

Precision Translation Stage

Compact Linear Stage with Crossed Roller Bearings



M-126

- Travel range 20 mm and 25 mm
- Repeatability to 0.1 μm
- Minimum incremental motion 0.1 μm
- Velocities up to 50 mm/s
- XY and XYZ combinations
- Direction-sensing reference point switch

Compact microtranslation stage

The M-126 precision microtranslation stage is available as variant with manual drive, 2-phase stepper motor, DC motor, and DC gear motor. The DC variants are equipped with an integrated ActiveDrive servo amplifier. The DC gearhead variant with the highest gear ratio achieves a design resolution of 3.5 nm with the help of a rotary encoder. The motion platform is guided by crossed roller bearings. Conversion of the motor's rotary to linear motion is done with the help of a leadscrew or a ball screw.

Specifications

	M-126.CG1	M-126.DG1	M-126.PD1	M-126.PD2	M-126.2S1	M-126.M0	Unit
Active axes	X	X	X	X	X	X	

Motion and positioning	M-126.CG1	M-126.DG1	M-126.PD1	M-126.PD2	M-126.2S1	M-126.M0	Unit
Travel range	25	25	25	20	25	25	mm
Integrated sensor	Rotary encoder	Rotary encoder	Rotary encoder	Rotary encoder	–	–	
Sensor resolution	2048	2000	4000	4000	–	–	Cts./rev.
Design resolution	0.0035	0.0085	0.125	0.25	1.25	–	µm
Minimum incremental motion	0.1	0.1	0.25	0.5	0.1	1	µm
Unidirectional repeatability	0.2	0.1	0.1	0.3	0.1	–	µm
Bidirectional repeatability	2	1	1	1	1	–	µm
Accuracy	2.5	2.5	2.5	2.5	2.5	–	µm
Pitch / yaw	±50	±50	±50	±50	±50	±50	µrad
Straightness / flatness	2	2	2	2	2	2	µm
Max. velocity	0.7	1.5	15*	50	6	–	mm/s
Reference point switch repeatability	1	1	1	1	1	–	µm

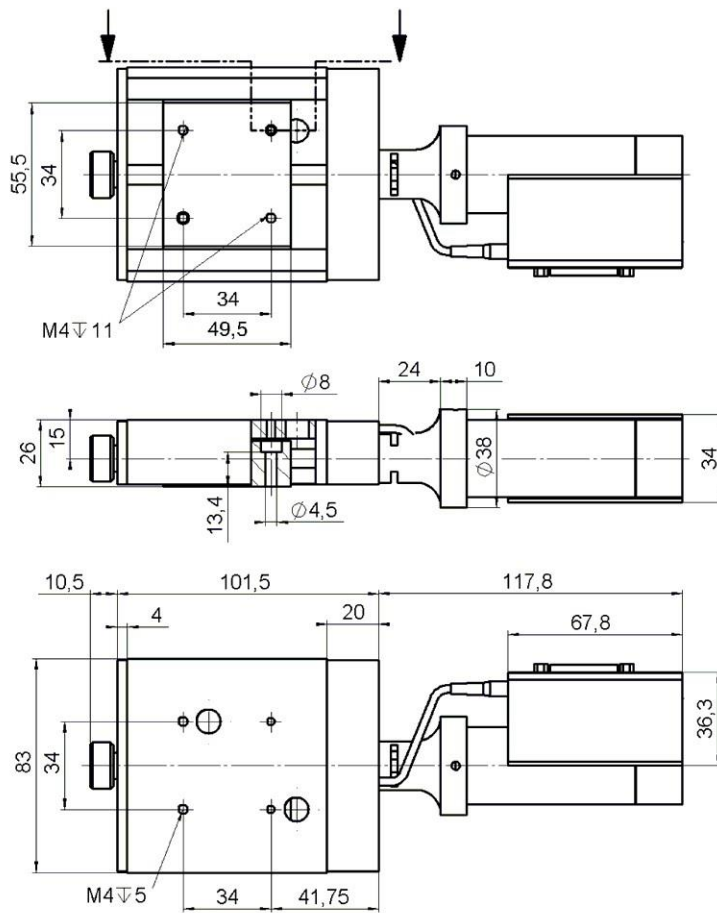
Mechanical properties	M-126.CG1	M-126.DG1	M-126.PD1	M-126.PD2	M-126.2S1	M-126.M0	Unit
Drive screw	Leadscrew	Leadscrew	Leadscrew	Ball screw	Leadscrew	Leadscrew	
Drive screw pitch	0.5	0.5	0.5	1	0.5	0.5	mm
Gear ratio	69.12:1	(28/12)4:1~ 29.6:1	–	–	–	–	
Motor resolution	–	–	–	–	400	–	Full steps/rev
Max. load	200	200	200	200	200	200	N
Max. push/pull force	40 / 40	50 / 50	50 / 50	50 / 50	40 / 40	50 / 50	N
Max. lateral force	100	100	100	100	100	100	N

