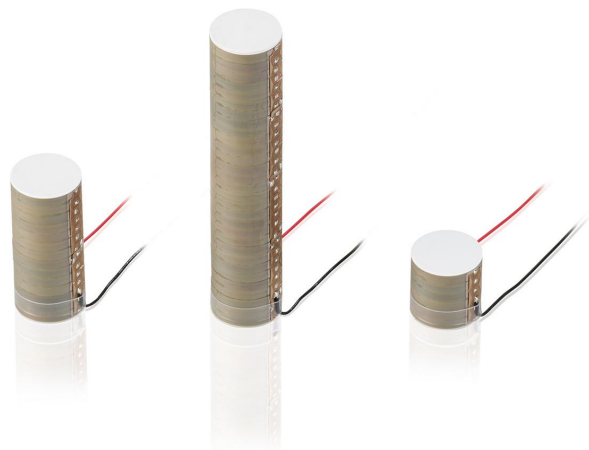


Round PICMA® Stack Multilayer Piezo Actuator

High Blocking Force



P-088

- Superior lifetime
- Ideal for dynamic operation
- Flexible, adaptable overall height
- OEM versions available without stranded wires
- UHV-compatible to 10^{-9} hPa

Multilayer stack actuators

The actuators are easily scaled, thanks to the stacked construction, flexible adaptation of the travel range is possible. The round cross section ensures easy integration.

UHV-compatible to 10^{-9} hPa. The actuators do not outgas and can be baked out at high temperatures.

PICMA® piezo linear actuators

Low operating voltage -20 to 100 V. Ceramic insulation. High reliability, long lifetime.

Possible modifications

Different heights, fast mounting according to customer requirements. Variety of shapes. Precision-ground end plates for reduced tolerances. Spherical tips.

Fields of application

Industry and research. For laser tuning, microdispensing, life sciences.

Motion	Unit	Tolerance	P-088.720	P-088.721	P-088.740	P-088.741	P-088.780	P-088.781
Active axes			Z	Z	Z	Z	Z	Z
Travel range in Z, open loop, at 0 to 100 V	µm	+20 / -10 %	14	14	32	32	70	70

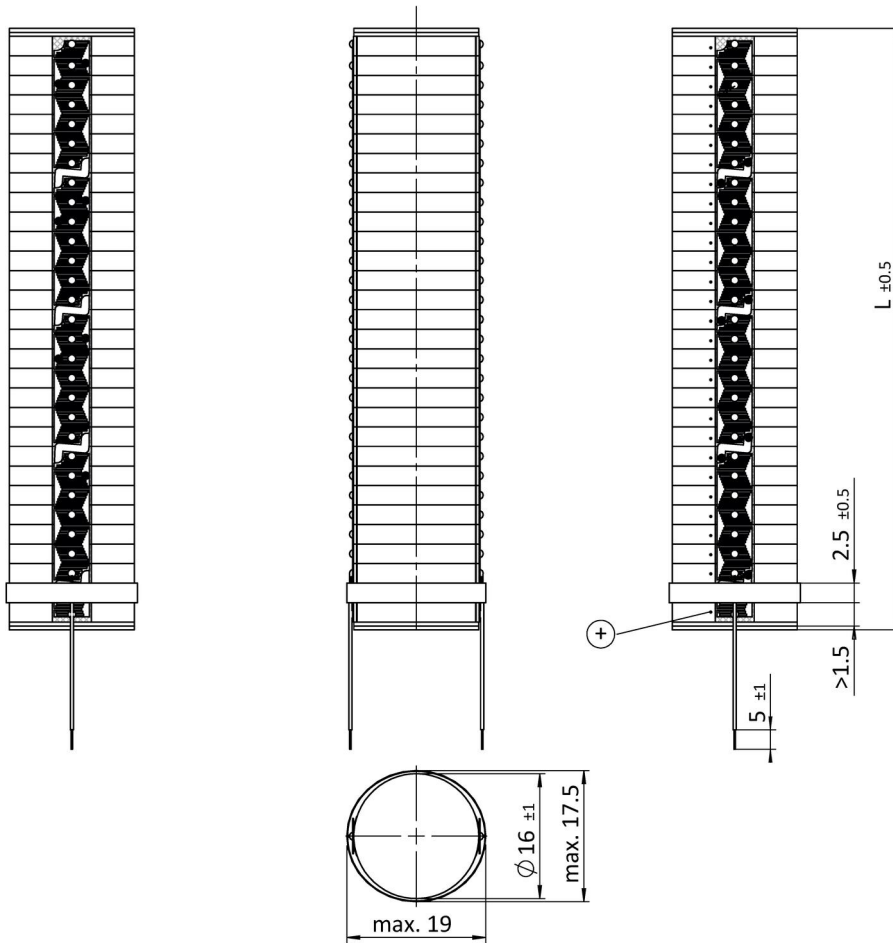
Drive Properties	Unit	Tolerance	P-088.720	P-088.721	P-088.740	P-088.741	P-088.780	P-088.781
Actuator type			Linear actuator	Linear actuator	Linear actuator	Linear actuator	Linear actuator	Linear actuator
Drive type			Piezo actuator/ PICMA® Stack	Piezo actuator/ PICMA® Stack	Piezo actuator/ PICMA® Stack	Piezo actuator/ PICMA® Stack	Piezo actuator/ PICMA® Stack	Piezo actuator/ PICMA® Stack
Operating voltage	V		-20 to 100	-20 to 100	-20 to 100	-20 to 100	-20 to 100	-20 to 100
Electrical capacitance	µF	±20%	13	13	30	30	68	68

