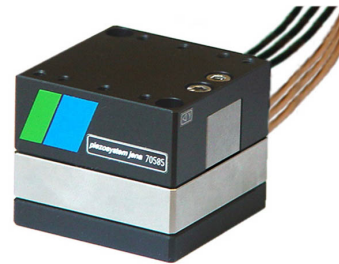


## **series TRITOR** **compact multi dimensional translation stages**

- highly compact design results in superior performance
- accurate parallel motion by parallelogram design
- high reliability due to solid state hinges
- motion without mechanical play
- high resolution in nm and sub-nm range
- motion up to 400 µm
- precision pin holes



**TRITOR 100 SG**

**applications:**

- optics, laser tuning, fiber positioning
- micromanipulation, biology
- scanning systems
- vacuum and low temperature applications

*piezosystem jena* was the first to introduce the compact XYZ nano-positioning stage TRITOR, and we can now stand behind this system as the only company to have over 10 years experience in designing and manufacturing of this three axis stage. The unique TRITOR elements are extremely compact but offer motions of up to 400 µm in all three axes. Parallel motion is achieved without play due to the mechanical design.

As an option, integrated position control systems for overcoming the effect of hysteresis are available. TRITOR elements can be easily combined with other mechanical positioning systems. They are suitable for many various applications ranging from optical research to OEM systems.



**TRITOR 400**

**options:**

- integrated position measurement system for each axis
  - vacuum design
- other modifications available on request

**mounting instructions:**

TRITOR elements consist of actuators integrated in a housing with an internal lever transmission. Since the lever mechanism works in both directions, forces between housing and top plate need to be avoided, as they could damage the stage.

The stage is attached by using two diagonal holes. Components can be mounted on the top plate by two diagonal tapped holes and can be accurately located by using the precision pin holes (indicated N).

**technical data:**

operating voltage: -10 to +150 V  
temperature range: -20 to 80 °C  
housing: stainless steel; top and bottom plate made of anodized Al  
connector: LEMO  
cable length: 1m



**TRITOR 100 CAP**

**piezosystem jena** GmbH

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series TRITOR		unit	TRITOR 38	TRITOR 100	TRITOR 200/20	TRITOR 400
part no.			T-402-00	T-403-00	T-407-00	T-406-00
axis		-	x, y, z	x, y, z	x,y,z	x, y, z
motion ( $\pm 10\%$ )**		$\mu\text{m}$	38	100	235/ 235 / 30	400
operating voltage		V	-10...150	-10...150	-10...150	-10...150
capacit. each dir. ( $\pm 10\%$ )**		$\mu\text{F}$	0.7	1.8	21 / 21 / 2.8	14
resolution*		nm	0.08	0.2	0.4 / 0.4 / 0.07	0.8
resonant	x-direction	Hz	630	500	210	180
	y-direction	Hz	685	550	210	280
	z-direction	Hz	915	480	265	140
stiffness	x-direction	N/ $\mu\text{m}$	0.5	1.0	0.7	0.3
	y-direction	N/ $\mu\text{m}$	0.45	1.0	0.7	0.3
	z-direction	N/ $\mu\text{m}$	0.8	1.0	2.0	0.25
force generation (blocking force)	x-direction	N	25	40	100	100
	y-direction	N	25	40	100	100
	z-direction	N	25	32	100	100
dimensions	length L	mm	25	40	144	116.5
	width B	mm	25	40	144	106.5
	height H	mm	27	34	33	40
distance of drills	C	mm	20	32	60	32
	hole P	mm	$\varnothing 2.2 / \varnothing 4 \times 23$	$\varnothing 3.3 / \varnothing 6 \times 30$	$\varnothing 6.4 / \varnothing 11 \times 7$	$\varnothing 3.3 / \varnothing 6 \times 31.5$
	E	mm	-	20	-	32
	M	mm	M2 x 2.5	M3 x 5	M4 x 5	M3 x 6
	N	mm	$\varnothing 2 \text{ G7} \times 4$	$\varnothing 3 \text{ G7} \times 4$	-	-
connector	voltage	-	LEMO 0S.250	LEMO 0S.250	LEMO 0S.250	LEMO 0S.250
weight		g	115	165	1650	1050
series TRITOR with strain gauge feedback system		unit	TRITOR 38 SG	TRITOR 100 SG Compact	TRITOR 200/20 SG	TRITOR 400 SG
part no.			T-402-01	T-403-21		T-406-01
motion ( $\pm 10\%$ )**	open loop	$\mu\text{m}$	38	100	235 / 235 / 30	400
	closed loop	$\mu\text{m}$	30	80	200 / 200 / 20	320
resolution* (closed loop)		nm	1.6	2	4 / 4 / 0.7	8
typ. non-linearity		%	0.14	0.1	0.1 / 0.1 / 0.1	0.1
typ. repeatability		nm	27	30	30 / 30 / 14	80
dimensions	length L	mm	40	40	144	116
	width B	mm	40	40	144	106
	height H	mm	33.5	34	33	40
connector	sensor	-	LEMO 0S.304	LEMO 0S.304	LEMO 0S.304	LEMO 0S.304
distance of drills	C	mm	32	32	60	32
	hole P	mm	$\varnothing 3.3 / \varnothing 6 \times 30$	$\varnothing 3.3 / \varnothing 6 \times 31$	$\varnothing 6.4 / \varnothing 11 \times 7$	$\varnothing 3.3 / \varnothing 6 \times 31.5$
	E	mm	20	20	-	32
	M	mm	M2 x 2.5	M3 x 5	M4 x 5	M3 x 6
	N	mm	$\varnothing 2 \text{ G7} \times 4$	$\varnothing 3 \text{ G7} \times 4$	-	-
weight		g	130	160	1650	1050
series TRITOR with capacitive sensor feedback system		unit	-	TRITOR 100 CAP	-	TRITOR 400 CAP
part no.			-	T-403-06	-	T-406-06
motion ( $\pm 10\%$ )**	open loop	$\mu\text{m}$	-	100	-	400
	closed loop	$\mu\text{m}$	-	80	-	320
typ. non-linearity		%	-	0.05	-	0.05
typ. repeatability		nm	-	20	-	40
dimensions	length L	mm	-	60	-	116.5
	width B	mm	-	60	-	106.5
	height H	mm	-	41	-	40
connector	sensor	-	-	LEMO 0S.650	-	LEMO 0S.650
distance of drills	C	mm	-	32	-	32
	hole P	mm	-	$\varnothing 3.3 / \varnothing 6 \times 35$	-	$\varnothing 3.3 / \varnothing 6 \times 31.5$
	E	mm	-	40	-	32
	M	mm	-	M3 x 5	-	M3 x 6
	N	mm	-	$\varnothing 3 \text{ G7} \times 4$	-	-

