

HDP+ – Cleanliness guaranteed



HDP+

Product highlights

Positioning accuracy: Minimal backlash and extreme torsional rigidity ensure maximum positioning accuracy

New freedom in design through direct process integration

Resistance: Resistant against chemical cleaning agents and disinfectants

Cleaning: Fast, efficient and safe cleaning, also suitable for CIP processes

Consistently high performance: Constant backlash throughout the service life of the gearbox ensures a consistently high performance

Max. achievable leak tightness: IP69X (max. 30 bar)

Sterile, highly dynamic and outstanding positioning accuracy – the HDP+ meets the strict hygiene requirements of production and packaging facilities. The gearbox in hygienic design not only offers you maximum safety against contamination-related product and process risks, but also guarantees maximum system availability and productivity.

HDP+ is setting new industrial standards in hygienic design

Benefits for system manufacturers

- Integration in a system constructed according to Hygiene Design requirements (certification available)
- Meets legal obligations (machinery directive, food hygiene regulation)
- Reduction of individual parts simplifies production / assembly and allows a more compact machine design
- Greater overall system effectiveness
- Competitive advantage through innovation

Benefits for operators

- Easier, faster cleaning: shorter CIP / SIP times
- Improved reliability and longer life
- Quick and easy disassembly
- Reduced consumption of cleaning materials
- Minimal costs for maintenance and repair
- Cost savings: competitive advantage and lower end user price
- Increased food safety



Used for fish processing



Used for filling and packing milk products

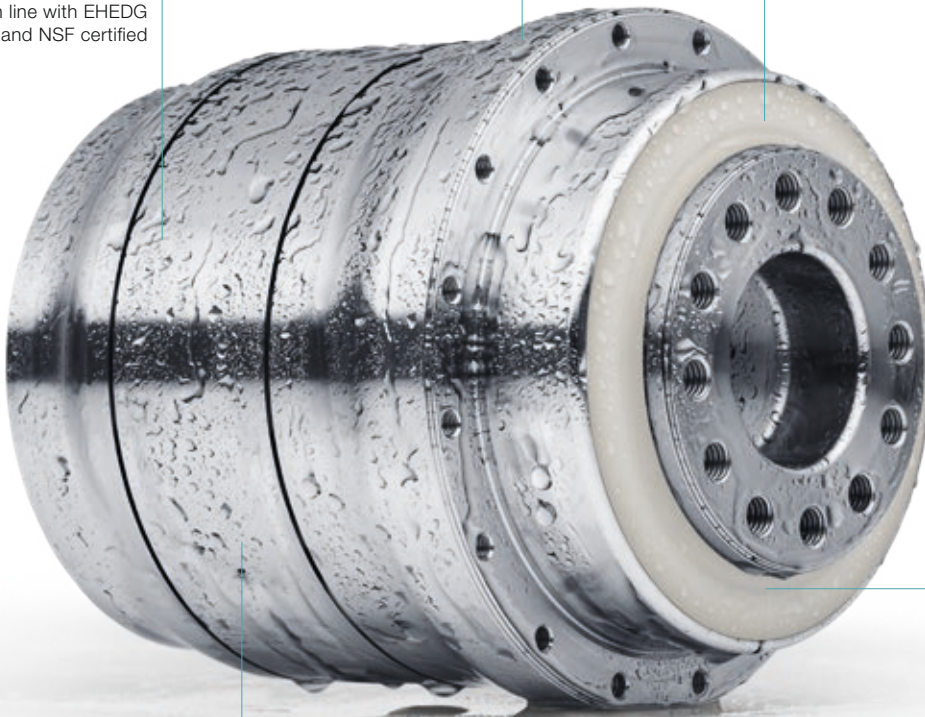


More information on hygienic design solutions: Simply scan the QR code with your smartphone.

