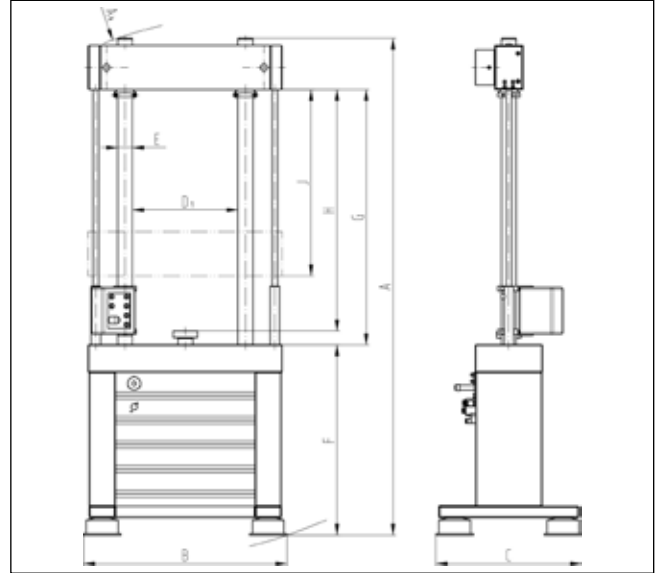


Product Information

Servo-hydraulic load frames – HA Series



HA 100 on air-springs with hydraulic wedge grips



Drawing of HA load frame

Application

With the testing actuator installed in the lower cross-head and the load cell on the upper crosshead, HA series load-frames represent the classical servo-hydraulic testing machine as used for determination of material characteristic values under dynamic loading, e.g. S-N test (fatigue test), fracture mechanics, LCF (low-cycle 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.

HA 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
- actuator recessed into the lower crosshead to minimize piston rod length.
- ergonomic working height
- particularly suitable for integration of a high-temperature furnace or chamber
- hard-chromed columns for precise guiding of upper crosshead
- hydraulic clamping and adjustment for easy positioning of upper crosshead
- integrated oil-drip tray for collecting minor leakage
- safety guard to comply with EC Machinery Directive, depending on application

Product Information

Servo-hydraulic load frames – HA Series

Technical data

Dynamic nominal force kN		50	100	250	500
Crosshead clamping		electrohydraulic			
Crosshead adjustment		electro-hydraulic			
A – max. height of test frame	[mm]	2720 (3220 ¹)	2720 (3220 ¹)	2980 (3480 ¹)	3430 (3930 ¹)
A _K – tilted height for erection	[mm]	2850 (3330 ¹)	2850 (3330 ¹)	3150 (3620 ¹)	3650 (4125 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 ²	[mm]	1020	1020	1020	1020
G – max. test area height ³	[mm]	1370 (1870 ¹)	1370 (1870 ¹)	1615 (2115 ¹)	2000 (2500 ¹)
H – max. working test area height ⁴	[mm]	1260 (1760 ¹)	1290 (1790 ¹)	1525 (2025 ¹)	1900 (2400 ¹)
J – crosshead adjustment travel	[mm]	1000	1000	1150	1250
Weight ⁵	[kg]	975 (1025 ¹)	975 (1025 ¹)	1600 (1675 ¹)	3600 (3720 ¹)
Frame stiffness at 1000 mm crosshead separation	[kN/mm]	850	850	1300	2100
Suitable for actuators with a maximum stroke of:	[mm]	250	100	100	100
Item No.					
Standard height		• 039825	• 025238	• 924810	• 935267
Increased height +500 mm		• 073968	• 935832	• 073969	• 073970

¹ Dimensions for increased height versions 073968, 935832, 073969 and 073970

² With vibration-damping feet

³ Distance between lower and upper crossheads

⁴ Distance between piston flange and upper crosshead with retracted piston

⁵ Weight without actuator, load cell and any fixtures

Accessories

Description	Item No.
Vibration-damping feet for HA 50	• 020439
Vibration-damping feet for HA 100	• 924749
Vibration-damping feet for HA 250	• 924770
Vibration-damping feet for HA 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 HA 50 / 100	• 036535
Safety guard for HA 50 / 100 - 500 mm increased height	• 036534
Safety guard for HA 250	• 037386
Safety guard for HA 250 - 500 mm increased height	• 075872
Safety guard for HA 500	• 048463
Safety guard for HA 500 - 500 mm increased height	• 075876

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