

6-Axis Hexapod

Compact and Precise



H-824

- Load capacity to 10 kg, self-locking version
- Travel ranges to 45 mm / 25°
- Minimum incremental motion to 0.3 µm
- Repeatability to ±0.1 µm / ±2 µrad
- Velocity to 25 mm/s

Precision-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. Compact due to folded drive design.

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 micromanipulation, biotechnology, semiconductor manufacturing

Motion	Unit		H-824.D2	H-824.G2
Active axes			X Y Z θX θY θZ	X Y Z θX θY θZ
Travel range in X	mm		±22.5	±22.5
Travel range in Y	mm		±22.5	±22.5
Travel range in Z	mm		±12.5	±12.5
Rotation range in θX	°		±7.5	±7.5
Rotation range in θY	°		±7.5	±7.5
Rotation range in θZ	°		±12.5	±12.5
Maximum velocity in X	mm/s		25	1
Maximum velocity in Y	mm/s		25	1
Maximum velocity in Z	mm/s		25	1
Maximum angular velocity in θX	mrad/s		270	11
Maximum angular velocity in θY	mrad/s		270	11
Maximum angular velocity in θZ	mrad/s		270	11
Typical velocity in X	mm/s		10	0.5
Typical velocity in Y	mm/s		10	0.5
Typical velocity in Z	mm/s		10	0.5
Typical angular velocity in θX	mrad/s		55	5.5
Typical angular velocity in θY	mrad/s		55	5.5
Typical angular velocity in θZ	mrad/s		55	5.5

Positioning	Unit	Tolerance	H-824.D2	H-824.G2
Minimum incremental motion in X	µm	Typ.	2	0.3
Minimum incremental motion in Y	µm	Typ.	2	0.3
Minimum incremental motion in Z	µm	Typ.	1	0.3
Minimum incremental motion in θX	µrad	Typ.	12	3.5
Minimum incremental motion in θY	µrad	Typ.	12	3.5
Minimum incremental motion in θZ	µrad	Typ.	14	3.5
Unidirectional repeatability in X	µm	Typ.	±0.5	±0.25
Unidirectional repeatability in Y	µm	Typ.	±0.5	±0.25
Unidirectional repeatability in Z	µm	Typ.	±0.15	±0.1
Unidirectional repeatability in θX	µrad	Typ.	±3	±2
Unidirectional repeatability in θY	µrad	Typ.	±3	±2
Unidirectional repeatability in θZ	µrad	Typ.	±2.5	±2
Backlash in X	µm	Typ.	1.5	2
Backlash in Y	µm	Typ.	1.5	2
Backlash in Z	µm	Typ.	1	0.7
Backlash in θX	µrad	Typ.	15	14
Backlash in θY	µrad	Typ.	15	14
Backlash in θZ	µrad	Typ.	30	17

Drive Properties	Unit		H-824.D2	H-824.G2
Drive type			DC motor	DC gear motor
Nominal voltage	V		24	24

Mechanical Properties	Unit		H-824.D2	H-824.G2
Stiffness in X	N/µm		1.7	1.7
Stiffness in Y	N/µm		1.7	1.7
Stiffness in Z	N/µm		7	7
Maximum load capacity, base plate in any orientation	kg		2.5	5
Maximum load capacity, base plate horizontal	kg		5	10
Maximum holding force, base plate in any orientation	N		5	50
Maximum holding force, base plate horizontal	N		15	100
Overall mass	kg		8	8
Material			Aluminum	Aluminum

Miscellaneous	Unit		H-824.D2	H-824.G2
Operating temperature range	°C		-10 to 50	-10 to 50
Connector for data transmission			HD D-sub 78 (m)	HD D-sub 78 (m)
Connector for supply voltage			M12 4-pole (m)	M12 4-pole (m)
Recommended controllers / drivers			C-887.5x	C-887.5x

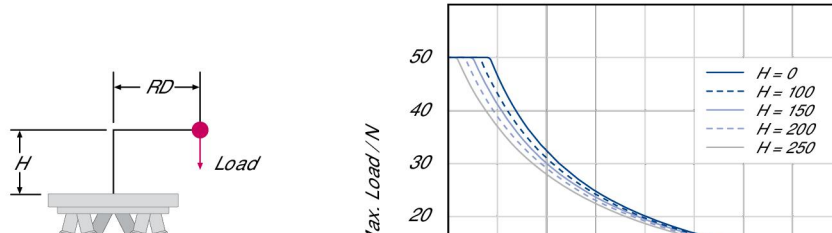
Technical data specified at 22±3 °C.

