

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

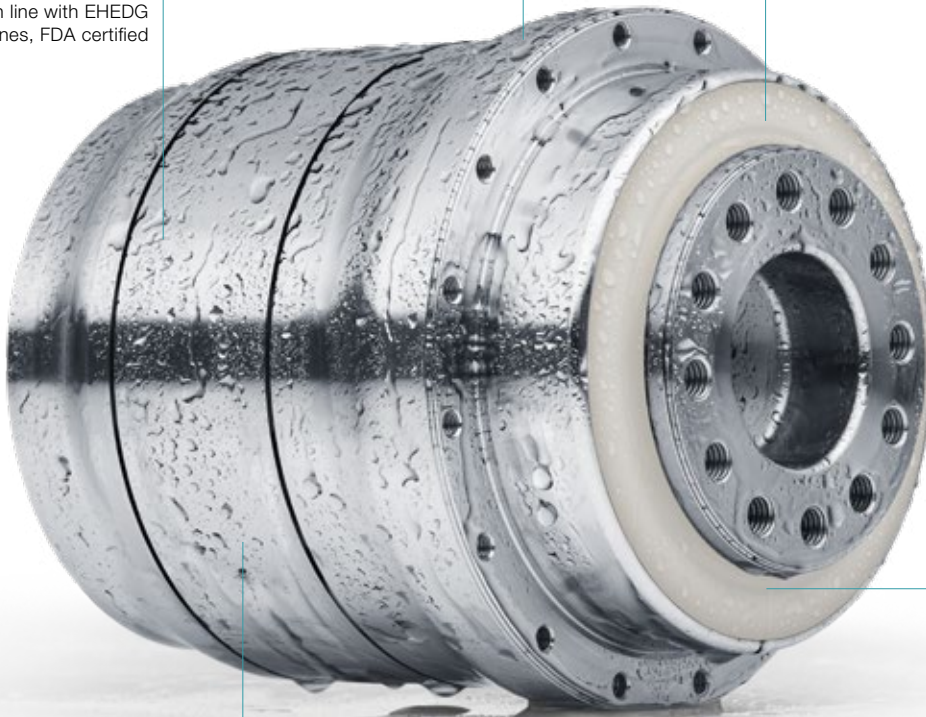


More information on hygienic design solutions: Simply scan the QR code with your smartphone.

Smooth rolled surface in hygienic steel 1.4404

Triple sealing concept guarantees optimal reliability

Designed in line with EHEDG guidelines, FDA 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)}	T_{2a}	Nm	252	252	252	252		
		in.lb	2230	2230	2230	2230		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	185	185	185	185		
		in.lb	1637	1637	1637	1637		
Nominal torque (at n_n)	T_{2N}	Nm	140	137	139	147		
		in.lb	1242	1213	1230	1303		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	525	525	525	525		
		in.lb	4647	4647	4647	4647		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	rpm	4000	4000	4000	4000		
Max. input speed	n_{1Max}	rpm	7500	7500	7500	7500		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	0.52	0.47	0.38	0.38		
		in.lb	4.6	4.2	3.4	3.4		
Max. backlash	j_t	arcmin	≤ 1					
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	43	43	43	42		
		in.lb/arcmin	381	381	381	372		
Tilting rigidity	C_{2K}	Nm/arcmin	225					
		in.lb/arcmin	1991					
Max. axial force ^{c)}	F_{2AMax}	N	2795					
		lb _f	629					
Max. tilting moment	M_{2KMax}	Nm	400					
		in.lb	3540					
Efficiency at full load	η	%	94					
Service life	L_h	h	> 20000					
Weight (incl. standard adapter plate)	m	kg	7.3					
		lb _m	16.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 56					
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	C	14	J_1	kgcm ²	0.21	0.18	0.16	0.14
				10 ⁻³ in.lb.s ²	0.19	0.16	0.14	0.12
	E	19	J_1	kgcm ²	0.52	0.50	0.47	0.46
				10 ⁻³ in.lb.s 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