Drive properties	M-126.CG1	M-126.DG1	M-126.PD1	M-126.PD2	M-126.2S1	M-126.M0	Unit
Motor type	DC gear motor	DC gear motor	DC motor, ActiveDrive	DC motor, ActiveDrive	2-phase stepper motor	–	
Operating voltage	0 to ±12	0 to ±12	24 (PWM)	24 (PWM)	24	–	V
Max. nominal current per phase	–	–	–	–	0.85	–	A
Motor power	2	3	30	30	–	–	W
Reference and limit switches	Hall effect	Hall effect	Hall effect	Hall effect	Hall effect	–	

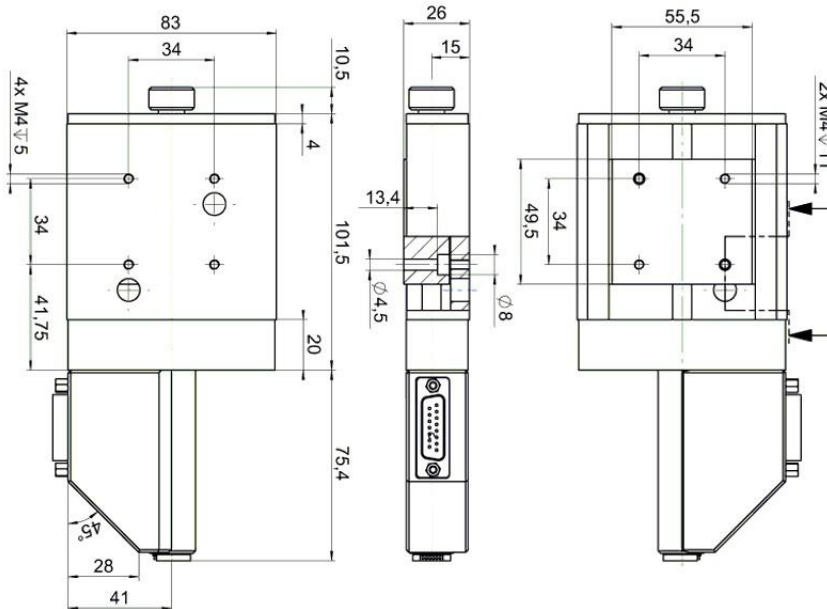
Miscellaneous	M-126.CG1	M-126.DG1	M-126.PD1	M-126.PD2	M-126.2S1	M-126.M0	Unit
Operating temperature range	-20 to 65	-20 to 65	-20 to 65	-20 to 65	-20 to 65	-20 to 65	°C
Material	Aluminum, steel	Aluminum, steel	Aluminum, steel	Aluminum, steel	Aluminum, steel	Aluminum, steel	
Mass	0.8	0.9	0.9	0.9	1	0.6	kg
Recommended controllers/drivers	C-863 (1 axis), C-884 (4/ 6 axes)	C-863 (1 axis), C-884 (4/ 6 axes)	C-863 (1 axis), C-884 (4/ 6 axes)	C-863 (1 axis), C-884 (4/ 6 axes)	C-663 (1 axis)	–	

* Max. recommended velocity
Ask about customized versions.