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.

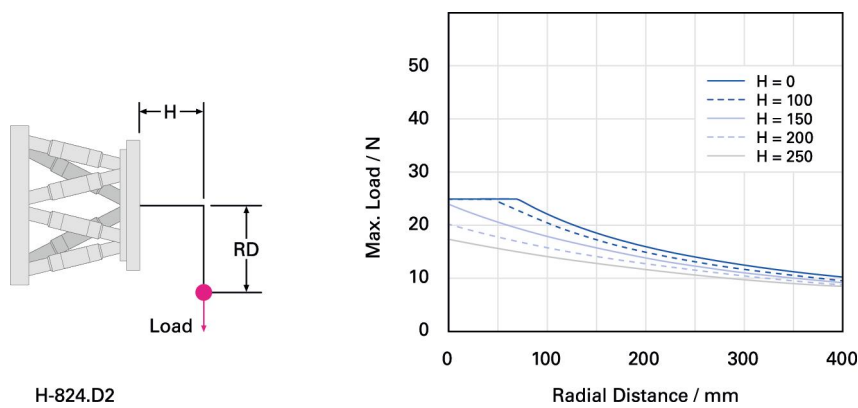
Connecting cables are not included in the scope of delivery and must be ordered separately.

Ask about customized versions.

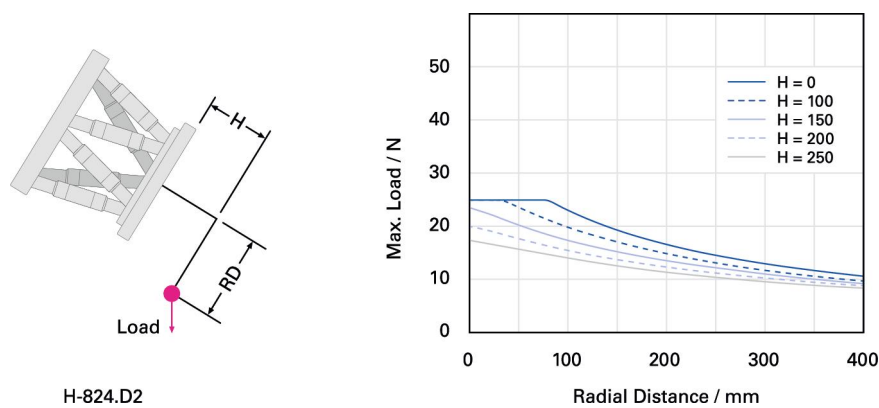
Drawings / Images



Maximum loads on the H-824.D2 when mounted horizontally

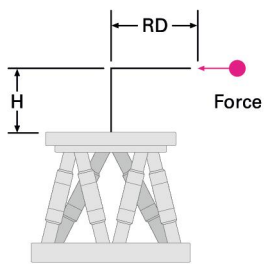


Maximum loads on the H-824.D2 when mounted vertically

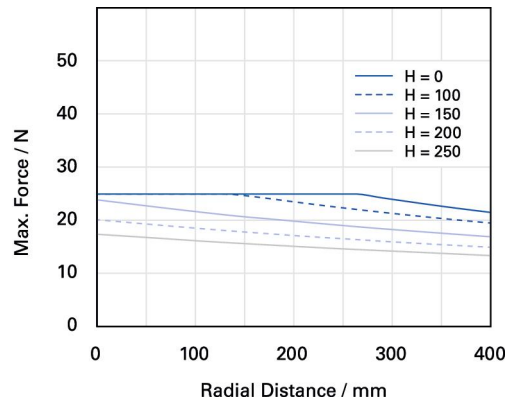


Maximum loads on the H-824.D2 when mounted at the most unfavorable angle

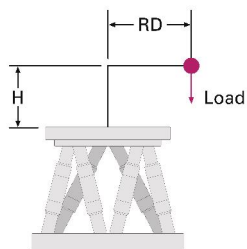
Drawings / Images



