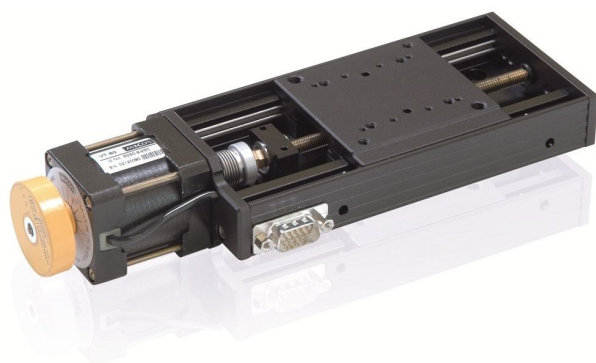


VT-80 Linear Stage

Basic Version for Universal Use



- Travel ranges from 25 to 300 mm (1 to 12")
- Low profile
- Max. velocity to 20 mm/s
- Load capacity to 5 kg

Standard-class linear stage

Recirculating ball bearings and precision leadscrew for smooth and even feed. Stress-relieved aluminum base for highest stability. Compact XY combinations. Two mechanical limit switches.

Drive types

- Closed-loop DC motor with rotary encoder on the motor shaft
- 2-phase stepper motor for high torque even at low velocities and high resolution

Fields of application

Positioning tasks with low duty cycle in industry and research.

Related and Compatible Products

Compatible accessories

L-500 Adapter Bracket

Related products

L-509 Precision Linear Stage

M-406 Precision Linear Stage

M-404 Precision Translation Stage

M-403 Precision Translation Stage

M-414 High-Load Precision Stage

M-413 High-Load Precision Stage
M-417 Precision Linear Stage

Specifications

	623091x0	623092x0	Unit	Tolerance
	Linear stage with DC motor and rotary encoder	Linear stage with stepper motor		
Motion axis	X	X		
Motion and positioning				
Travel range*	25 / 50 / 75 / 100 / 150 / 200 / 300	25 / 50 / 75 / 100 / 150 / 200 / 300	mm	
Integrated sensor	Rotary encoder	–		
Design resolution	0.5	5 (full step)**	μm	
Minimum incremental motion	0.5	0.2	μm	typ.
Unidirectional repeatability	0.8	0.4	μm	typ.
Backlash	±10	±10	μm	typ.
Crosstalk, angular error xry (pitch)	±100 / ±110 / ±120 / ±130 / ±150 / ±170 / ±210	±100 / ±110 / ±120 / ±130 / ±150 / ±170 / ±210	μrad	typ.
Crosstalk, angular error xrz (yaw)	±150	±150	μrad	typ.
Straightness / flatness	± 8 / ± 10 / ± 11 / ± 12 / ± 14 / ± 20 / ± 35	± 8 / ± 10 / ± 11 / ± 12 / ± 14 / ± 20 / ± 35	μm	
Max. velocity	20	20	mm/s	
Mechanical properties				
Thread pitch leadscrew	1	1	mm	
Load capacity	50	50	N	max.
Push/pull force	30	30	N	max.
Permissible lateral force	40	40	N	max.
Holding force	50	50	N	max.
Tip/tilt stiffness $k_{\alpha x}$ in X	150	150	μrad/Nm	max.

Tip/tilt stiffness $k_{\alpha y}$ in Y	220	220	$\mu\text{rad}/\text{Nm}$	max.
Permissible torque M_x in X	5	5	Nm	max.
Permissible torque M_y in Y	2.5	2.5	Nm	max.
Permissible torque M_z in Z	2.5	2.5	Nm	max.
Drive properties				
Motor Type	DC motor	2-phase stepper motor**		
Operating voltage	24	24	V	
Motor power	23	29	W	nominal
Limit switches	2 × mechanical	2 × mechanical		
Miscellaneous				
Operating temperature range	-20 to 65	-20 to 65	°C	
Material	Aluminum, black anodized	Aluminum, black anodized		
Mass	0.46 / 0.56 / 0.63 / 0.75 / 0.81 / 0.91 / 1.14	0.67 / 0.72 / 0.78 / 0.84 / 0.95 / 1.1 / 1.29	kg	±5 %
Connector	HD Sub-D 15	HD Sub-D 15		
Recommended controllers	C-863 Mercury (single- channel) C-884 for four axes	SMC Hydra motion controller (two channels) C-663 Mercury Step (single channel)		

