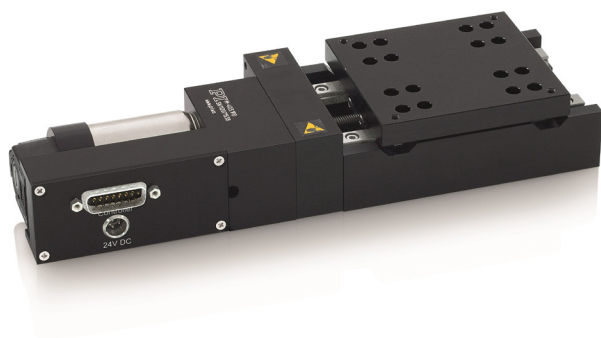


Linear Stage

Inexpensive, Reliable, Precise



M-403

- Inexpensive cost-optimized design for precise positioning
- Travel ranges from 25 mm to 200 mm
- Resolution to 0.018 μm
- Min. incremental motion to 0.2 μm
- Preloaded precision leadscrew
- Heavier loads with M-413 and M-414

Application fields

Measuring technology, alignment.

Specifications

	M-403.1PD M-403.2PD M-403.4PD M-403.6PD M-403.8PD	M-403.1DG M-403.2DG M-403.4DG M-403.6DG M-403.8DG	M-403.12S M-403.22S M-403.42S M-403.62S M-403.82S	Unit	Tolerance
Active axes	with ActiveDrive X	with DC gear motor X	with stepper motor X		

Motion and positioning	M-403.1PD M-403.2PD M-403.4PD M-403.6PD M-403.8PD	M-403.1DG M-403.2DG M-403.4DG M-403.6DG M-403.8DG	M-403.12S M-403.22S M-403.42S M-403.62S M-403.82S	Unit	Tolerance
Travel range	25 / 50 / 100 / 150 / 200	25 / 50 / 100 / 150 / 200	25 / 50 / 100 / 150 / 200	mm	
Integrated sensor	Rotary encoder	Rotary encoder	-		
Sensor resolution	4000	2000	-	Cts./rev.	
Design resolution	0.25	0.018	0.16	μm	typ.
Minimum incremental motion	0.25	0.2	0.2	μm	typ.
Backlash	6	10	6	μm	typ.
Unidirectional repeatability	1	1	1	μm	typ.

Motion and positioning	M-403.1PD M-403.2PD M-403.4PD M-403.6PD M-403.8PD	M-403.1DG M-403.2DG M-403.4DG M-403.6DG M-403.8DG	M-403.12S M-403.22S M-403.42S M-403.62S M-403.82S	Unit	Tolerance
Pitch	200	200	200	μrad	typ. over 100 mm
Yaw	200	200	200	μrad	typ. over 100 mm
Velocity	10 ⁽¹⁾	2.5	3	mm/s	max.
Reference switch repeatability	1	1	1	μm	typ.

Mechanical properties	M-403.1PD M-403.2PD M-403.4PD M-403.6PD M-403.8PD	M-403.1DG M-403.2DG M-403.4DG M-403.6DG M-403.8DG	M-403.12S M-403.22S M-403.42S M-403.62S M-403.82S	Unit	Tolerance
Drive screw pitch	1	1	1	mm	
Gear ratio	–	2304:81	-		
Stiffness in motion direction	3.5	3.5		N/μm	±20 %
Motor resolution	-	-	6400 ⁽¹⁾	steps/rev	
Load capacity ⁽²⁾	200	200	200	N	max.
Push/pull force	50	50	50	N	max.
Lateral force	100	100	100	N	max.

Drive properties	M-403.1PD M-403.2PD M-403.4PD M-403.6PD M-403.8PD	M-403.1DG M-403.2DG M-403.4DG M-403.6DG M-403.8DG	M-403.12S M-403.22S M-403.42S M-403.62S M-403.82S	Unit	Tolerance
Drive type	DC motor, ActiveDrive	DC gear motor	2-phase stepper motor ⁽³⁾		
Operating voltage	24	0 to ±12	24	V	
Motor power	26	2.5	4.8	W	nominal

Miscellaneous	M-403.1PD M-403.2PD M-403.4PD M-403.6PD M-403.8PD	M-403.1DG M-403.2DG M-403.4DG M-403.6DG M-403.8DG	M-403.12S M-403.22S M-403.42S M-403.62S M-403.82S	Unit	Tolerance
Operating temperature range	-20 to 65	-20 to 65	-20 to 65	°C	
Material	Al (black anodized)	Al (black anodized)	Al (black anodized)		
Mass	1.7 / 1.8 / 2.1 / 2.2 / 2.5	1.7 / 1.8 / 2.1 / 2.2 / 2.5	1.7 / 1.8 / 2.1 / 2.2 / 2.5	kg	±5 %
Connector	D-sub 15 (m), incl. 3 m cable	D-sub 15 (m), incl. 3 m cable	D-sub 15 (m), incl. 3 m cable		
Recommended controllers/drivers	C-863.11 C-884	C-863.11 C-884	C-663		