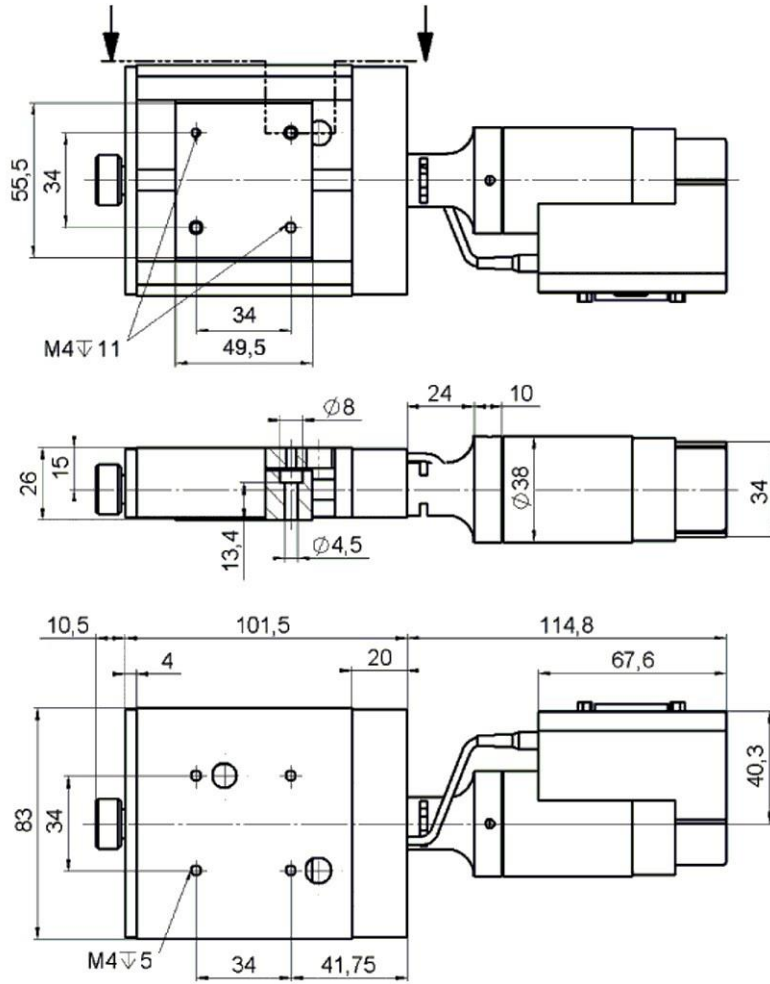
Drawings / Images



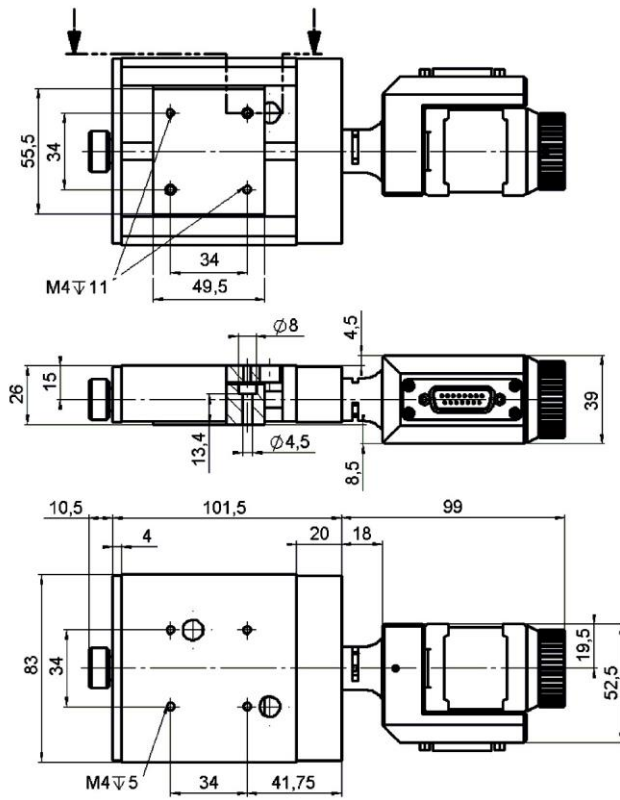
M-126.DG1, Dimensions in mm



M-126.CG1, Dimensions in mm



M-126.PD1, Dimensions in mm



M-126.S1, Dimensions in mm

Ordering Information

M-126.CG1

Microtranslation stage, 25 mm travel range, compact DC gear motor

M-126.DG1

Microtranslation stage, 25 mm travel range, DC gear motor

M-126.PD1

Microtranslation stage, 25 mm travel range, ActiveDrive DC motor, including 24 V power adapter

M-126.PD2

Microtranslation stage, 20 mm travel range, ActiveDrive DC motor, ball screw, including 24 V power adapter

M-126.2S1

Microtranslation stage, 25 mm travel range, 2-phase stepper motor

M-126.M0

Microtranslation stage, 25 mm travel range, manual

Accessories (please order separately)

M-125.90

Vertical mounting bracket for M-126

M-126.80

Adapter plate for mounting M-126 stages onto honeycomb platforms (metric and inches)