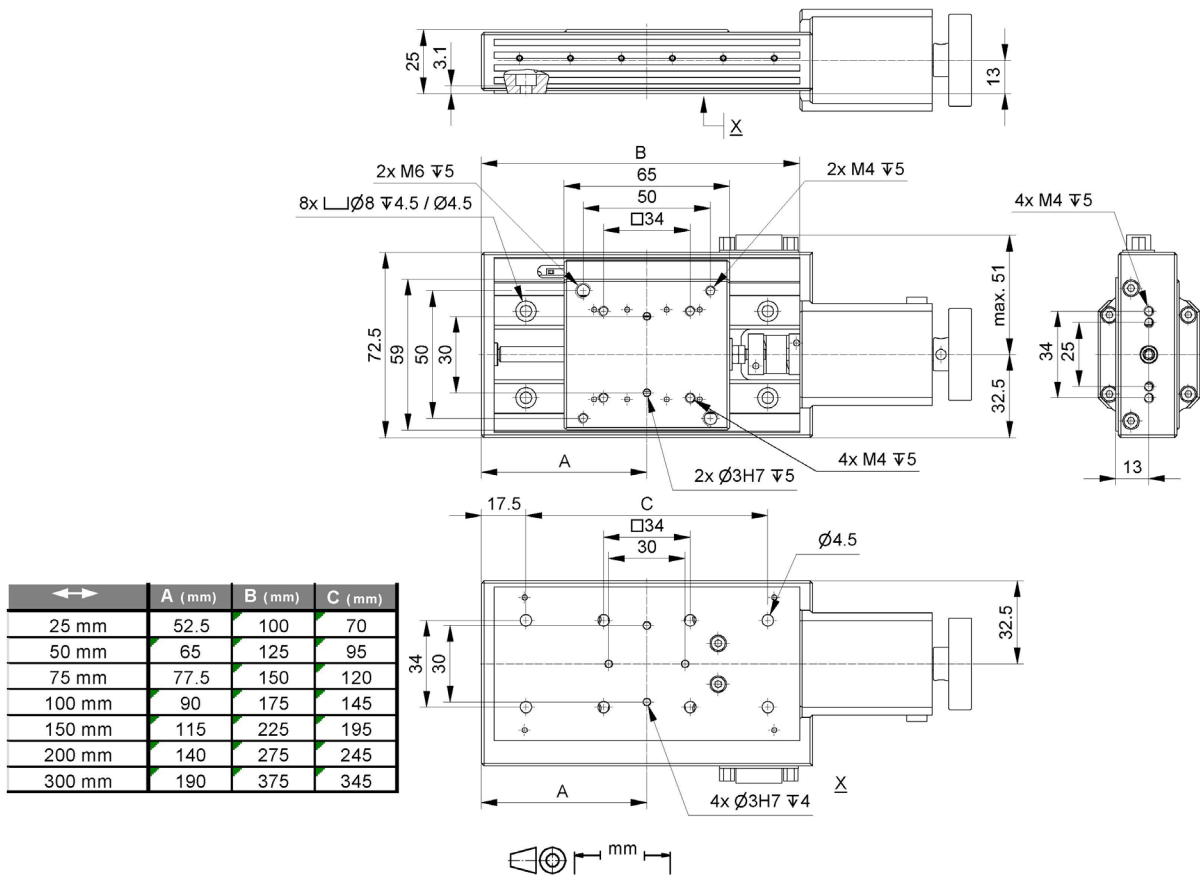
Ask about custom designs!

Connection cables for motor and sensor are not in the scope of delivery and must be ordered separately.

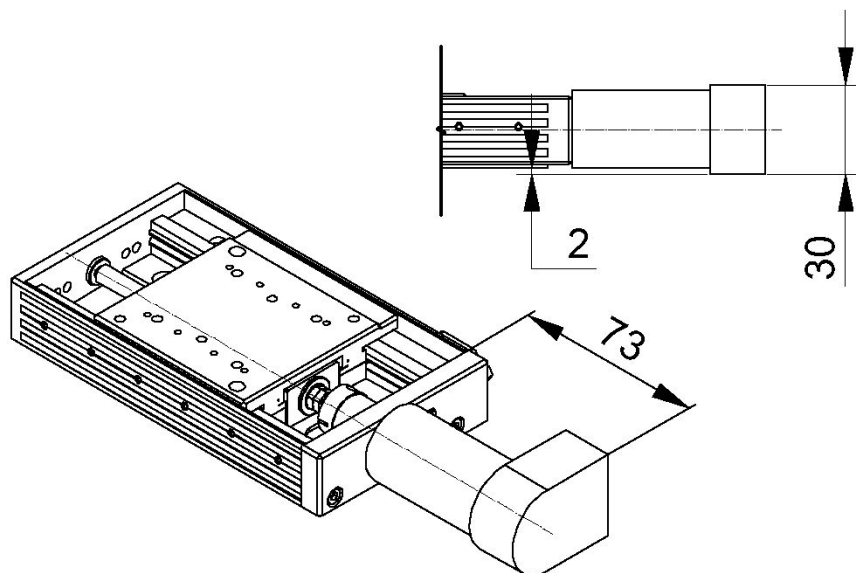
* Travel ranges of the variants: See ordering information.