Smooth rolled surface in hygienic steel 1.4404

Triple sealing concept guarantees optimal reliability

Designed in line with EHEDG guidelines, FDA and NSF certified



Seals resistant to cleaning materials have IP69X protection (max. 30 bar)

No dead spaces

Application-spec.
solutions



Used for portioning meat products



The high-precision HDP* is ideal for Delta robotics applications

HDP⁺ 010 MA 2-stage

				2-stage					
Ratio			<i>i</i>		22	27.5	38.5	55	
Max. torque ^{a) b)}			<i>T</i> _{2a}	<i>Nm</i>	252	252	252	252	
				<i>in.lb</i>	2230	2230	2230	2230	
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)			<i>T</i> _{2B}	<i>Nm</i>	185	185	185	185	
				<i>in.lb</i>	1637	1637	1637	1637	
Nominal torque (at <i>n</i> _{1N})			<i>T</i> _{2N}	<i>Nm</i>	140	137	139	147	
				<i>in.lb</i>	1242	1213	1230	1303	
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)			<i>T</i> _{2Not}	<i>Nm</i>	525	525	525	525	
				<i>in.lb</i>	4647	4647	4647	4647	
Permitted average input speed (at <i>T</i> _{2N} and 20 °C ambient temperature) ^{d)}			<i>n</i> _{1N}	<i>rpm</i>	4000	4000	4000	4000	
Max. input speed			<i>n</i> _{1Max}	<i>rpm</i>	7500	7500	7500	7500	
Mean no load running torque ^{b)} (at <i>n</i> ₁ = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> ₀₁₂	<i>Nm</i>	0.52	0.47	0.38	0.38	
				<i>in.lb</i>	4.6	4.2	3.4	3.4	
Max. backlash			<i>j</i> _t	<i>arcmin</i>	≤ 1				
Torsional rigidity ^{b)}			<i>C</i> _{t21}	<i>Nm/arcmin</i>	43	43	43	42	
				<i>in.lb/arcmin</i>	381	381	381	372	
Tilting rigidity			<i>C</i> _{2K}	<i>Nm/arcmin</i>	225				
				<i>in.lb/arcmin</i>	1991				
Max. axial force ^{c)}			<i>F</i> _{2AMax}	<i>N</i>	2795				
				<i>lb_f</i>	629				
Max. tilting moment			<i>M</i> _{2KMax}	<i>Nm</i>	400				
				<i>in.lb</i>	3540				
Efficiency at full load			<i>η</i>	%	94				
Service life			<i>L</i> _h	<i>h</i>	> 20000				
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	7.3				
				<i>lb_m</i>	16.1				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> _{PA}	<i>dB(A)</i>	≤ 56				
Max. permitted housing temperature				°C	+90				
				<i>F</i>	194				
Ambient temperature				°C	–15 to +40				
				<i>F</i>	5 to 104				
Lubrication					Lubricated for life				
Direction of rotation					In- and output same direction				
Protection class					IP 69X				
Metal bellows coupling (recommended product type – validate sizing with cymex®)					-				
Bore diameter of coupling on the application side				<i>mm</i>	-				
Mass moment of inertia (relates to the drive)		C	14	<i>J</i> ₁	<i>kgcm</i> ²	0.21	0.18	0.16	0.14
					<i>10⁻³ in.lb.s</i> ²	0.19	0.16	0.14	0.12
Clamping hub diameter [mm]		E	19	<i>J</i> ₁	<i>kgcm</i> ²	0.52	0.50	0.47	0.46
Optimized mass inertia version available on request					<i>10⁻³ in.lb.s</i> ²	0.46	0.44	0.42	0.41

Please use our sizing software cymex[®] for a detailed sizing – www.wittenstein-cymex.com