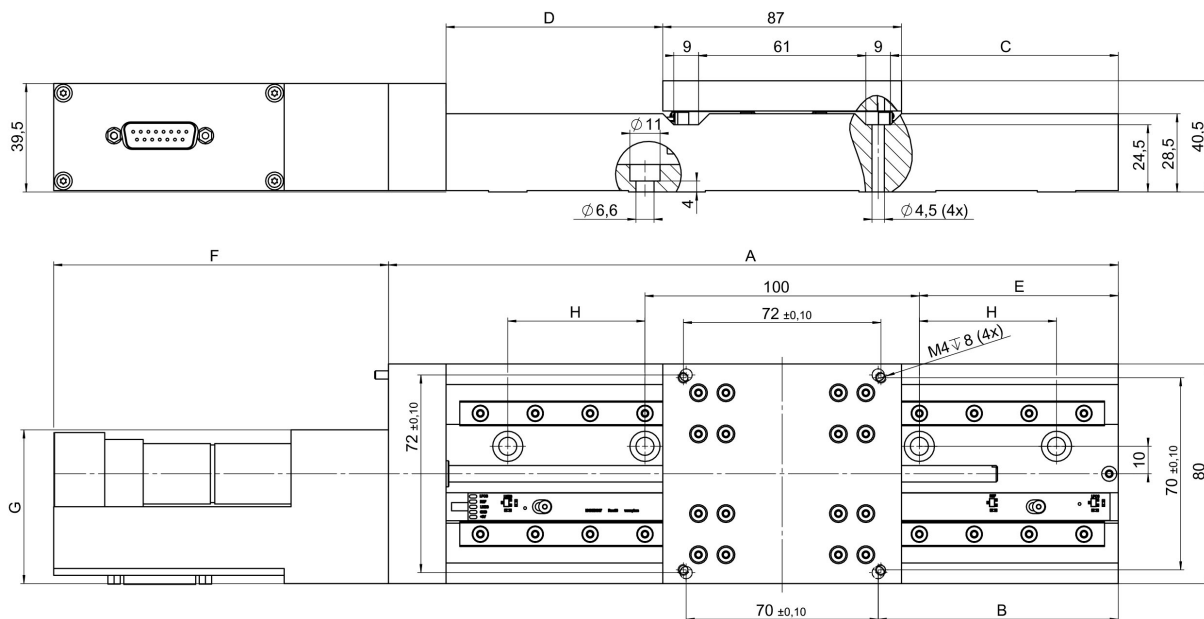
(1) Recommended velocity

(2) Load capacity: Max. possible normal load capacity, centered, vertical load (linear stage horizontal).

(3) Max. 0.85 A/phase; 400 full steps/rev., motor resolution with C-663 stepper motor controller.

Ask about customized versions.

Drawings / Images



	M-403.1xx M-404.1xx	M-403.2xx M-404.2xx	M-403.4xx M-404.4xx	M-403.6xx M-404.6xx	M-403.8xx M-404.8xx
A	141	166	216	266	316
B	25	37.5	62.5	87.5	112.5
C	20.5	33	58	83	108
D	16.5 (± 12.5)	29 (± 25)	54 (± 50)	79 (± 75)	104 (± 100)
E	10	22.5	47.5	72.5	97.5
H	x	x	x	50	75

	M-403.xPD	M-403.xDG		M-404.xPD	M-404.xDG
F	114	119.5	F	114	128.5
G	59.5	56	G	59.5	56

M-403 and M-404, dimensions in mm

Ordering Information

M-403.1PD

Linear stage, leadscrew, width 80 mm, 25 mm travel range, ActiveDrive

M-403.2PD

Linear stage, leadscrew, width 80 mm, 50 mm travel range, ActiveDrive

M-403.4PD

Linear stage, leadscrew, width 80 mm, 100 mm travel range, ActiveDrive

M-403.6PD

Linear stage, leadscrew, width 80 mm, 150 mm travel range, ActiveDrive

M-403.8PD

Linear stage, leadscrew, width 80 mm, 200 mm travel range, ActiveDrive

M-403.1DG

Linear stage, leadscrew, width 80 mm, 25 mm travel range, DC gear motor

M-403.2DG

Linear stage, leadscrew, width 80 mm, 50 mm travel range, DC gear motor

M-403.4DG

Linear stage, leadscrew, width 80 mm, 100 mm travel range, DC gear motor

M-403.6DG

Linear stage, leadscrew, width 80 mm, 150 mm travel range, DC gear motor

M-403.8DG

Linear stage, leadscrew, width 80 mm, 200 mm travel range, DC gear motor

M-403.12S

Linear stage, leadscrew, width 80 mm, 25 mm travel range, stepper motor

M-403.22S

Linear stage, leadscrew, width 80 mm, 50 mm travel range, stepper motor

M-403.42S

Linear stage, leadscrew, width 80 mm, 100 mm travel range, stepper motor

M-403.62S

Linear stage, leadscrew, width 80 mm, 150 mm travel range, stepper motor

M-403.82S

Linear stage, leadscrew, width 80 mm, 200 mm travel range, stepper motor