6-Axis Hexapod

Cost-Effective Hexapod

H-820

- Six degrees of freedom, travel ranges to 100 mm / 60°
- Load capacity up to 20 kg
- Velocity when fully loaded to 20 mm/s
- Repeatability to ±0.5 µm
- Works in any orientation
- Fast response behavior

Standard-class 6-axis positioning system
Parallel-kinematic design for six degrees of freedom, making it significantly more compact and stiff than serial-kinematic systems, higher dynamics, no moved cables: Higher reliability, reduced friction.

Direct drive with brushless DC motors (BLDC)

Indirect measuring principle
Rotary encoder on motor shaft

PIVirtualMove
The simulation software simulates the limits of the workspace and load capacity of a hexapod. Therefore, even before purchasing, you can check whether a particular hexapod model can handle the loads, forces, and torques occurring in an application. For this purpose, the simulation tool takes the position and motion of the hexapod as well as the pivot point and several reference coordinate systems into account.

Application fields
Industry and research. For life science, biotechnology, automation, micromachining

Motion	Unit		H-820.D2
Active axes			X | Y | Z | θX | θY | θZ
Travel range in X	mm		±50
Travel range in Y	mm		±50
Travel range in Z	mm		±25
Rotation range in θX	°		±15
Rotation range in θY	°		±15
Rotation range in θZ	°		±30
Maximum velocity in X	mm/s		20
Maximum velocity in Y	mm/s		20
Maximum velocity in Z	mm/s		20
Maximum angular velocity in θX	mrad/s		200
Maximum angular velocity in θY	mrad/s		200
Maximum angular velocity in θZ	mrad/s		200
Typical velocity in X	mm/s		2
Typical velocity in Y	mm/s		2
Typical velocity in Z	mm/s		2
Typical angular velocity in θX	mrad/s		20
Typical angular velocity in θY	mrad/s		20
Typical angular velocity in θZ	mrad/s		20

Positioning	Unit	Toleran-ce	H-820.D2
Minimum incremental moti-on in X	µm	Typ.	5
Minimum incremental moti-on in Y	µm	Typ.	5
Minimum incremental moti-on in Z	µm	Typ.	5
Minimum incremental moti-on in θX	µrad	Typ.	12.5
Minimum incremental moti-on in θY	µrad	Typ.	12.5
Minimum incremental moti-on in θZ	µrad	Typ.	12.5
Unidirectional repeatability in X	µm	Typ.	±1.5
Unidirectional repeatability in Y	µm	Typ.	±1.5
Unidirectional repeatability in Z	µm	Typ.	±0.5
Unidirectional repeatability in θX	µrad	Typ.	±8
Unidirectional repeatability in θY	µrad	Typ.	±8
Unidirectional repeatability in θZ	µrad	Typ.	±25
Backlash in X	µm	Typ.	30
Backlash in Y	µm	Typ.	30
Backlash in Z	µm	Typ.	3
Backlash in θX	µrad	Typ.	30
Backlash in θY	µrad	Typ.	30
Backlash in θZ	µrad	Typ.	300
Integrated sensor			Incremental rotary encoder

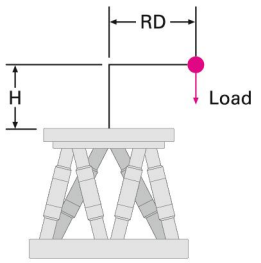
Drive Properties	Unit		H-820.D2
Drive type			Brushless DC motor
Nominal voltage	V		24

Mechanical Properties	Unit		H-820.D2
Maximum load capacity, base plate in any orientation	kg		10
Maximum load capacity, base plate horizontal	kg		20
Maximum holding force, base plate in any orientation	N		5
Maximum holding force, base plate horizontal	N		200
Overall mass	kg		15
Material			Aluminum

