

## PZ 10

### *compact z - axis translation stage*

#### **Concept:**

The PZ 10 piezo electrical geared stage offers a vertical stroke of up to 10µm. As a result of the solid state phenomena the resolution is practically unlimited down to the sub - nm range and the strain response is nearly at the ceramics sonic speed. The FEA designed actuating system based on flexure hinges guarantees excellent guidance accuracy without parasitic motion. The durability of the PZ 10 stages makes it an excellent choice for permanent use in industrial applications

#### **Specials:**

Main advantages of the PZ 10 stage are shown in dynamical applications as well in static. The stage is well prepared for high off center loads use. So the stage features a maximum of stiffness in stroke direction and transverse to the stroke, combined with a high load capacity and robustness against lateral mishandling. Due to the excellent static properties the dynamical behavior shows a proper frequency spectrum considering resonances in the upper level. The sophisticated guidance design suppresses almost all lateral motion components with lateral runout of only a few nm. In addition the superior guidance accuracy shows only a few µrad rotational errors for all axes. All these features exhibit a very coast effective solution for high load applications.

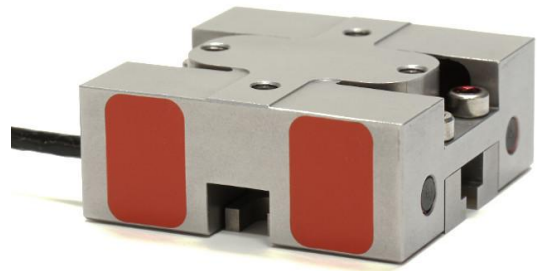


Image: PZ 10

#### *Product highlights:*

- motion up to 10 µm
- easy adjustment
- nm-resolution
- integrated preload
- dynamic application
- high resonant frequency
- combinable with other systems
- vacuum compatible

#### *Applications*

- fiber positioning
- laser optics
- scanning systems
- micro manipulation

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### Mounting/Installation:

Following customers specifications the PZ 10 is equipped with four 4 - 40UNC tapped holes arranged within a bore hole circle of 0.875in. So additional parts can easily be mounted of the top plate. The bottom plate raster is the same as the top plate's. Flat head screws for fastening have to be inserted laterally and be fixed thru the tapped holes of the top plate by a wrench. Vacuum and cryogenic designs are available on demand as well, body material variations of invar, superinvar, aluminum or titanium too.

PZ 10		Unit	Part No. T-102-70
<b>axes</b>		-	Z
<b>motion open loop (<math>\pm 20\%</math>)*</b>		$\mu\text{m}$	9.0
<b>resolution open loop</b>		nm	0.02
<b>capacitance (<math>\pm 20\%</math>)*</b>		$\mu\text{F}$	3.6
<b>voltage range</b>		V	-10 thru +150
<b>max. Blockierkraft</b>		N	2000
<b>max. push/pull force</b>		N	3150/315
<b>stiffness</b>		N/ $\mu\text{m}$	315/100
<b>resonance frequency</b>	0g	kHz	5.0
	50g	kHz	4.5
	100g	kHz	4.0
	300g	kHz	3.0
<b>rotational error</b>	roll (x)	$\mu\text{rad}$	5.0
	pitch (y)	$\mu\text{rad}$	5.0
	yaw (z)	$\mu\text{rad}$	5.0
<b>cable length</b>		m	1.0
<b>connector</b>		-	LEMO
<b>dimensions</b>	length	mm	36.5
	width	mm	36.5
	height	mm	15.0
<b>weight</b>		g	110
<b>material</b>		-	stainless steel

Specifications subject to change without notice!