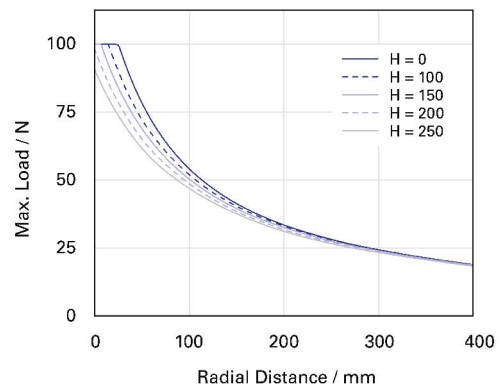
H-824.D2



Maximum permissible force acting on the H-824.D2 when mounted horizontally

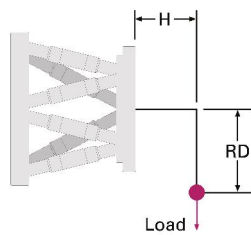


H-824.G2

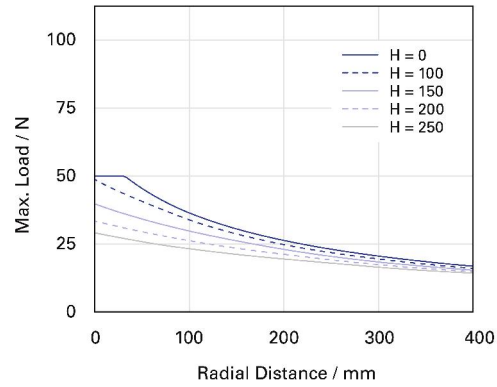


Maximum loads on the H-811.G2 when mounted horizontally

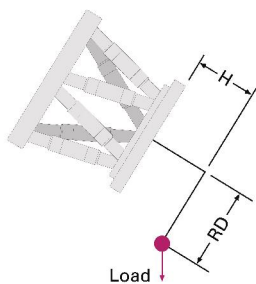
Drawings / Images



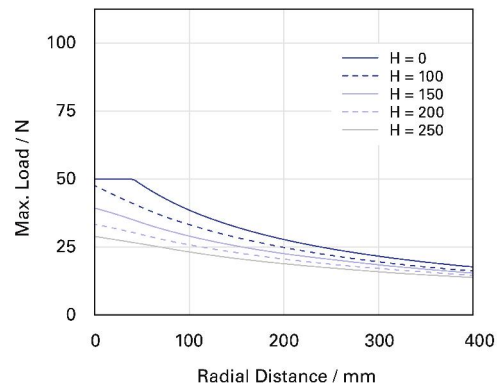
H-824.G2



Maximum loads on the H-824.G2 when mounted vertically

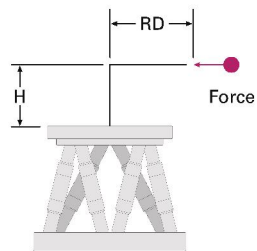


H-824.G2

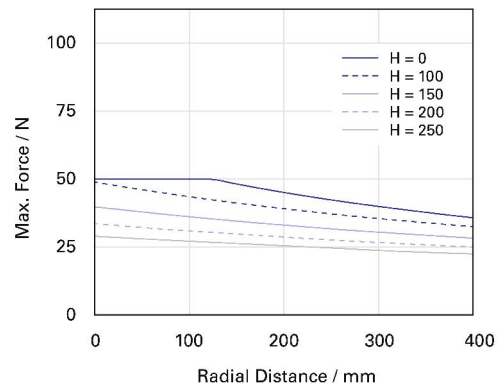


Maximum loads on the H-824.G2 when mounted at the most unfavorable angle