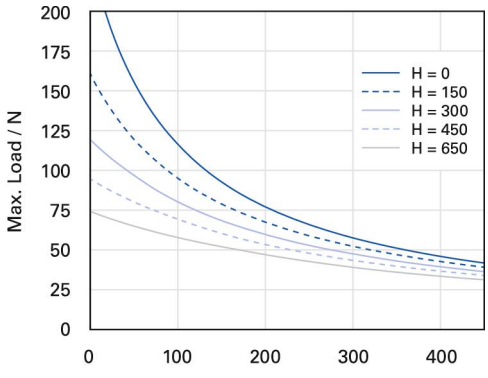
Miscellaneous	Unit		H-820.D2
Operating temperature range	°C		0 to 50
Connector for data transmission			HD D-sub 78 (m)
Connector for supply voltage			M12 4-pole (m)
Recommended controllers / drivers			C-887.5x

Technical data specified at 22±3 °C.
The maximum travel ranges of the individual coordinates (X, Y, Z, θX, θY, θZ) are interdependent. The data for each axis shows its maximum travel range when all other axes are in the zero position of the nominal travel range and the default coordinate system is in use, or rather when the pivot point is set to 0,0,0.
Connecting cables are not included in the scope of delivery and must be ordered separately.
Ask about customized versions.

