

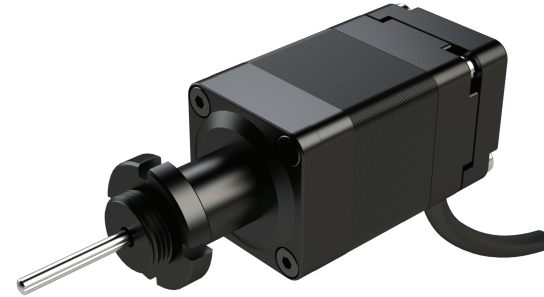
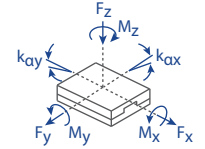
# Micro Pusher | MP-21S/MP-21L

The MP-21 linear actuator is designed for applications with very limited space conditions. Typical applications include actuation of manual drive stages and mirror mounts. It utilizes a 2-phase stepper motor and a mechanical limit switch for homing. Versions capable of operation in vacuum ( $10^{-6}$  mbar) are available. The MP-21 is compatible with the MMC-200 controller.

## KEY FEATURES

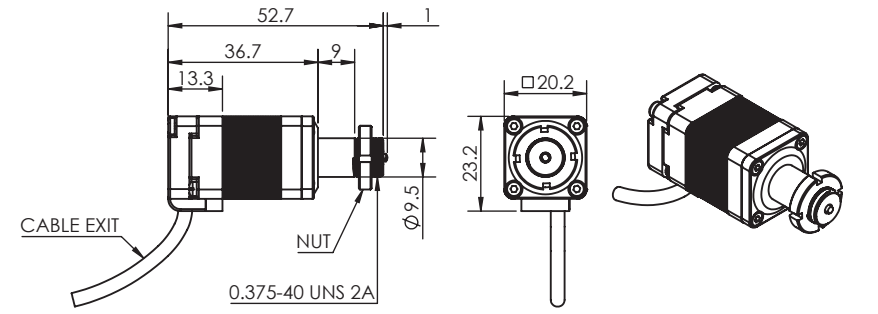
- Travel range of 12 and 25 mm
- 0.1  $\mu\text{m}$  open loop resolution
- Maximum force of 20 N
- Ball spline with zero backlash, non-rotating tip
- Integrated mechanical limit switch
- Vacuum versions available
- Optional encoder available

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	20	0	0	-	-	-	-	-

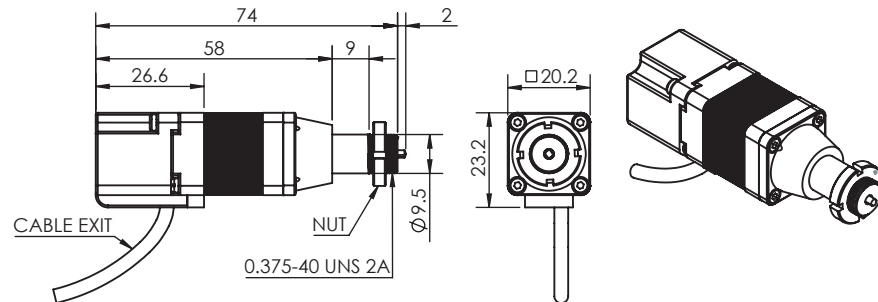


## TECHNICAL DATA

	MP-21S	MP-21L
Travel range [mm]	12	25
Straightness / Flatness [ $\mu\text{m}$ ]	-	-
Pitch [ $\mu\text{rad}$ ]	-	-
Yaw [ $\mu\text{rad}$ ]	-	-
Weight [g]	60	70
Motor option	2-Phase Stepper Motor	
Speed, max [mm/s]	5	
Encoder option	None (open loop)	
Resolution, typical [ $\mu\text{m}$ ]	0.1	
Repeatability, bi-directional [ $\mu\text{m}$ ]	$\pm 0.5$	
Repeatability, uni-directional [ $\mu\text{m}$ ]	0.4	
Materials	aluminum body, stainless steel ball spline (other materials i.e. stainless steel, titanium, etc. available upon request)	



\* 12 mm travel version shown above  
 \* 25 mm travel version shown below  
 \* all dimensions are in millimeters



## ORDERING INFORMATION

	MP-21-	1		0	1	
<b>DRIVE</b>	Stepper Motor, SM-001 .....	1				
<b>TRAVEL</b>	12 mm .....	1				
	25 mm .....		2			
<b>ENCODER</b>	Optional .....			0		
<b>LIMIT SWITCH</b>	Mechanical .....				1	
<b>ENVIRONMENT</b>	Atmospheric .....					0
	High vacuum, $10^{-6}$ mbar.....					6

Specifications are subject to change without notice.