

# TRITOR 100

## 3D Nanopositioning System



Combination of 3 linear axes



Motion range up to 100  $\mu\text{m}$



Compact design with integrated feedback sensor option



Highest positioning resolution



The TRITOR 100 has a parallel X, Y and Z motion range of 100  $\mu\text{m}$  per axis. The unique cube design of the flexure guiding system allows for excellent usability with zero friction. With a combination of high stiffness and excellent straightness of motion, the three-axis piezo positioner TRITOR 100 is an ideal solution for high precision positioning in the nanometer range for fiber alignment, laser-uses, and many other micro positioning tasks.

Dynamic scan applications are a typical utilization for the TRITOR 100. The simultaneous motion available in X, Y and Z directions, offers large degrees of freedom during use. All piezo stages can be made with special materials for specialized applications such as vacuum or cryogenic applications.

Through-holes are used for attaching the positioning system which is important for all dynamic applications.

### Variants:

- Standard
- With strain gauge (SG)
- With capacitive sensor (CAP)

### Recommended Controller:

NV40/3\*



E-101-20

\*) Suitable for open-loop system. NV 40/3 CLE recommended for closed-loop.

### Applications

- AFM & SFM microscopy
- Fiber alignment
- Beam steering / optical technology
- Semiconductor Technology

# TRITOR 100

## Technical Data

		Unit	TRITOR 100	TRITOR 100 SG	TRITOR 100 CAP
Part #		-	T-403-00	T-403-21	T-403-06D
Axes		-	X, Y, Z	X, Y, Z	X, Y, Z
Motion ( $\pm 10\%$ ) open-loop*		$\mu\text{m}$	100	100	100
Motion ( $\pm 0.2\%$ ) closed-loop*		$\mu\text{m}$	-	80	80
Capacitance (per axis) $\pm 20\%$ **		$\mu\text{F}$	1.8	1.8	1.8
Integrated measurement system		-	-	strain gauge	capacitive
Resolution***	open-loop	nm		0.2	
	closed-loop		-	2	1
Typ. repeatability	$\Theta$ x, y, z	nm	-	5/5/5	3/3/3
Typ. non-linearity	$\Theta$ x, y, z	nm/%	-	0.1/0.1/0.1	0.02/0.02/0.02
Resonant frequency x/y/z	unloaded	Hz	500/550/480	500/550/480	500/550/480
	additional load: 50 g		410/430/400	410/430/400	410/430/400
	additional load: 100g		350/370/345	350/370/345	350/370/345
	additional load: 200g		290/300/285	290/300/285	290/300/285
	additional load: 300g		250/260/245	250/260/245	250/260/245
Stiffness		N/ $\mu\text{m}$	1/1/1	1/1/1	1/1/1
Max. force generation x/y/z	pull	N	10/10/10	10/10/10	10/10/10
	push		100/100/100	100/100/100	100/100/100
Voltage		V	-20...+130	-20...+130	-20...+130
Connector****	Voltage	-	LEMO 05.302	LEMO 05.302	LEMO 05.302
	Sensor		-	LEMO 05.304	LEMO 05.650
Cable length*****		m	1	1.2	2
Material		-	stainless steel / aluminium	stainless steel / aluminium	stainless steel / aluminium
Dimension (l/w/h)		mm	40 x 40 x 34	40 x 40 x 34	60 x 60 x 41
Weight		g	165	160	550

**Rights reserved to change specifications as progress occurs without notice!**

\* Typical value measured with NV 40/3 amplifier (closed loop: NV 40/3 CLE amplifier)

\*\* Typical value for small electrical field strength

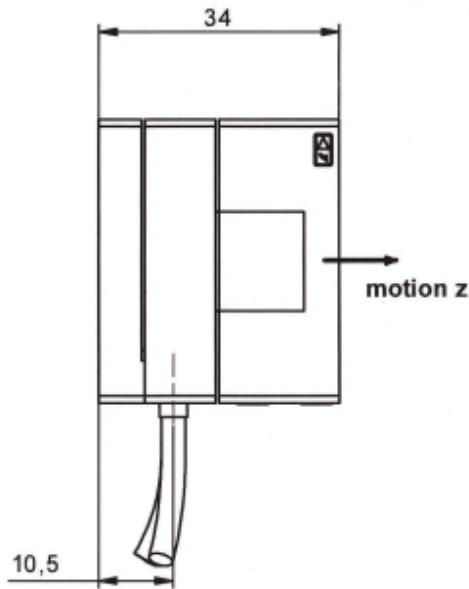
\*\*\* The resolution is only limited by the noise of the controller and metrology

\*\*\*\* For further product variations and recommended configurations, please contact our sales representatives.