** Max. 1.7 A/phase, 200 full steps/rev.

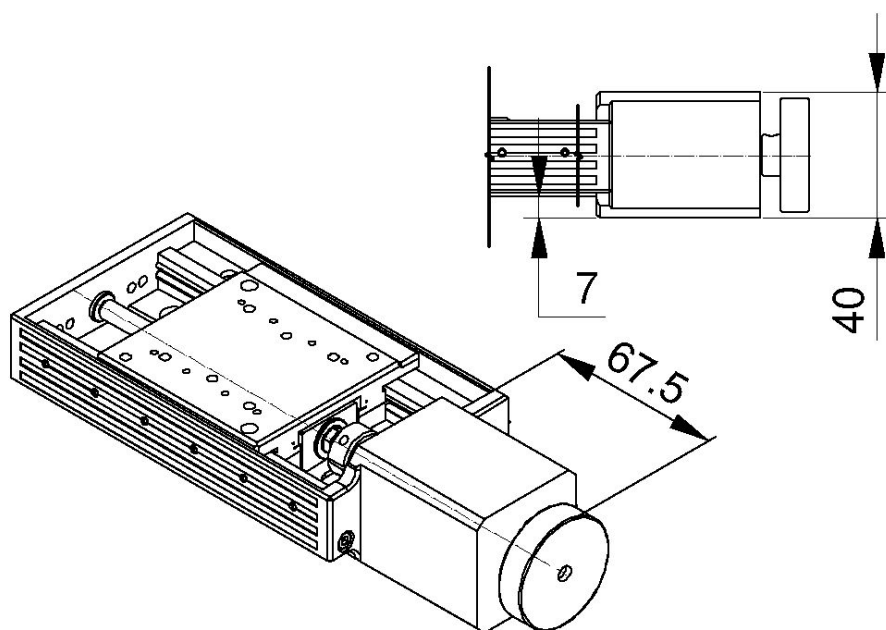
Drawings and Images



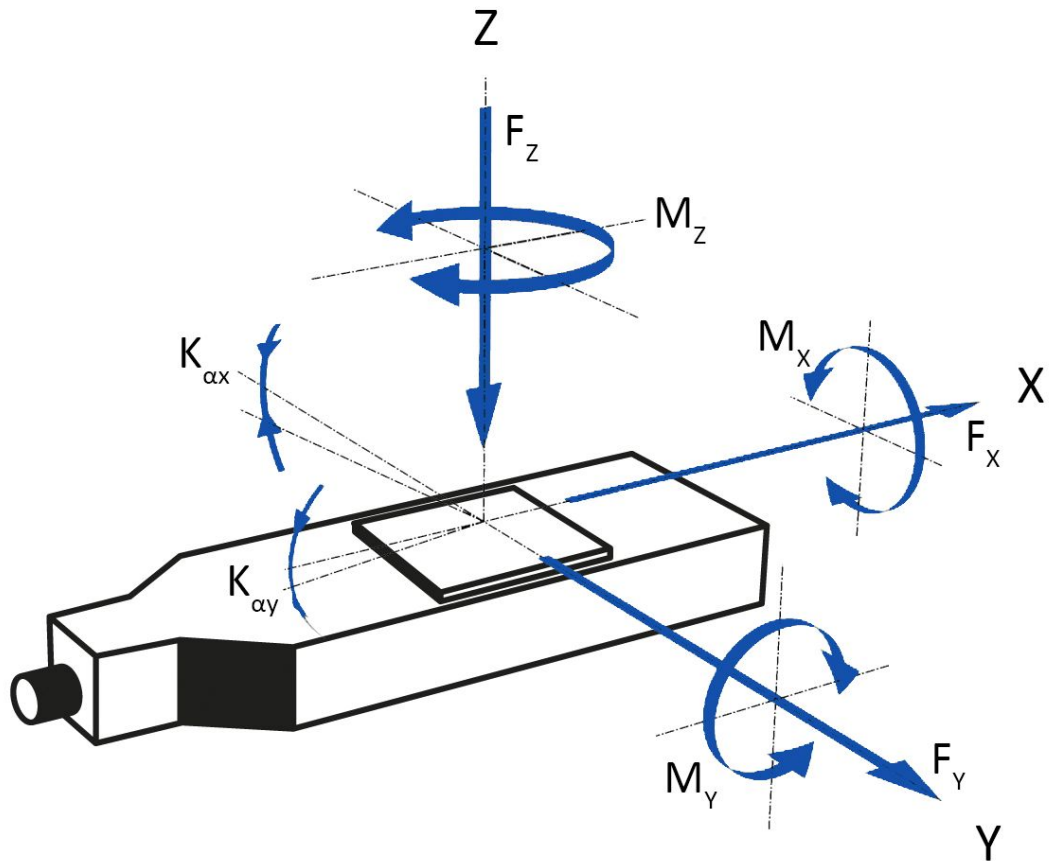
VT-80, dimensions in mm



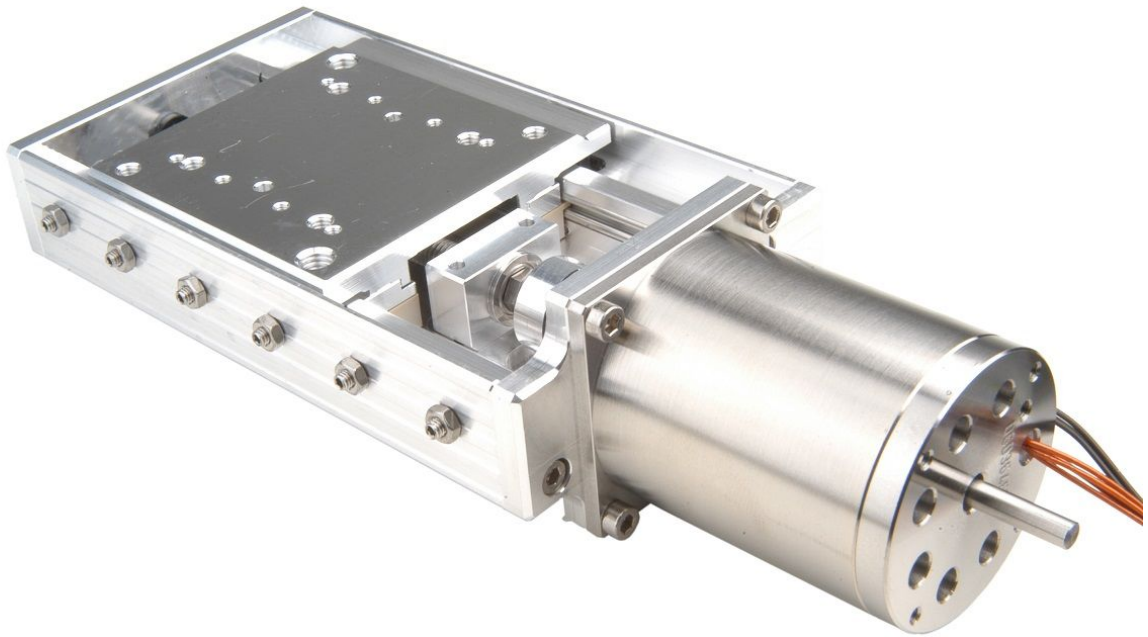
VT-80, DC motor, dimensions in mm



VT-80, stepper motor, dimensions in mm



Direction of the axes and torques for linear stages



Vacuum versions to 10^{-9} hPa available on request

Ordering Information

Versions with DC motor

62309110-0000

VT-80 Linear Stage, DC Motor, 80 mm Width, 25 mm Travel Range, Mechanical Limit Switches

62309120

VT-80 Linear Stage, DC Motor, 80 mm Width, 50 mm Travel Range, Mechanical Limit Switches

62309130

VT-80 Linear Stage, DC Motor, 80 mm Width, 75 mm Travel Range, Mechanical Limit Switches

62309140

VT-80 Linear Stage, DC Motor, 80 mm Width, 100 mm Travel Range, Mechanical Limit Switches

62309150

VT-80 Linear Stage, DC Motor, 80 mm Width, 150 mm Travel Range, Mechanical Limit Switches

62309160

VT-80 Linear Stage, DC Motor, 80 mm Width, 200 mm Travel Range, Mechanical Limit Switches

62309180

VT-80 Linear Stage, DC Motor, 80 mm Width, 300 mm Travel Range, Mechanical Limit Switches

Versions with stepper motor

62309210-0000

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 25 mm Travel Range, Mechanical Limit Switches

62309220

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 50 mm Travel Range, Mechanical Limit Switches

62309230

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 75 mm Travel Range, Mechanical Limit Switches

62309240

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 100 mm Travel Range, Mechanical Limit Switches

62309250-0000

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 150 mm Travel Range, Mechanical Limit Switches

62309260

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 200 mm Travel Range, Mechanical Limit Switches

62309280

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 300 mm Travel Range, Mechanical Limit Switches

Default option, please specify when ordering

62309111

VT-80 Linear Stage, DC Motor, 80 mm Width, 25 mm Travel Range, Mechanical Limit Switches,
Mounted XY Combination

62309211

VT-80 Linear Stage, Stepper Motor, 80 mm Width, 25 mm Travel Range, Mechanical Limit Switches,
Mounted XY Combination

For accessories, please specify when ordering

720090000

Connection Cable for Stages with Stepper Motor, 3 m

720190000

Connection Cable for Stages with DC Motor, 3 m

721090000

Cable Set for Stages with Measuring System, 3 m

Ask about custom designs!