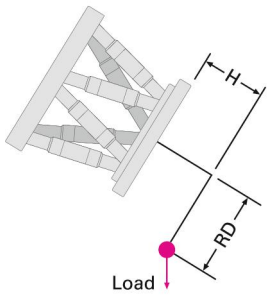
Drawings / Images



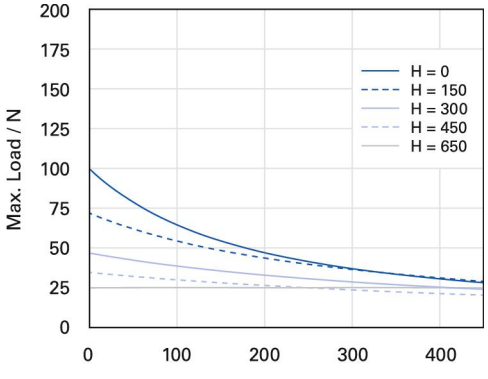
H-820.D2



Maximum loads on the H-820.D2 when mounted horizontally

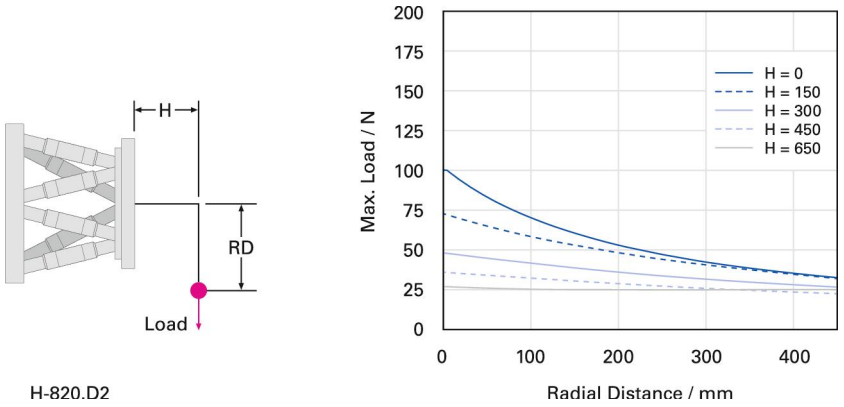


H-820.D2

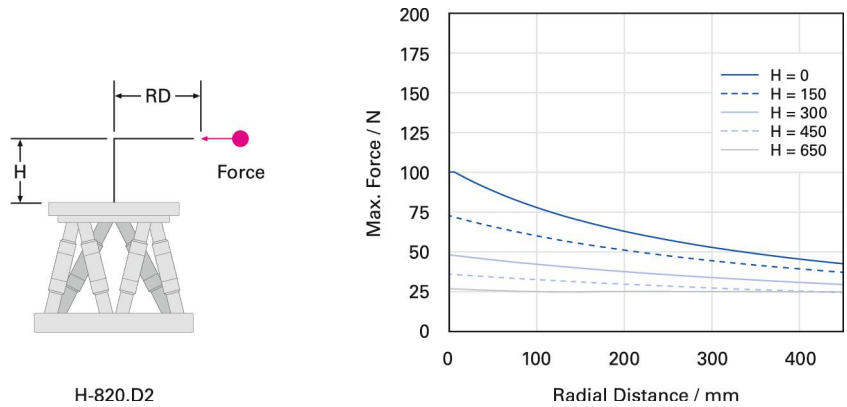


Maximum loads on the H-820.D2 when mounted at the most unfavorable angle

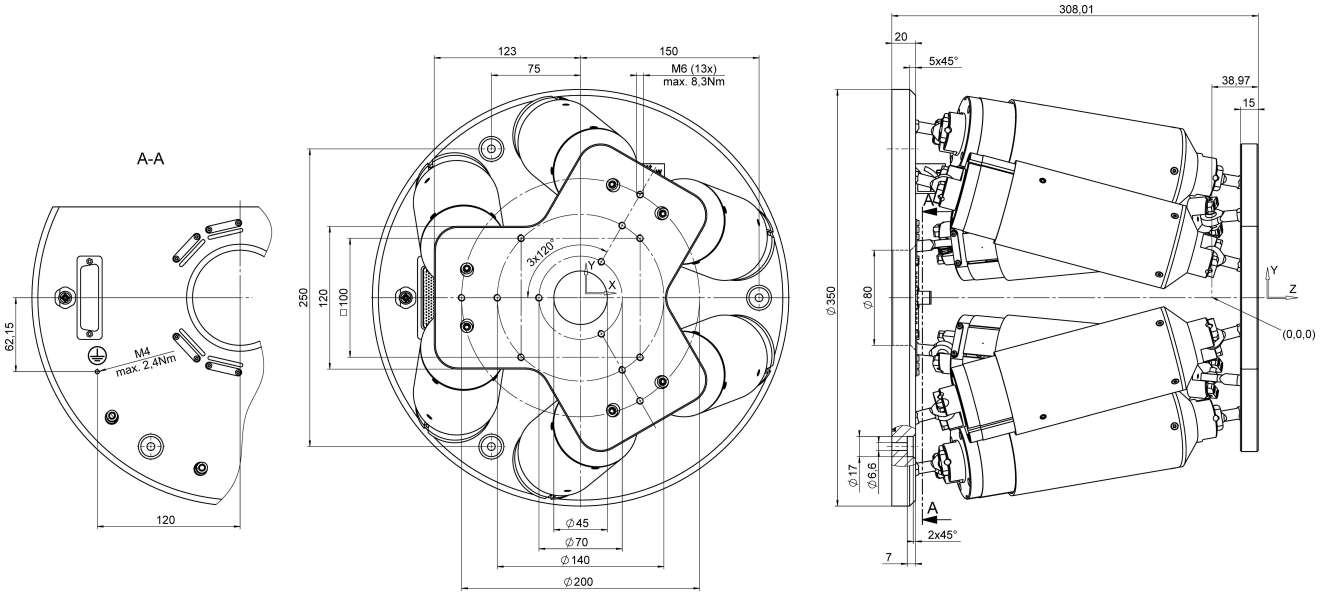
Drawings / Images



Maximum loads on the H-820.D2 when mounted vertically



Maximum permissible force acting on the H-820.D2 when mounted horizontally



H-820.D2, dimensions in mm, at zero position of nominal travel range

Order Information

H-820.D2
Hexapod microrobot, basic model, 20 mm/s, 20 kg load, D-sub connector. Connecting cables are not included in the scope of delivery and must be ordered separately.