^{a)} At max. 10 % M_{2KMax}

^{b)} Valid for standard clamping hub diameter

^{c)} Refers to center of the output shaft or flange

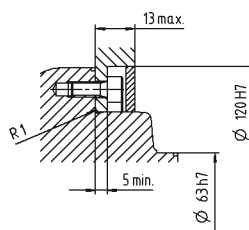
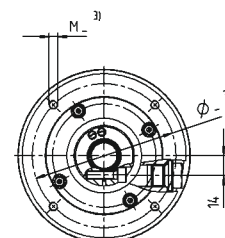
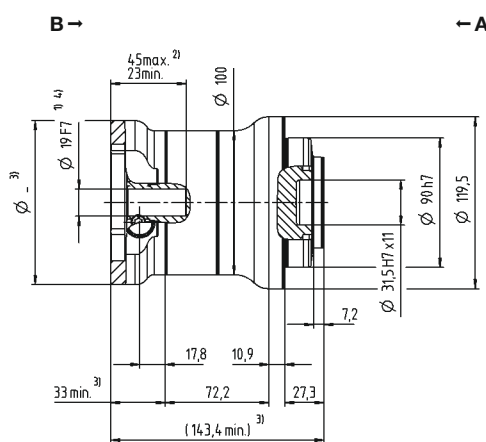
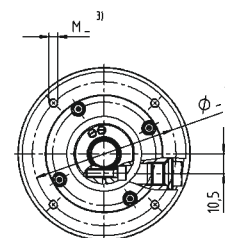
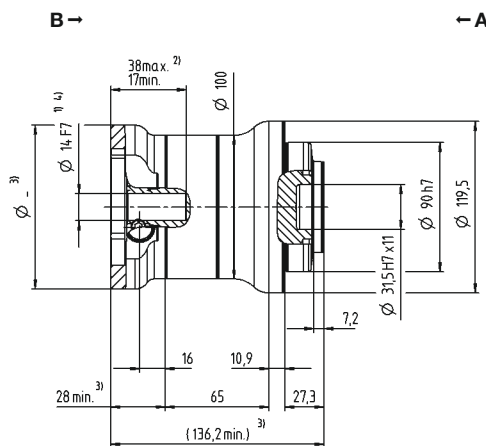
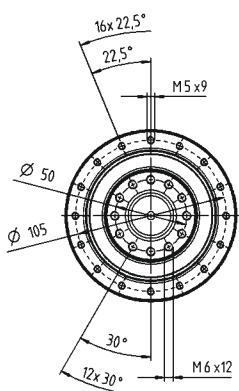
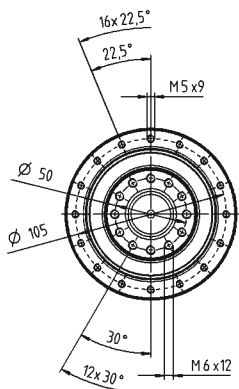
^{d)} Please reduce input speed at higher ambient temperatures

View A

View B

2-stage

up to 14 ⁴⁾ (C) ⁵⁾
clamping hub
diameter



Mounting accessories:
Mounting kit comprising seals and
O-rings available as an option.

Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

³⁾ The dimensions depend on the motor

⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm

⁵⁾ Standard clamping hub diameter

Motor shaft diameter [mm]

up to 19 ⁴⁾ (E)
clamping hub
diameter

HDP+ 025 MA 2-stage

				2-stage			
Ratio	<i>i</i>			22	27.5	38.5	55
Max. torque ^{a) b)}	T_{2a}	Nm		466	466	466	466
		in.lb		4128	4128	4128	4128
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm		425	425	425	425
		in.lb		3762	3762	3762	3762
Nominal torque (at n_n)	T_{2N}	Nm		312	314	371	413
		in.lb		2762	2775	3286	3652
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm		1200	1200	1200	1200
		in.lb		10621	10621	10621	10621
Permitted average input speed (at T_{2N} and 20 °C ambient temperature) ^{d)}	n_{1N}	rpm		3500	3500	3500	3500
Max. input speed	n_{1Max}	rpm		7500	7500	7500	7500
Mean no load running torque ^{b)} (at $n_i = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm		1.0	0.87	0.78	0.70
		in.lb		9.2	7.7	6.9	6.2
Max. backlash	j_t	arcmin		≤ 1			
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin		100	100	100	100
		in.lb/arcmin		885	885	885	885
Tilting rigidity	C_{2K}	Nm/arcmin		550			
		in.lb/arcmin		4868			
Max. axial force ^{c)}	F_{2AMax}	N		4800			
		lb _f		1080			
Max. tilting moment	M_{2KMax}	Nm		550			
		in.lb		4868			
Efficiency at full load	η	%		94			
Service life	L_h	h		> 20000			
Weight (incl. standard adapter plate)	m	kg		11.1			
		lb _m		24.5			
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)		≤ 58			
Max. permitted housing temperature		°C		+90			
		F		194			
Ambient temperature		°C		-15 to +40			
		F		5 to 104			
Lubrication				Lubricated for life			
Direction of rotation				In- and output same direction			
Protection class				IP 69X			
Metal bellows coupling (recommended product type – validate sizing with cymex [®])				-			
Bore diameter of coupling on the application side		mm		-			
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm] Optimized mass inertia version available on request	E 19	J_1	kgcm ²	0.87	0.70	0.60	0.55
			10 ⁻³ in.lb.s ²	0.77	0.62	0.53	0.49
	G 24	J_1	kgcm ²	2.39	2.22	2.12	2.07
			10 ⁻³ in.lb.s ²	2.12	1.96	1.88	1.83