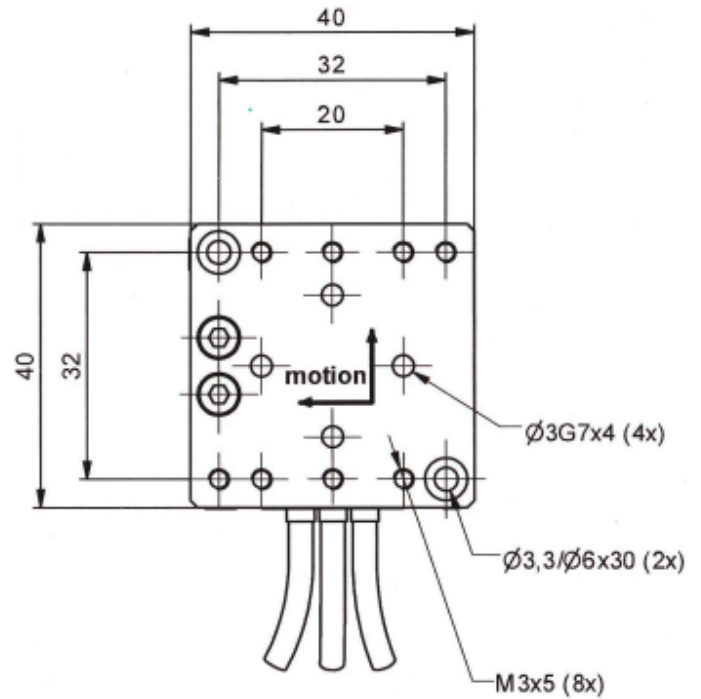
\*\*\*\*\* Different version may have different cable length

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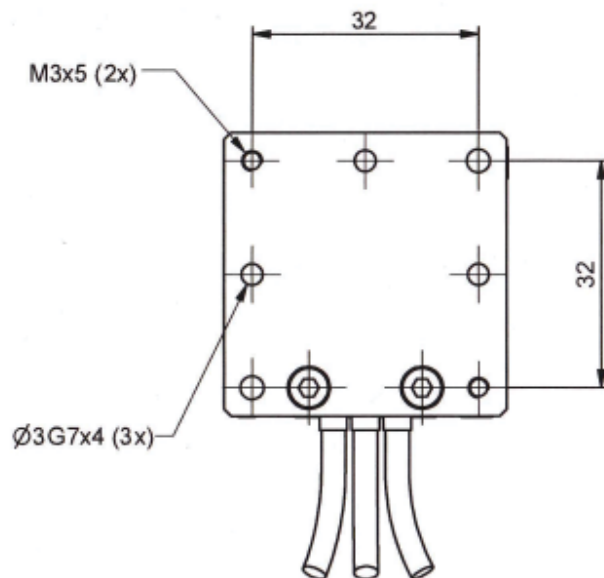
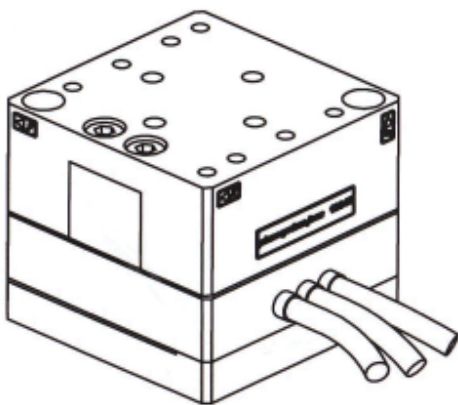
## Part Drawing



top



bottom

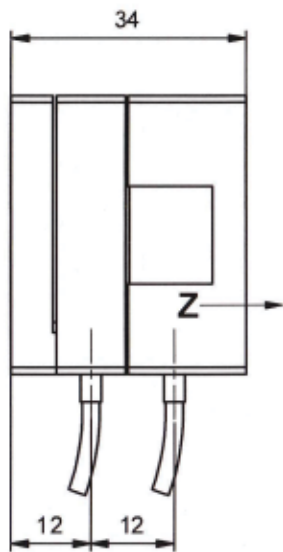


Dimensions given in mm.