Mechanical Properties	Unit	Tolerance	P-088.720	P-088.721	P-088.740	P-088.741	P-088.780	P-088.781
Stiffness in Z	N/ μ m		535	535	235	235	105	105
Resonant frequency in Z, unloaded	kHz	$\pm 20\%$	68	68	35	35	17	17
Blocking force	N		7500	7500	7500	7500	7500	7500
Recommended preload for dynamic operation	MPa		15	15	15	15	15	15
Maximum preload for constant force	MPa		30	30	30	30	30	30
Cross section			round	round	round	round	round	round
Material			Piezo ceramic; ceramic end surfaces made of Al ₂ O ₃ .	Piezo ceramic; ceramic end surfaces made of Al ₂ O ₃ .	Piezo ceramic; ceramic end surfaces made of Al ₂ O ₃ .	Piezo ceramic; ceramic end surfaces made of Al ₂ O ₃ .	Piezo ceramic; ceramic end surfaces made of Al ₂ O ₃ .	Piezo ceramic; ceramic end surfaces made of Al ₂ O ₃ .
Piezo material			PIC252	PIC252	PIC252	PIC252	PIC252	PIC252
Length L	mm	± 0.5 mm	16	16	36	36	77	77
Outer diameter	mm	± 1 mm	16	16	16	16	16	16

Miscellaneous	Unit		P-088.720	P-088.721	P-088.740	P-088.741	P-088.780	P-088.781
Operating temperature range	$^{\circ}$ C		-40 to 150	-40 to 150	-40 to 150	-40 to 150	-40 to 150	-40 to 150
Vacuum class	hPa		10 ⁻⁹	10 ⁻⁹	10 ⁻⁹	10 ⁻⁹	10 ⁻⁹	10 ⁻⁹
Connector			Solderable contacts	Stranded wires, PTFE isolated, AWG 28, $\varnothing$ 0.69 mm	Solderable contacts	Stranded wires, PTFE isolated, AWG 28, $\varnothing$ 0.69 mm	Solderable contacts	Stranded wires, PTFE isolated, AWG 28, $\varnothing$ 0.69 mm
Cable length	m			0.1		0.1		0.1
Recommended controllers / drivers			E-610, E-617, E-831, E-836	E-610, E-617, E-831, E-836	E-610, E-617, E-831, E-836	E-610, E-617, E-831, E-836	E-610, E-617, E-831, E-836	E-610, E-617, E-831, E-836

Blocking force and stiffness at 0 to 100 V.
 Resonant frequency in Z, unloaded: Measured at 1 V_{pp}, unclamped. The value is halved for unilateral clamping.
 Electrical capacitance: Measured at 1 V_{pp}, 1 kHz, RT.
 Ask about customized versions.

Drawings / Images



P-088 PICMA® Stack multilayer piezo actuator, dimensions in mm.

Order Information

P-088.720

Round PICMA® Stack multilayer piezo actuator; 14 µm travel range (open loop); Ø 16 mm; length 16 mm; 7500 N feed force; vacuum-compatible to 10⁻⁹ hPa; solderable contacts

P-088.721

Round PICMA® Stack multilayer piezo actuator; 14 µm travel range (open loop); Ø 16 mm; length 16 mm; 7500 N feed force; vacuum-compatible to 10⁻⁹ hPa; connecting wires

P-088.740

Round PICMA® Stack multilayer piezo actuator; 32 µm travel range (open loop); Ø 16 mm; length 36 mm; 7500 N feed force; vacuum-compatible to 10⁻⁹ hPa; solderable contacts

Order Information

P-088.741

Round PICMA® Stack multilayer piezo actuator; 32 µm travel range (open loop); Ø 16 mm; length 36 mm; 7500 N feed force; vacuum-compatible to 10⁻⁹ hPa; connecting wires

P-088.780

Round PICMA® Stack multilayer piezo actuator; 70 µm travel range (open loop); Ø 16 mm; length 77 mm; 7500 N feed force; vacuum-compatible to 10⁻⁹ hPa; solderable contacts

P-088.781

Round PICMA® Stack multilayer piezo actuator; 70 µm travel range (open loop); Ø 16 mm; length 77 mm; 7500 N feed force; vacuum-compatible to 10⁻⁹ hPa; connecting wires