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^{a)} At max. 10 % M_{2KMax}

^{b)} Valid for standard clamping hub diameter

^{c)} Refers to center of the output shaft or flange

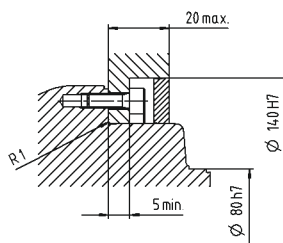
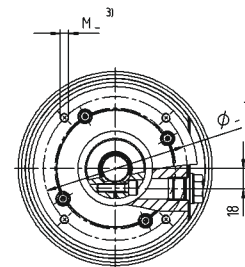
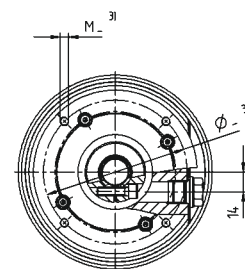
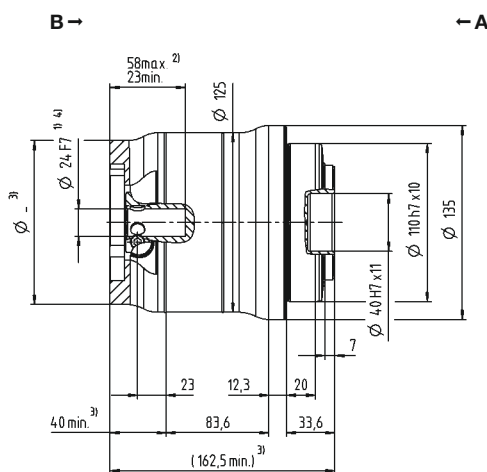
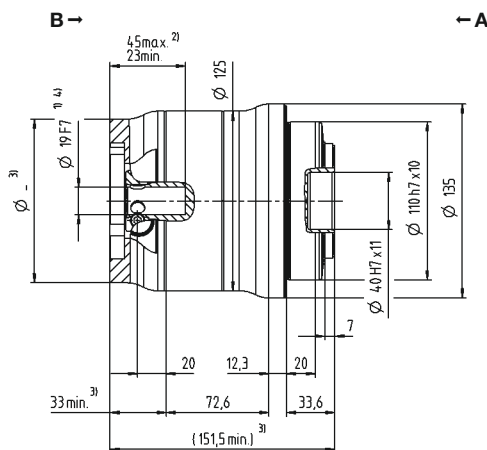
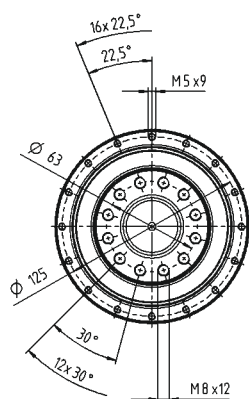
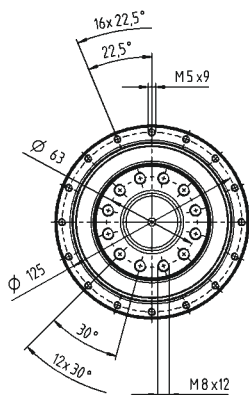
^{d)} Please reduce input speed at higher ambient temperatures

View A

View B

2-stage

up to 19 ⁴⁾ (E) ⁵⁾
clamping hub
diameter



Mounting accessories:
Mounting kit comprising seals and
O-rings available as an option.

Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

³⁾ The dimensions depend on the motor

⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm

⁵⁾ Standard clamping hub diameter

Motor shaft diameter [mm]

up to 24 ⁴⁾ (G)
clamping hub
diameter

HDP+ 050 MA 2-stage

				2-stage				
Ratio			<i>i</i>		22	27.5	38.5	55
Max. torque ^{a) b)}			<i>T</i> _{2a}	<i>Nm</i>	1121	1121	1121	1121
				<i>in.lb</i>	9925	9925	9925	9925
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)			<i>T</i> _{2B}	<i>Nm</i>	795	795	795	795
				<i>in.lb</i>	7036	7036	7036	7036
Nominal torque (at <i>n</i> _N)			<i>T</i> _{2N}	<i>Nm</i>	523	566	638	717
				<i>in.lb</i>	4632	5005	5649	6348
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)			<i>T</i> _{2Not}	<i>Nm</i>	2375	2375	2375	2375
				<i>in.lb</i>	21021	21021	21021	21021
Permitted average input speed (at <i>T</i> _{2N} and 20 °C ambient temperature) ^{d)}			<i>n</i> _{1N}	<i>rpm</i>	3000	3000	3000	3000
Max. input speed			<i>n</i> _{1Max}	<i>rpm</i>	6250	6250	6250	6250
Mean no load running torque ^{b)} (at <i>n</i> _l = 3000 rpm and 20 °C gearbox temperature)			<i>T</i> ₀₁₂	<i>Nm</i>	2.7	2.4	2.1	1.7
				<i>in.lb</i>	23.9	21.2	18.9	15.0
Max. backlash			<i>j</i> _t	<i>arcmin</i>	≤ 1			
Torsional rigidity ^{b)}			<i>C</i> _{t21}	<i>Nm/arcmin</i>	210	210	210	210
				<i>in.lb/arcmin</i>	1859	1859	1859	1859
Tilting rigidity			<i>C</i> _{2K}	<i>Nm/arcmin</i>	560			
				<i>in.lb/arcmin</i>	4956			
Max. axial force ^{c)}			<i>F</i> _{2AMax}	<i>N</i>	6130			
				<i>lb_f</i>	1379			
Max. tilting moment			<i>M</i> _{2KMax}	<i>Nm</i>	1335			
				<i>in.lb</i>	11816			
Efficiency at full load			<i>η</i>	%	94			
Service life			<i>L</i> _h	<i>h</i>	> 20000			
Weight (incl. standard adapter plate)			<i>m</i>	<i>kg</i>	21.9			
				<i>lb_m</i>	48.4			
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex®)			<i>L</i> _{PA}	<i>dB(A)</i>	≤ 60			
Max. permitted housing temperature				°C	+90			
				<i>F</i>	194			
Ambient temperature				°C	–15 to +40			
				<i>F</i>	5 to 104			
Lubrication					Lubricated for life			
Direction of rotation					In- and output same direction			
Protection class					IP 69X			
Metal bellows coupling (recommended product type – validate sizing with cymex®)					-			
Bore diameter of coupling on the application side				<i>mm</i>	-			
Mass moment of inertia (relates to the drive) Clamping hub diameter [mm] Optimized mass inertia version available on request	G	24	<i>J</i> _l	<i>kgcm²</i>	3.80	3.33	3.00	2.80
				<i>10⁻³ in.lb.s²</i>	3.36	2.95	2.66	2.48
	K	38	<i>J</i> _l	<i>kgcm²</i>	10.7	10.3	9.90	9.70
				<i>10⁻³ in.lb.s²</i>	9.47	9.12	8.76	8.58

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^{a)} At max. 10 % M_{2KMax}

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^{c)} Refers to center of the output shaft or flange

