



> MaalonDrive®

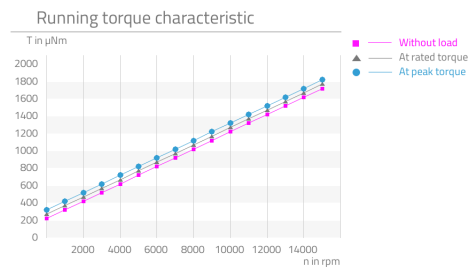
UHV 10mm - Type 3

Attributes

Highlights	Description
<ul style="list-style-type: none"> ▪ Hollow shaft thru center of rotational axis ▪ High repeatability ▪ Zero backlash with optimised fit between speed and transmission ratio ▪ Vacuum suitable lubrication ▪ Preloaded ball bearing 	<p>The MaalonDrive® UHV 10mm - type 3 micro positioning gear was specially designed for use in vacuums and features a customer-specific design of the input and output shaft. For use in ultra-high-vacuum environments, Fomblin is used as lubricant in both the ball bearings and in the gear component set. Both the input shaft as well as the output shaft are precisely guided by preloaded ball bearings and thereby allow the application to be directly connected. At the heart of the gear is a zero-backlash MaalonDrive® gear component set with a reduction ratio of 160:1.</p>

Technical parameter

P-029



Technical Supply Specifications: MaalonDrive® UHV 10mm - Type 3



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Nr.	Parameter	Symbol	Value	Hint
P-001	Vacuum suitable		HV	
P-003	Ratio	i	160 : 1	
P-004	Self-locking		yes	
P-006	Hollow shaft		1.2	
P-008	Repeatability unidirectional		22.5 arcsec	
P-009	Repeatability bidirectional		30 arcmin	
P-010	Accuracy		12 arcmin	
P-011	Transmission accuracy		24 arcmin	
P-013	Torsional stiffness		8.25 $\frac{\text{Nm}}{\text{rad}}$	
P-014	Lost motion		18 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	1000 rpm	
P-022	Maximum input speed	n	1000 rpm	
P-023	Rated output speed	n	6.25 rpm	
P-024	Maximum output speed	n	6.25 rpm	
P-026	No-load starting torque	T	330 μNm	
P-027	No-load running torque	T	220 μNm	
P-028	Rated running torque	T	1380 μNm	
P-034	Lifetime for rated operation		500 h	
P-035	Radial backlash output shaft		0 μm	
P-036	Axial backlash output shaft		0 μm	
P-037	Radial stiffness	c	1.35 $\text{N}/\mu\text{m}$	
P-038	Axial stiffness	c	40 $\text{N}/\mu\text{m}$	
P-039	Max. radial load on output shaft (non-operating, constant load)	F	40 N	
P-040	Max. radial load on output shaft (non-operating, impulsive load)	F	15 N	
P-041	Max. radial load on output shaft (operating, constant load)	F	5 N	
P-042	Max. radial load on output shaft (operating, impulsive load)	F	5 N	
P-043	Max. axial load on output shaft (non-operating, constant	F	150 N	

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Nr.	Parameter	Symbol	Value	Hint
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	15 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	6 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	64 N	
P-052	Max. axial load on input shaft (non-operating, impulsive load)	F	20 N	
P-053	Max. axial load on input shaft (operating, constant load)	F	185 N	
P-054	Max. axial load on input shaft (operating, impulsive load)	F	66 N	
P-055	Moment of inertia	I	$60 * 10^{-4} \text{ gcm}^2$	
P-056	Weight	m	6 g	
P-057	Min. permissible ambient temperature (non-operating)	T	-80 °C	
P-058	Min. permissible ambient temperature (operating)	T	-10 °C	
P-059	Max. permissible ambient temperature (non-operating)	T	150 °C	
P-060	Max. permissible ambient temperature (operating)	T	120 °C	

Material information

Nr.	Parameter	Symbol	Value	Hint
P-900	RoHS compliant		yes	
P-901	Lubrication of output bearing gearbox		FomblinGRM60	
P-902	Lubrication of input bearing gearbox		FomblinGRM60	
P-903	Lubrication of gear component set		FomblinGRM60	
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	

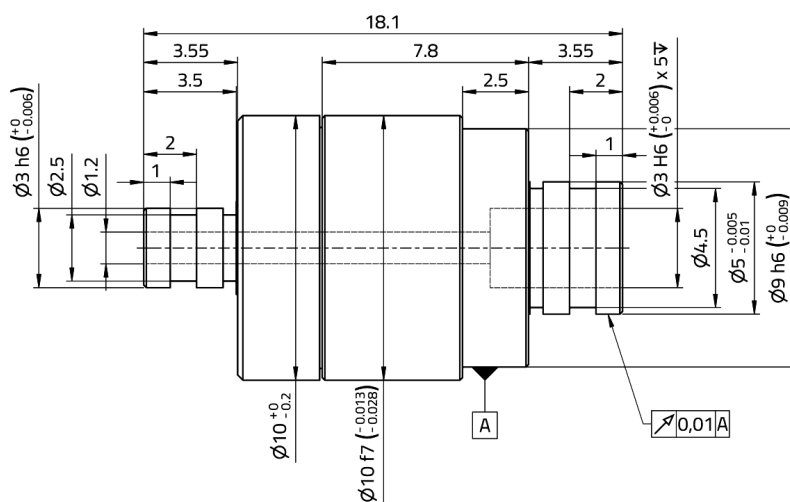
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Nr.	Parameter	Symbol	Value	Hint
P-912	Material of gearbox output side		1.4305 DIN EN	
P-913	Material of gearbox input side		1.4305 DIN EN	

Technical drawing



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