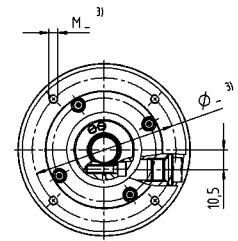
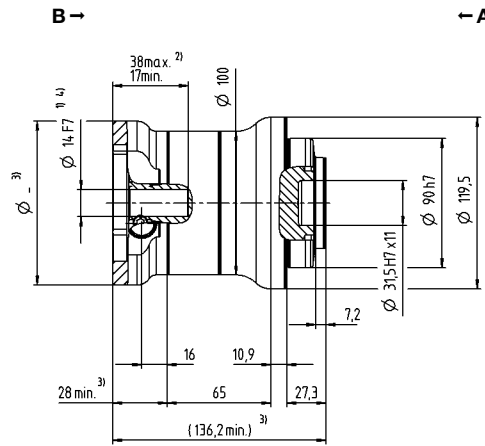
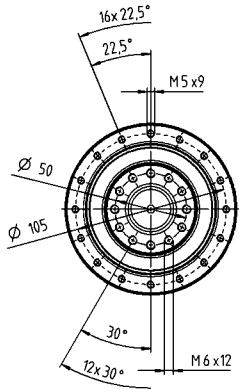
^{d)} Please reduce input speed at higher ambient temperatures

View A

View B

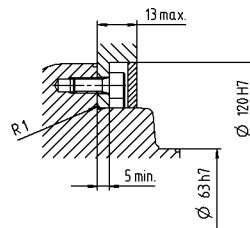
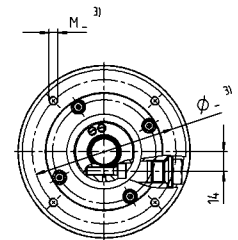
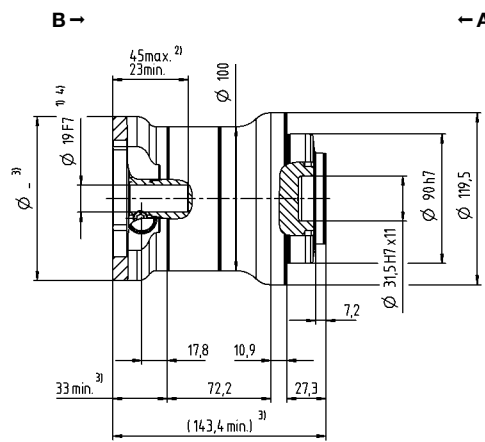
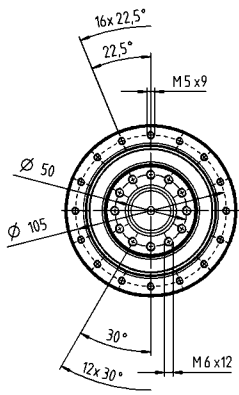
2-stage

up to 14⁴⁾ (C)⁵⁾
clamping hub
diameter



Motor shaft diameter [mm]

up to 19⁴⁾ (E)
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

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_{2a} 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 $n_1 = 3000$ 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

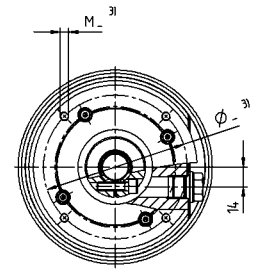
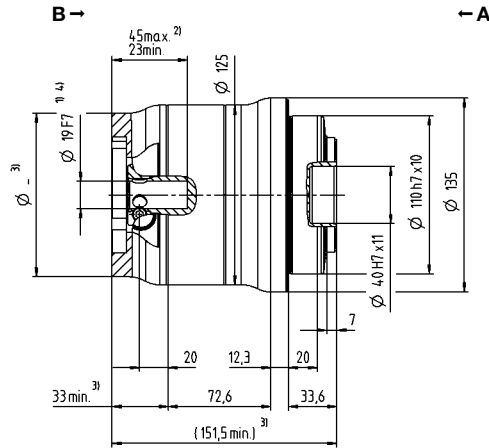
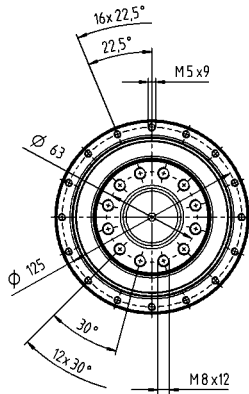
^{d)} Please reduce input speed at higher ambient temperatures