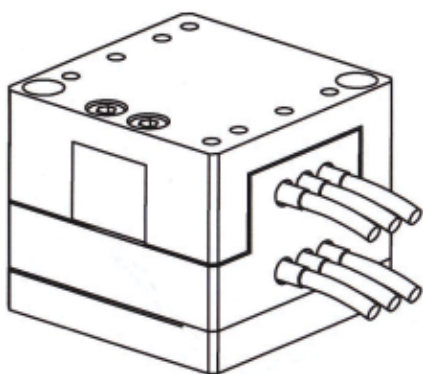
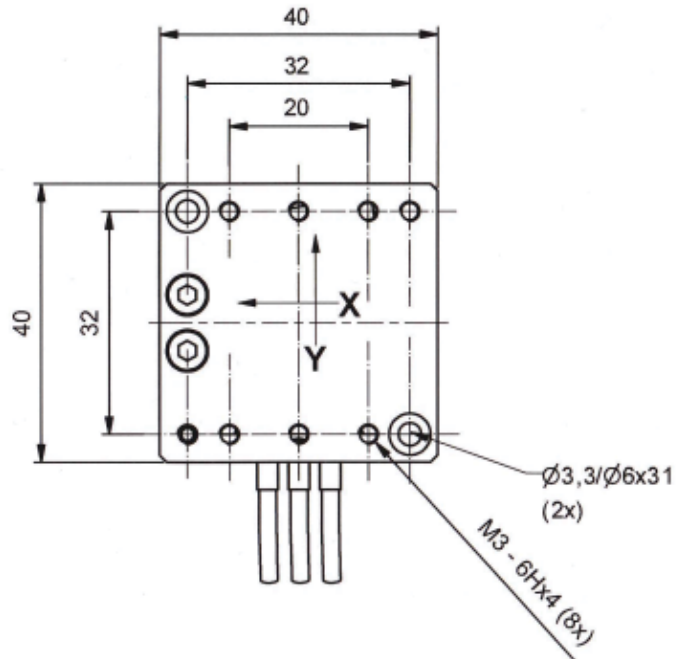
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# TRITOR 100 SG

