping and wedge action is important.



	GB5-401	GB5-402	GB5-403
Fatigue Rating	25 kN (5500 lb)	50 kN (11250 lb)	100 kN (22500 lb)
Grip Diameter	160 mm (6.2 in)	160 mm (6.2 in)	220 mm (8.7 in)
Max Sample Width	25 mm (1 in)	25 mm (1 in)	75 mm (3 in)
Max Sample Thickness	10 mm (0.4 in)	10 mm (0.4 in)	21 mm (0.82 in)

	GB5-404	GB5-405	GB5-406
Fatigue Rating	200 kN (45000 lb)	500 kN (112500 lb)	1000kN (225 kip)
Grip Diameter	275 mm (10.8 in)	340 mm	480mm
Max Sample Width	75 mm (3 in)	25 mm (1 in)	75 mm (3 in)
Max Sample Thickness	27 mm (1.1 in)	10 mm (0.4 in)	21 mm (0.82 in)

Model	dimensions (mm)		Female Thread
	A	B	
B5-401	Φ160	190	M27X2
B5-402	Φ160	190	M27X2
B5-403	Φ220	220	M27X2
B5-404	Φ275	235	M50X2
B5-405	Φ340	300	M50X2
B5-406	Φ480	386	M90X2



Equivalent English threads available.

Wedge Jaws	Wedge shape	Specimen (mm)
B5-401-11	V - rounds	3 – 5
B5-401-12	V - rounds	6 – 9
B5-401-1	Flat	0 – 5
B5-401-2	Flat	5 - 10
B5-402-11	V - rounds	3 – 5
B5-402-12	V - rounds	6 – 9
B5-402-1	Flat	0 – 5
B5-402-2	Flat	5 - 10
B5-403-11	V - rounds	2.5 to 7
B5-403-12	V - rounds	7 to 12
B5-403-13	V - rounds	12 to 16
B5-403-14	V - rounds	16 to 21
B5-403-1	Flat	0 to 7
B5-403-2	Flat	7 to 15
B5-403-3	Flat	15 to 19
B5-404-11	V - rounds	3 to 7
B5-404-12	V - rounds	7 to 11
B5-404-13	V - rounds	11 to 15
B5-404-14	V - rounds	15 to 19
B5-404-15	V - rounds	19 to 23
B5-404-16	V - rounds	23 to 27
B5-404-1	Flat	0 to 6
B5-404-2	Flat	6 to 12
B5-404-3	Flat	12 to 18
B5-404-4	Flat	18 to 24

NOTE: Grips require a hydraulic power source (3000 psi or 210 Bar) with a manifold to interface the grips to the machine. If the grips are placed on a hydraulic test machine with oil available at 3000 psi, then the grips require following:

- B3-300 Hydraulic Grip Control Panel
- \* Manifold to adjust hydraulic pressure
  - \* Ensures safety in event of power trip
  - \* Requires hydraulic source of 210 bar (3 ksi)

Hydraulic hand pump is optionally available.



Testing static and fatigue characteristics of metal commonly requires high clamping forces.



## Special Design for Environmental Chambers from -70°C to 350°C (660°F)

GB5-400-HT Series wedge action grips feature a special design for use inside of environmental chambers. The wedge head is designed so the grip wedges are inside the chamber at operating temperature while the hydraulic power cylinder remains at ambient temperatures, located above and below the chamber. The wedge heads are opened and closed remotely by use of a remote hand held pendant to eliminate need to cool them down when changing specimens. Sample changeover is quick. Because the grip head operates in the chamber, thermal gradients are minimized.

Design Shown Below