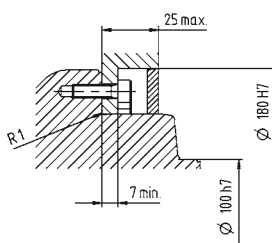
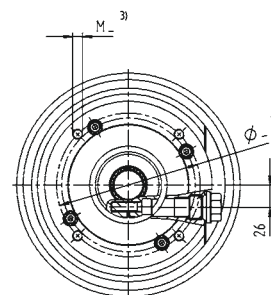
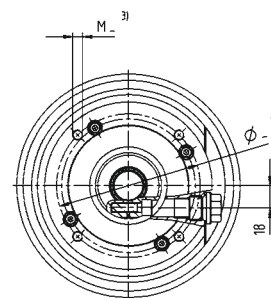
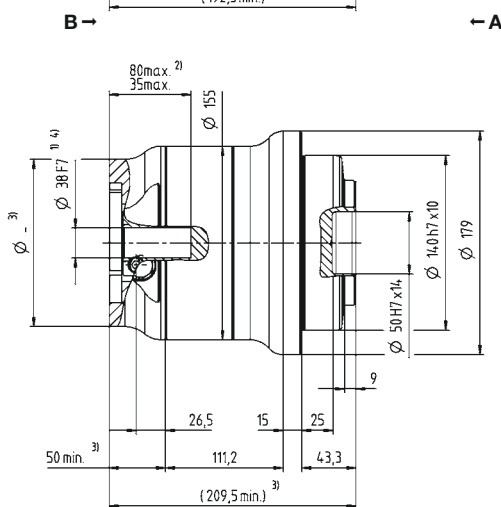
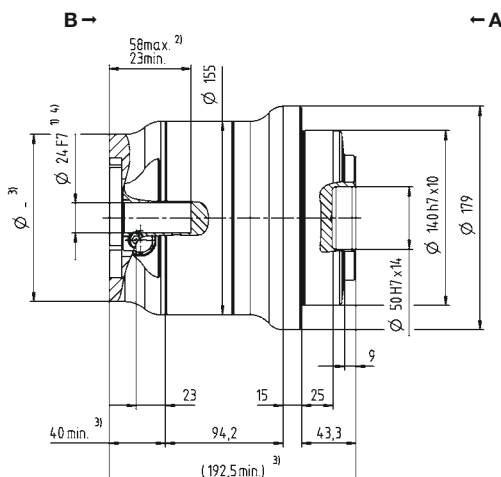
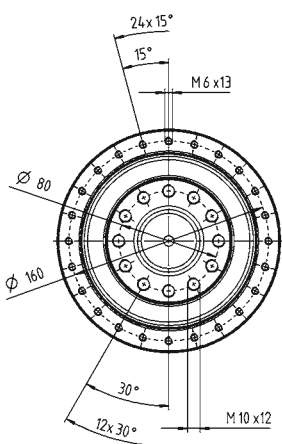
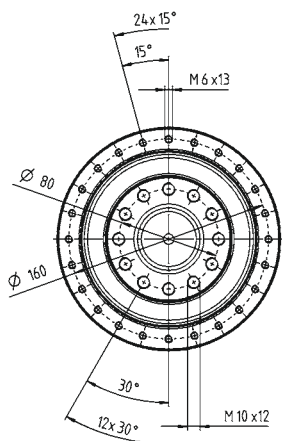
^{d)} Please reduce input speed at higher ambient temperatures

View A

View B

2-stage

up to 24 ⁴⁾ (G) ⁵⁾
clamping hub
diameter



Mounting accessories:
Mounting kit comprising seals and
O-rings available as an option.

Non-tolerated dimensions are nominal dimensions

¹⁾ Check motor shaft fit

²⁾ Min./Max. permissible motor shaft length. Longer motor shafts are possible, please contact alpha.

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⁴⁾ Smaller motor shaft diameter is compensated by a bushing with a minimum thickness of 1 mm

⁵⁾ Standard clamping hub diameter

Motor shaft diameter [mm]

up to 38 ⁴⁾ (K)
clamping hub
diameter