



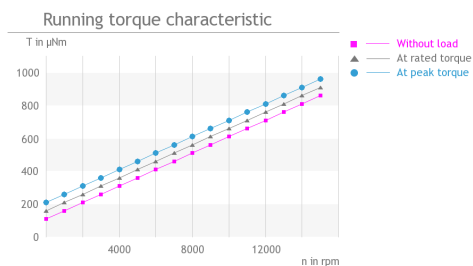
## > MaalonDrive® ToolFit 10mm - Type 1

### Attributes

Highlights	Description
<ul style="list-style-type: none"><li>▪ <b>Zero backlash with optimised fit between speed and resolution</b></li><li>▪ <b>Hollow shaft thru center of rotational axis</b></li><li>▪ <b>Integrated tool fitting</b></li><li>▪ <b>Input shaft with tothing</b></li><li>▪ <b>Integrated vacuum supply for tool</b></li></ul>	<p>The MaalonDrive® ToolFit 10mm - type 1 micro positioning gear combines hollow shaft, tool holder, vacuum supply, tothing on the input shaft and housing flange in one system. The robust bearing of the output shaft and the ability to use a gripper tool with vacuum directly in the input shaft characterise this micro actuator solution. Optical signals can be guided through the hollow shaft on the central rotary axis of the gear to save space. The tothing on the input shaft enables positioning of the motor parallel to the hollow shaft, thereby allowing it to be optimally utilised. The gear can be attached in an axial direction thanks to a mechanical interface for attaching the micro positioning gear. At the heart of this precise and reliable micro gearbox is a zero-backlash MaalonDrive® gear with a reduction ratio of 160:1.</p>

## Technical parameter

P-029



Nr.	Parameter	Symbol	Value	Hint
P-003	Ratio	i	160 : 1	
P-004	Self-locking		yes	
P-006	Hollow shaft		ja	
P-008	Repeatability unidirectional		15 arcsec	
P-009	Repeatability bidirectional		20 arcmin	
P-010	Accuracy		12 arcmin	
P-011	Transmission accuracy		24 arcmin	
P-013	Torsional stiffness		8.25 <sup>Nm</sup> /rad	
P-014	Lost motion		12 arcmin	
P-015	Backlash		0 arcmin	
P-016	Rated torque	T	5 mNm	
P-017	Peak torque	T	10 mNm	
P-018	Momentary peak torque	T	23 mNm	
P-021	Rated input speed	n	10000 rpm	
P-022	Maximum input speed	n	30000 rpm	
P-023	Rated output speed	n	62.5 rpm	
P-024	Maximum output speed	n	187.5 rpm	
P-026	No-load starting torque	T	165 µNm	
P-027	No-load running torque	T	110 µNm	
P-028	Rated running torque	T	690 µNm	
P-034	Lifetime for rated operation		1000 h	
P-035	Radial backlash output shaft		0 µm	
P-036	Axial backlash output shaft		0 µm	
P-037	Radial stiffness	c	11.32 N/µm	

# Technical Supply Specifications: MaalonDrive® ToolFit 10mm - Type 1



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Nr.	Parameter	Symbol	Value	Hint
P-038	Axial stiffness	c	40 N/μm	
P-039	Max. radial load on output shaft (non-operating, constant load)	F	135 N	
P-040	Max. radial load on output shaft (non-operating, impulsive load)	F	45 N	
P-041	Max. radial load on output shaft (operating, constant load)	F	32 N	
P-042	Max. radial load on output shaft (operating, impulsive load)	F	32 N	
P-043	Max. axial load on output shaft (non-operating, constant load)	F	150 N	
P-044	Max. axial load on output shaft (non-operating, impulsive load)	F	50 N	
P-045	Max. axial load on output shaft (operating, constant load)	F	380 N	
P-046	Max. axial load on output shaft (operating, impulsive load)	F	127 N	
P-047	Max. radial load on input shaft (non-operating, constant load)	F	20 N	
P-048	Max. radial load on input shaft (non-operating, impulsive load)	F	6 N	
P-049	Max. radial load on input shaft (operating, constant load)	F	15 N	
P-050	Max. radial load on input shaft (operating, impulsive load)	F	6 N	
P-051	Max. axial load on input shaft (non-operating, constant load)	F	30 N	
P-052	Max. axial load on input shaft (non-operating, impulsive load)	F	10 N	
P-053	Max. axial load on input shaft (operating, constant load)	F	100 N	
P-054	Max. axial load on input shaft (operating, impulsive load)	F	38 N	
P-055	Moment of inertia	I	60 * 10 <sup>-4</sup> gcm <sup>2</sup>	
P-056	Weight	m	9 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-80 °C	
P-058	Min. permissible ambient temperature (operating)	T	-20 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	150 °C	
P-060	Max. permissible ambient temperature (operating)	T	120 °C	
P-061	Tool fitting		Ø3.17G6 – 8 deep	
P-062	Connecting for vacuum supply		Ø2.2	

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Nr.	Parameter	Symbol	Value	Hint
P-063	Kind of gear wheel input shaft		Spur gear DIN 867	
P-064	Module gear wheel input shaft		0.2 mm	
P-065	Number of teeth gear wheel input shaft		42	
P-066	Pitch diameter gear wheel input shaft		8.4 mm	
P-067	Pressure angle gear wheel input shaft		20 °	
P-069	Material gear wheel input shaft		1.4305	

Additional technical data:

- Grease barricade preventing contamination at bearings and gear component set.

## Material information

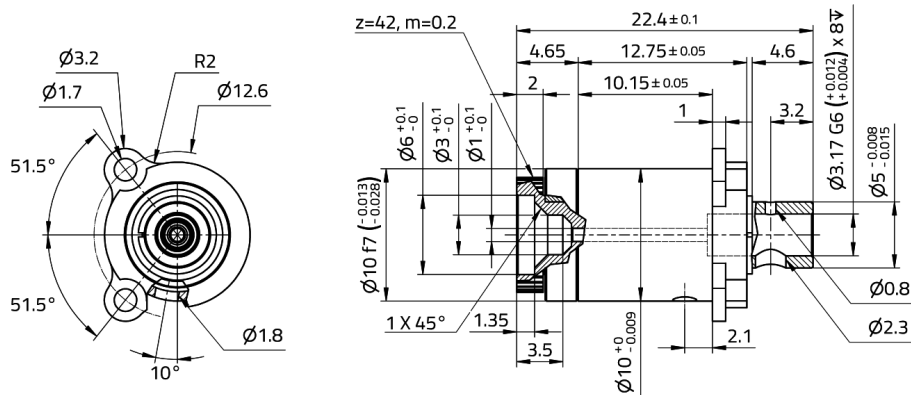
Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		Longtime PD2/ Molykote BR 2 plus	
P-902	Lubrication of input bearing gearbox		Longtime PD2/ Fomblin GRM60	
P-908	Material of gear component set		NiFe	
P-909	Material of output bearing gearbox		1.4108 DIN EN	
P-910	Material of input bearing gearbox		1.4108 DIN EN	
P-912	Material of gearbox output side		1.4305 DIN EN	
P-913	Material of gearbox input side		1.4305 DIN EN	

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## Technical drawing



Micromotion GmbH | Hoenbergstraße 14 | 65555 Limburg  
+49(0)6431-59618-25 | sales@micromotion.de | www.micromotion-drives.com