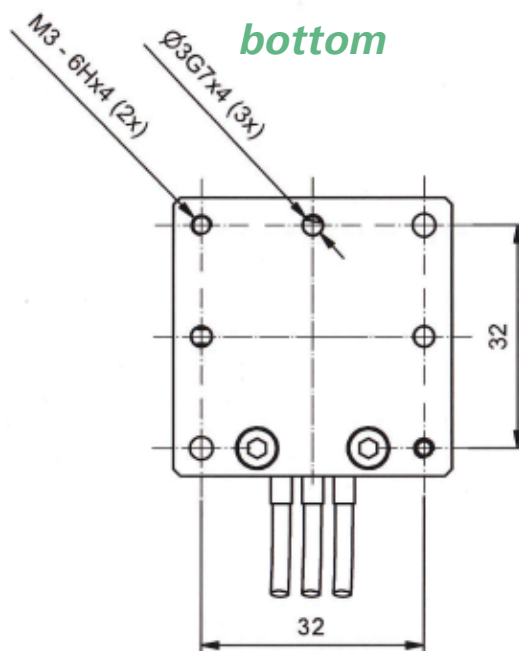
## Part Drawing



top



bottom

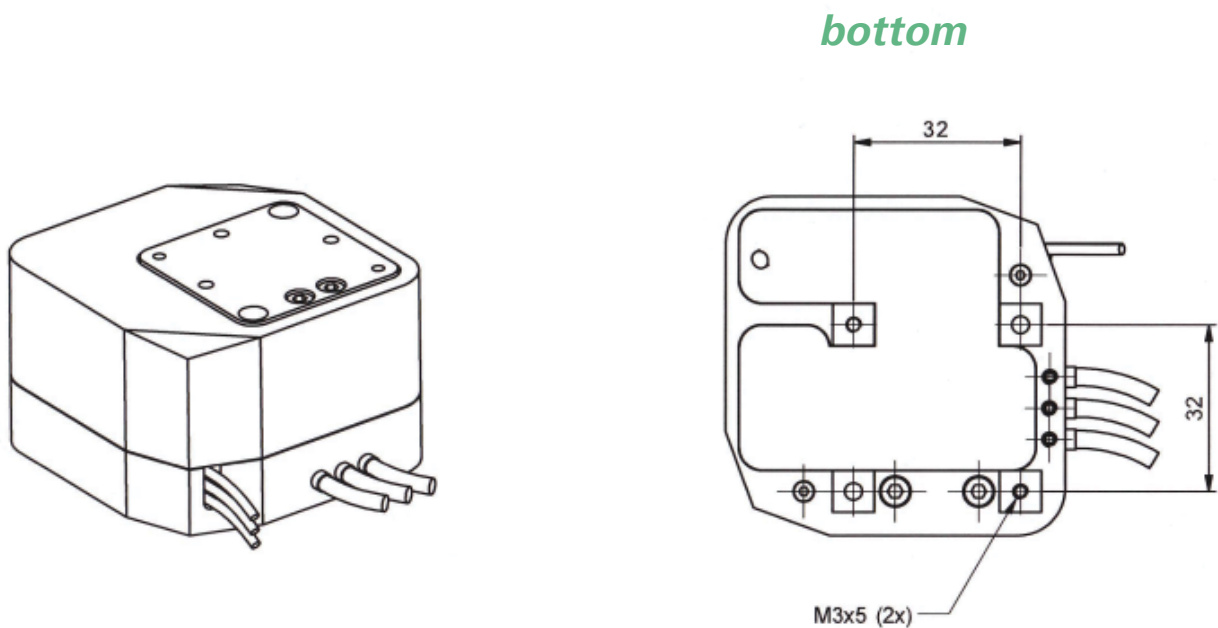
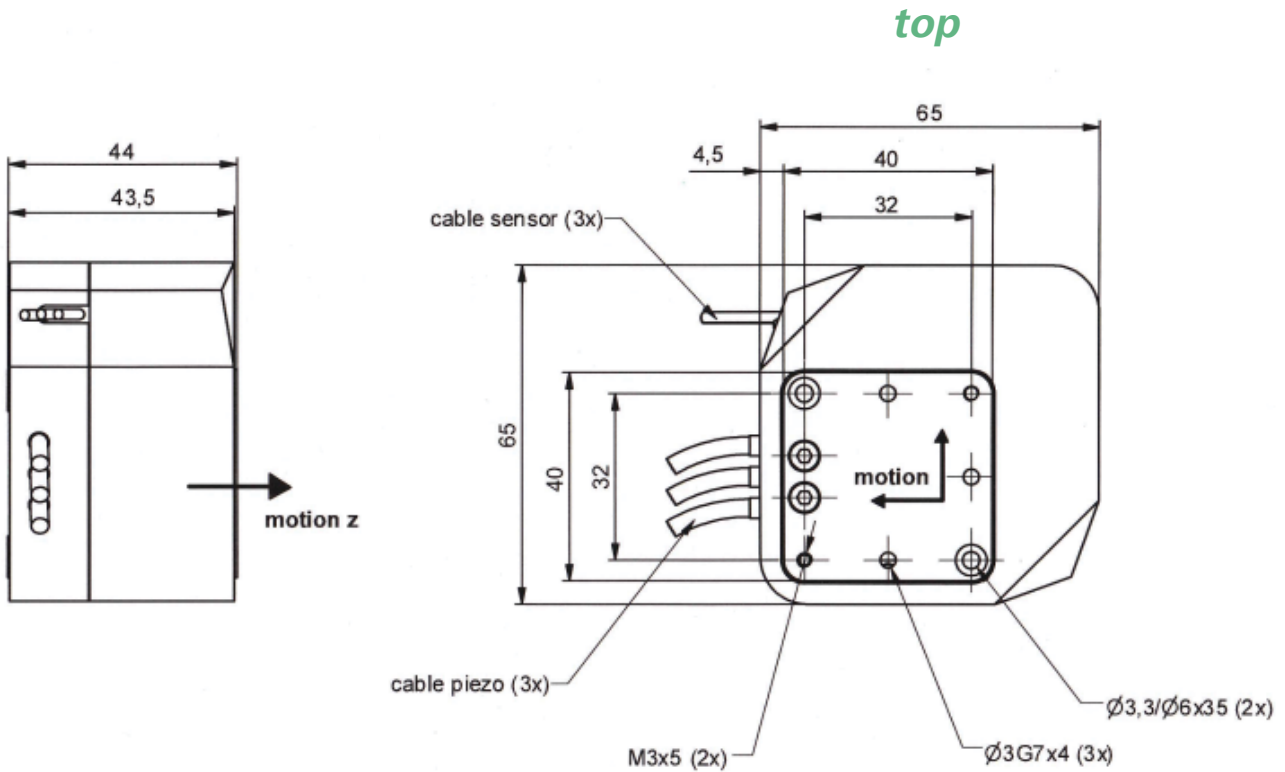


Dimensions given in mm.

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# TRITOR 100 CAP

## Part Drawing



Dimensions given in mm.

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