View A

View B

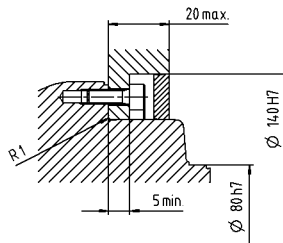
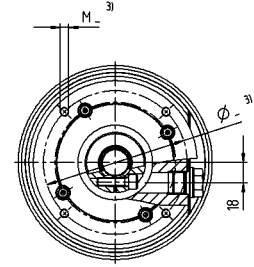
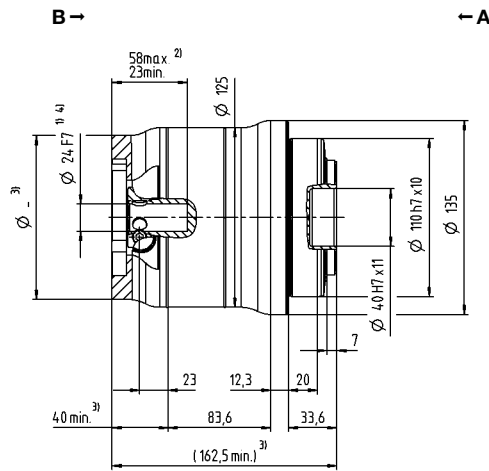
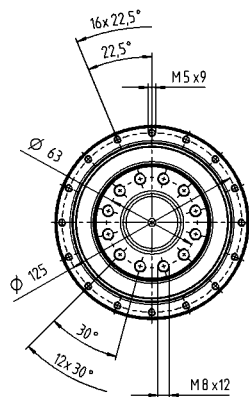
2-stage

up to 19⁴⁾ (E)⁵⁾
clamping hub diameter



Motor shaft diameter [mm]

up to 24⁴⁾ (G)
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

HDP+ 050 MA 2-stage

			2-stage					
Ratio	<i>i</i>		22	27.5	38.5	55		
Max. torque ^{a) b)}	T_{2a}	Nm	1121	1121	1121	1121		
		in.lb	9925	9925	9925	9925		
Max. acceleration torque ^{b)} (max. 1000 cycles per hour)	T_{2B}	Nm	795	795	795	795		
		in.lb	7036	7036	7036	7036		
Nominal torque (at n_n)	T_{2N}	Nm	523	566	638	717		
		in.lb	4632	5005	5649	6348		
Emergency stop torque ^{a) b)} (permitted 1000 times during the service life of the gearbox)	T_{2Not}	Nm	2375	2375	2375	2375		
		in.lb	21021	21021	21021	21021		
Permitted average input speed (at T_{2a} and 20 °C ambient temperature) ^{d)}	n_{1N}	rpm	3000	3000	3000	3000		
Max. input speed	n_{1Max}	rpm	6250	6250	6250	6250		
Mean no load running torque ^{b)} (at $n_1 = 3000$ rpm and 20 °C gearbox temperature)	T_{012}	Nm	2.7	2.4	2.1	1.7		
		in.lb	23.9	21.2	18.9	15.0		
Max. backlash	j_t	arcmin	≤ 1					
Torsional rigidity ^{b)}	C_{t21}	Nm/arcmin	210	210	210	210		
		in.lb/arcmin	1859	1859	1859	1859		
Tilting rigidity	C_{2K}	Nm/arcmin	560					
		in.lb/arcmin	4956					
Max. axial force ^{c)}	F_{2AMax}	N	6130					
		lb _f	1379					
Max. tilting moment	M_{2KMax}	Nm	1335					
		in.lb	11816					
Efficiency at full load	η	%	94					
Service life	L_h	h	> 20000					
Weight (incl. standard adapter plate)	m	kg	21.9					
		lb _m	48.4					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex [®])	L_{PA}	dB(A)	≤ 60					
			+90					
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	G	24	J_1	kgcm ²	3.80	3.33	3.00	2.80
				10 ⁻³ in.lb.s ²	3.36	2.95	2.66	2.48
	K	38	J_1	kgcm ²	10.7	10.3	9.90	9.70
				10 ⁻³ in.lb.s ²	9.47	9.12	8.76	8.58

