

# Translation Stage | VT-21S

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The low cost VT-21S linear stage excels in applications with very limited space due to its compact design. The stage utilizes a 2-phase stepper motor and is equipped with two mechanical limit switches. A pre-loaded ball slide creates high stiffness and superior performance. The VT-21S is available with an optional linear encoder with 50 nm resolution. The stages can be mounted in XY or XYZ configuration in a space-saving arrangement. Versions capable of operation in vacuum ( $10^{-6}$  mbar) are available. The VT-21S is compatible with the MMC-200 controller.

## KEY FEATURES

- Travel range of 10 mm
- 50 nm closed loop encoder resolution
- Load capacity up to 1 kg
- Ball slide
- Integrated mechanical limit switches
- Vacuum versions available

## TECHNICAL DATA

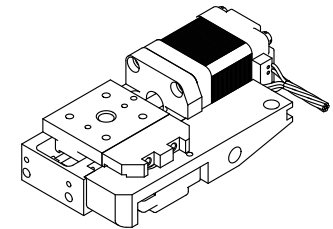
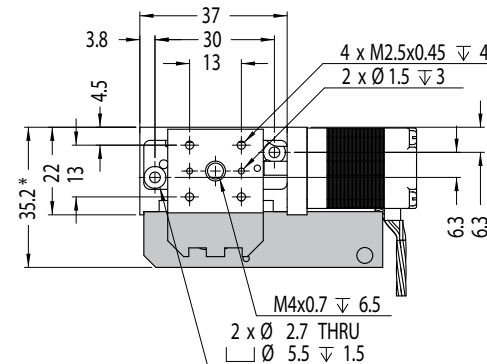
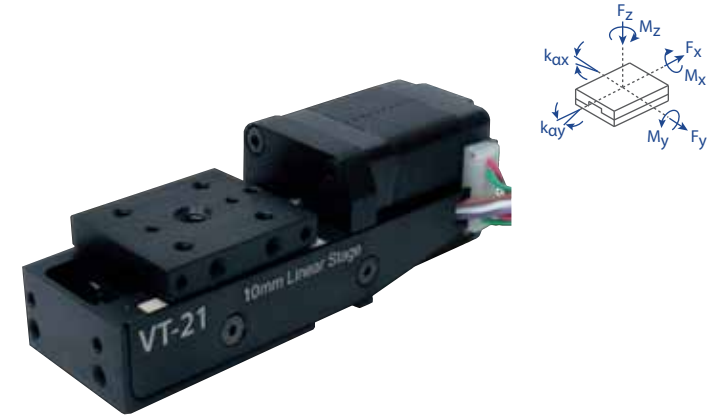
Travel range [mm]	10			
Straightness / Flatness [ $\mu\text{m}$ ]	$\pm 2.5$			
Pitch [ $\mu\text{rad}$ ]	$\pm 150$			
Yaw [ $\mu\text{rad}$ ]	$\pm 150$			
Weight [g]	100			
Motor option	2-Phase Stepper Motor			
Speed, max [mm/s]	> 5			
Encoder option	None (open loop)	Analog (1 V <sub>pp</sub> )	Digital (RS-422)	Digital Low Cost
Resolution, typical [ $\mu\text{m}$ ]	0.5	0.05	0.05	0.5
Repeatability, bi-directional [ $\mu\text{m}$ ]	$\pm 4$	$\pm 0.2$	$\pm 0.2$	$\pm 1$
Repeatability, uni-directional [ $\mu\text{m}$ ]	0.5	0.2	0.2	1
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)			

## ORDERING INFORMATION

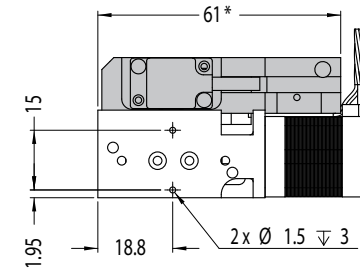
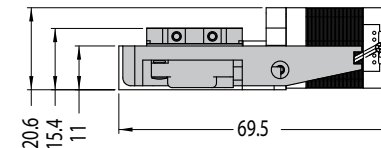
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DRIVE	Stepper Motor, SM-001 .....	1
TRAVEL	10 mm .....	1
ENCODER	None .....	0
	Analog (1 V <sub>pp</sub> ) .....	2
	Digital (RS-422) .....	3
	Digital low cost, 0.5 $\mu\text{m}$ .....	4
LIMIT SWITCH	Mechanical .....	1
ENVIRONMENT	Atmospheric .....	0
	High Vacuum, $10^{-6}$ mbar .....	6

Load, max	$F_x$ [N]	$F_y$ [N]	$F_z$ [N]	$M_x$ [N-m]	$M_y$ [N-m]	$M_z$ [N-m]	$k_{ax}$ [ $\mu\text{rad/N-m}$ ]	$k_{ay}$ [ $\mu\text{rad/N-m}$ ]
SM-001	10	10	10	0.4	0.6	0.5	-	-



\* grey parts for closed loop version only  
\* all dimensions are in millimeters



Specifications are subject to change without notice.