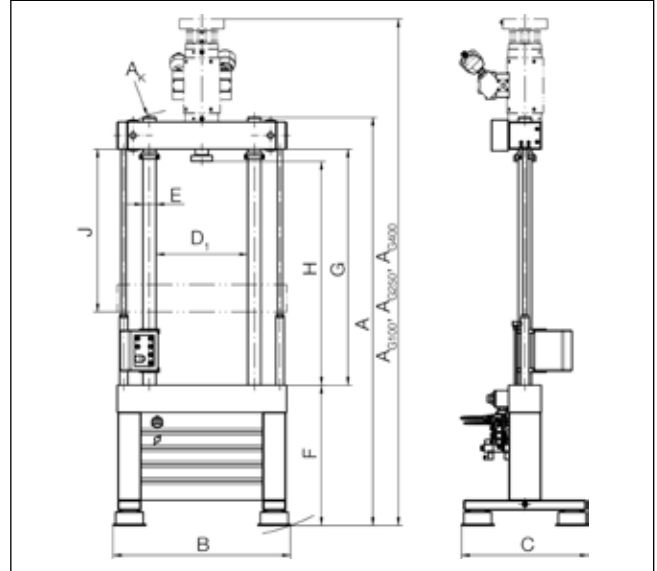


Product Information

Servo-hydraulic load frames – HB Series



HB250 with t-slotted platform and hydraulic operated wedge grips



Drawing of HB load frame

Application

HB Series servo-hydraulic load frames with testing actuator mounted in the upper crosshead are used for determining characteristic values of materials under fatigue loading, including S-N tests (fatigue test), fracture mechanics, LCF and component fatigue.

Description of operation

These 2-column load frames are designed for materials testing under dynamic load in a closed load path. The frame is supported on anti-vibration leveling units, ensuring negligible force transmission to the floor during normal operation. Where tests or environmental conditions are of a critical nature it is advisable to use the optionally available air-springs, which have a natural frequency of approximately 3 – 6 Hz.

HB load frames have particularly high axial and lateral stiffness, enhancing testing system performance and enabling higher frequencies and specimen deformations. In addition, high lateral forces which can occur during compression and flexure tests are easily absorbed, making the frames suitable for combined tensile or compression/torsion loads.

The frames feature extremely high-precision alignment. After installation of the testing actuator and load cell the alignment accuracy is ± 0.1 mm per meter; for distances less than 350 mm the offset is a constant 0.05 mm. Plane parallelism is equal to or better than 0.03 mm per 100 mm.

All fixtures are mounted via a flange with centering ring, eliminating the need for subsequent alignment of the load path.

Features

- 4 standard nominal capacities from 50 kN to 500 kN
- ergonomic working height
- hard-chromed columns for precise guiding of upper crosshead
- hydraulic clamping and adjustment for easy positioning of upper crosshead
- safety guard to comply with EC Machinery Directive, depending on application
- version with integrated T-slotted platform particularly suitable for fatigue tests on components

Product Information

Servo-hydraulic load frames – HB Series

Technical data

Dynamic nominal force	[kN]	50	100	250	500
Crosshead clamping			electro-hydraulic		
Crosshead adjustment			electro-hydraulic		
A _{G100} – max. height of test frame at 100 mm test stroke	[mm]	3035 (3535 ¹⁾	3120 (3620 ¹⁾	3595 (4095 ¹⁾	4045 (4545 ¹⁾
A _{G250} – max. height of test frame at 250 mm test stroke	[mm]	3335 (3835 ¹⁾	3420 (3920 ¹⁾	3895 (4395 ¹⁾	4345 (4845 ¹⁾
A _{G400} – max. height of test frame at 400 mm test stroke	[mm]	3635 (4135 ¹⁾	3720 (4220 ¹⁾	4195 (4695 ¹⁾	4635 (5135 ¹⁾
A – max. height of columns	[mm]	2510 (3010 ¹⁾	2510 (3010 ¹⁾	3015 (3515 ¹⁾	3250 (3750 ¹⁾
A _k – tilted height for erection	[mm]	2680 (3150 ¹⁾	2680 (3150 ¹⁾	3200 (3680 ¹⁾	3500 (3980 ¹⁾
B – max. width of test frame	[mm]	1090	1090	1235	1525
C – max. depth of test frame	[mm]	780	780	1130	1390
D ₁ – column spacing	[mm]	565	565	670	800
E – column diameter	[mm]	80	80	100	120
F – height top edge lower crosshead	[mm]	860	860	900	900
G – max. test area height ²⁾	[mm]	1450 (1950 ¹⁾	1450 (1950 ¹⁾	1775 (2275 ¹⁾	2120 (2620 ¹⁾
H – max. working test area height ³⁾	[mm]	1385 (1885 ¹⁾	1375 (1875 ¹⁾	1685 (2185 ¹⁾	2020 (2520 ¹⁾
J – crosshead adjustment travel	[mm]	1000	1000	1150	1250
Weight without t-slotted platform ⁴⁾	[kg]	1015 (1065 ¹⁾	1015 (1065 ¹⁾	1650 (1725 ¹⁾	3660 (3780 ¹⁾
Weight with t-slotted platform ⁴⁾	[kg]	1515 (1565 ¹⁾	1515 (1565 ¹⁾	2650 (2750 ¹⁾	4860 (4980 ¹⁾
Frame stiffness at 1000 mm crosshead separation	[kN/mm]	850	850	1300	2100
Item No.					
Standard height		•077533	•924779	•040159	•079720
Standard height with t-slotted platform		•077370	•079752	•040158	•079728
Extended by 500 mm		•750972	•077534	•079755	•079721
Extended by 500 mm with t-slotted platform		•077535	•079753	•079756	•079733

¹⁾ Dimensions for extended version by 500 mm

²⁾ Distance between lower and upper crossheads

³⁾ Distance between piston flange and lower crosshead with retracted piston

⁴⁾ Weight without actuator, load cell and any fixtures

Accessories

Description	Item No.
Vibration-damping feet for HB 50	•020439
Vibration-damping feet for HB 100	•924749
Vibration-damping feet for HB 250	•924770
Vibration-damping feet for HB 500	•935215

Rubber air-spring element for shock and vibration isolation, natural frequency dependent on static loading 3 - 6Hz, maximum permissible pressure 6 bar.

Description	Item No.
Safety guard for HB 50 / 100	•935500
Safety guard for HB 50 / 100 - 500 mm increased height	on request
Safety guard for HB 250	•007594
Safety guard for HB 250 - 500 mm increased height	on request
Safety guard for HB 500	•079736
Safety guard for HB 500 - 500 mm increased height	•079738

Aluminium profile construction with Makrolon panels, surrounds the testing machine on all four sides, safety door at front with electric monitoring and interlocking.