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

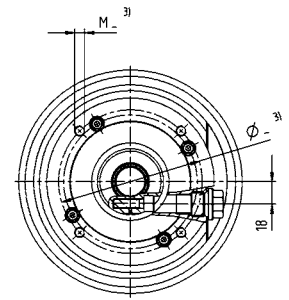
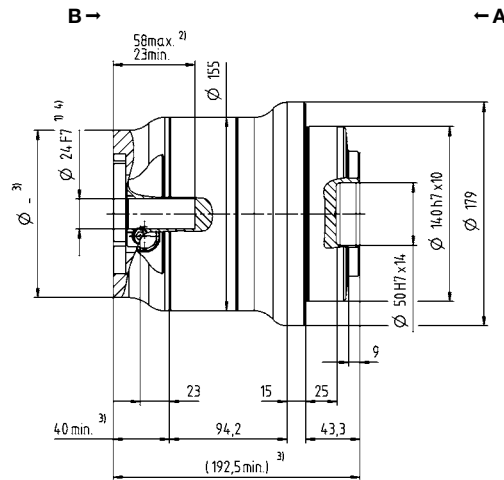
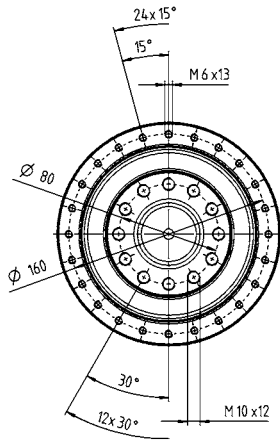
^{d)} Please reduce input speed at higher ambient temperatures

View A

View B

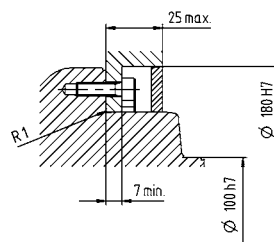
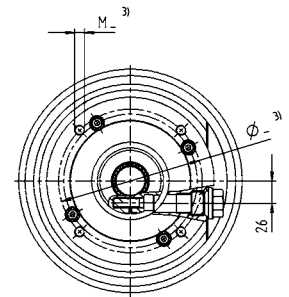
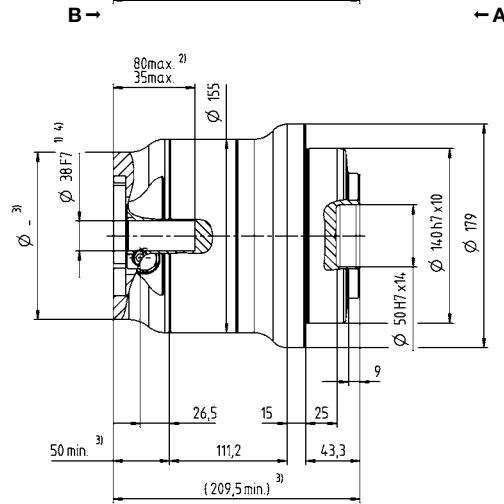
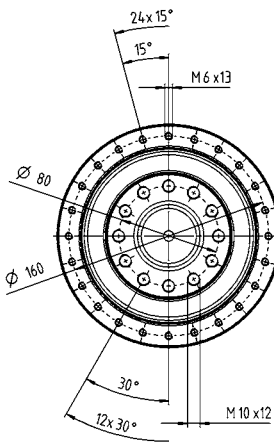
2-stage

up to 24⁴⁾ (G)⁵⁾
clamping hub
diameter



Motor shaft diameter [mm]

up to 38⁴⁾ (K)
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