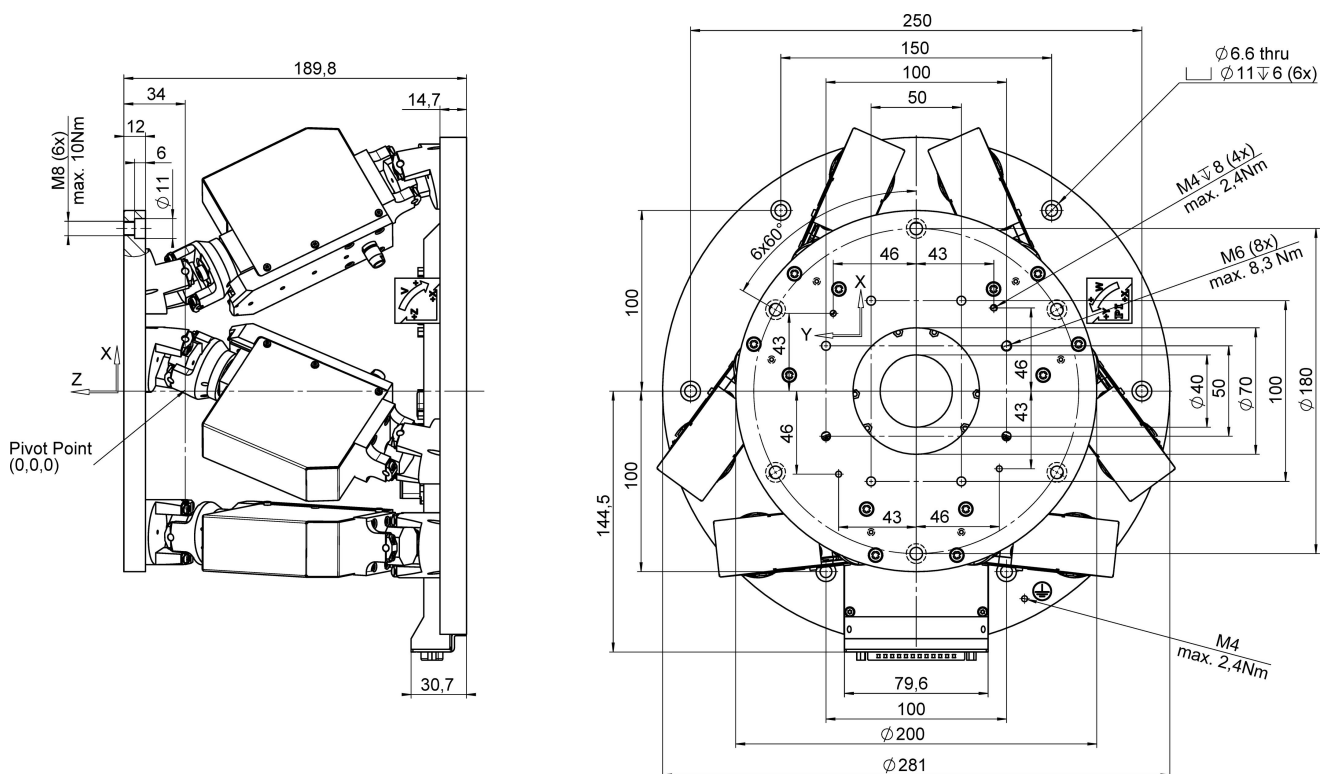
Drawings / Images



H-824.G2



Maximum permissible force acting on the H-824.G2 when mounted horizontally



H-824, dimensions in mm, at zero position of nominal travel range

Order Information

H-824.D2

Compact hexapod microrobot, direct drive, 25 mm/s, 5 kg load, D-sub connector. Connecting cables are not included in the scope of delivery and must be ordered separately.

H-824.G2

Compact hexapod microrobot, gearhead, 1 mm/s, 10 kg load, D-sub connector. Connecting cables are not included in the scope of delivery and must be ordered separately.