\* measured with E-240-100 piezo amplifier

\*\* typ. value @ -10V to 150V

\*\*\* typ. small signal value

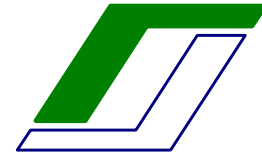
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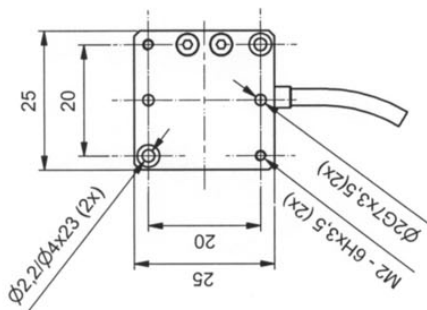
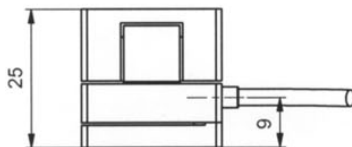
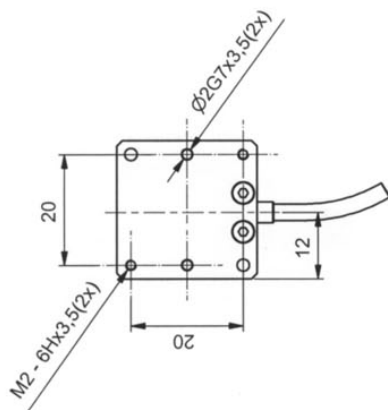
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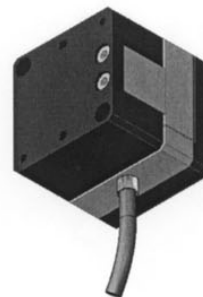


**COMPETENCE  
IN PRECISION**



**ORIGINAL**

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file name	OK: date/sign	customers drawing
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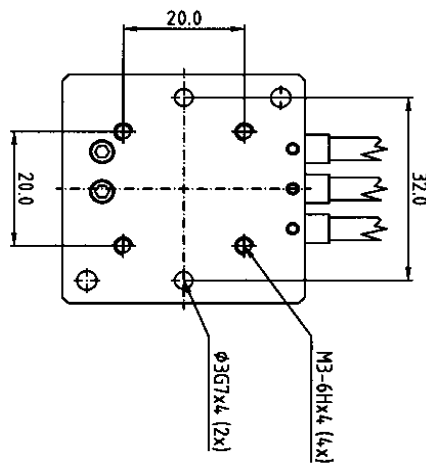
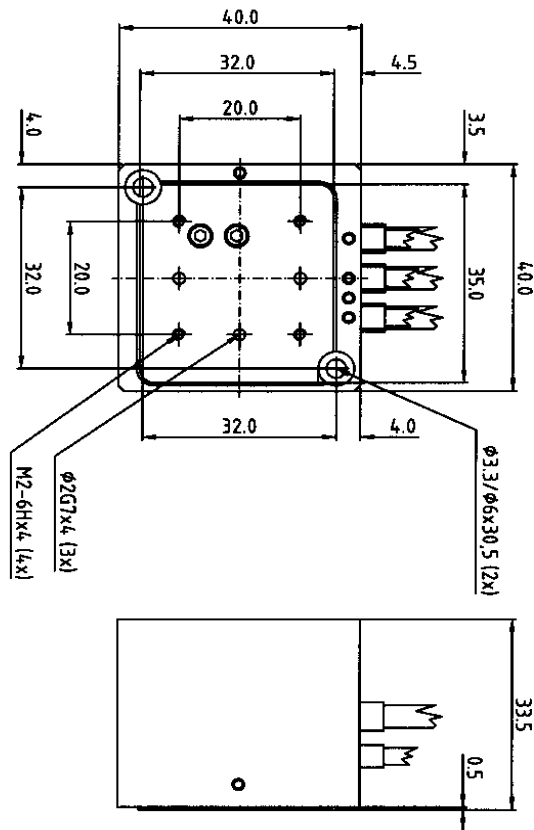
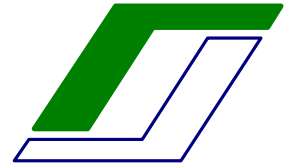
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	part-no.	part-name
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	PT40201	AZ 0
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		piezosystem jena

**ORIGINAL**