

# 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)

Aseptic, 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

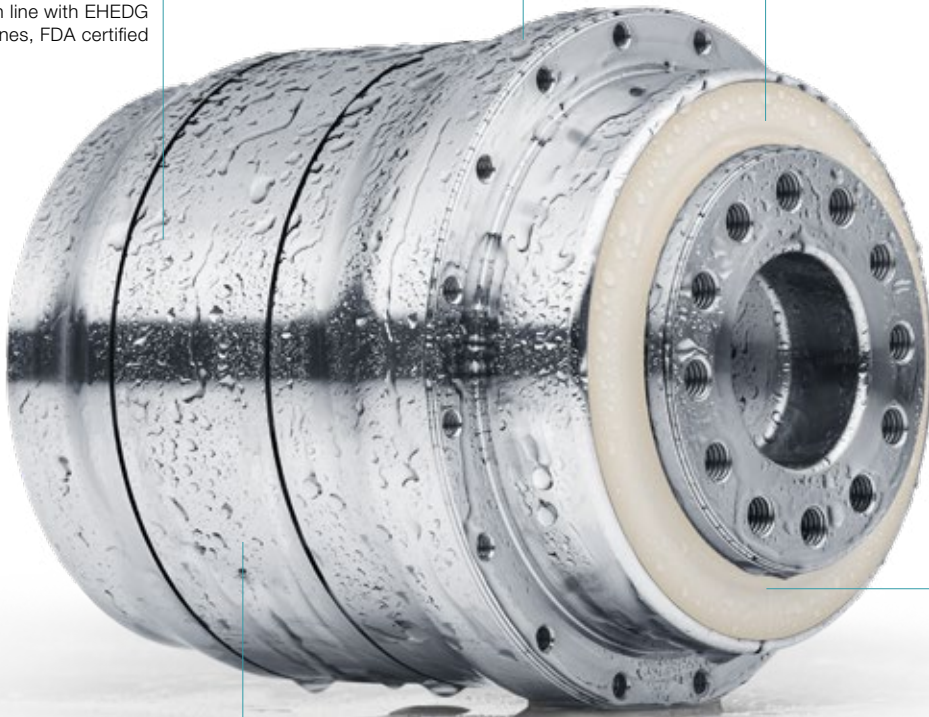


More information on hygienic design solutions: Simply scan the QR code with your smartphone.

Smooth rolled surface in hygienic steel 1.4404

Triple sealing concept guarantees optimal reliability

Designed in line with EHEDG guidelines, FDA certified



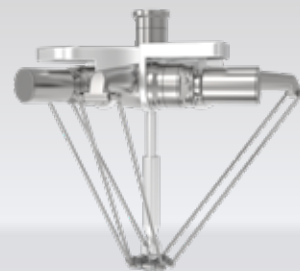
Seals resistant to cleaning materials have IP69X protection (max. 30 bar)

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	$i$		22	27.5	38.5	55		
Max. torque <sup>a) b)</sup>	$T_{2a}$	Nm	252	252	252	252		
		in.lb	2230	2230	2230	2230		
Max. acceleration torque <sup>b)</sup> (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 <sup>a) b)</sup> (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) <sup>d)</sup>	$n_{1N}$	rpm	4000	4000	4000	4000		
Max. input speed	$n_{1Max}$	rpm	7500	7500	7500	7500		
Mean no load running torque <sup>b)</sup> (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 <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	2795					
		lb <sub>f</sub>	629					
Max. tilting moment	$M_{2KMax}$	Nm	400					
		in.lb	3540					
Efficiency at full load	$\eta$	%	94					
Service life <sup>f)</sup>	$L_h$	h	> 20000					
Weight (incl. standard adapter plate)	$m$	kg	7.3					
		lb <sub>m</sub>	16.1					
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	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 <sup>g)</sup>			IP69K (max. 30 bar)					
Metal bellows coupling (recommended product type – validate sizing with cymex <sup>®</sup> )			-					
Bore diameter of coupling on the application side		mm	-					
Mass moment of inertia (relates to the drive)	C	14	$J_1$	kgcm <sup>2</sup>	0.16	0.14	0.11	0.10
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	0.14	0.12	0.10	0.9
Clamping hub diameter [mm] Optimized mass inertia version	E	19	$J_1$	kgcm <sup>2</sup>	0.39	0.36	0.34	0.33
				10 <sup>-3</sup> in.lb.s <sup>2</sup>	0.35	0.32	0.30	0.29

Please use our sizing software cymex<sup>®</sup> for a detailed sizing – [www.wittenstein-cymex.com](http://www.wittenstein-cymex.com)

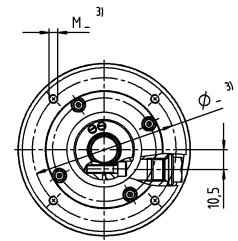
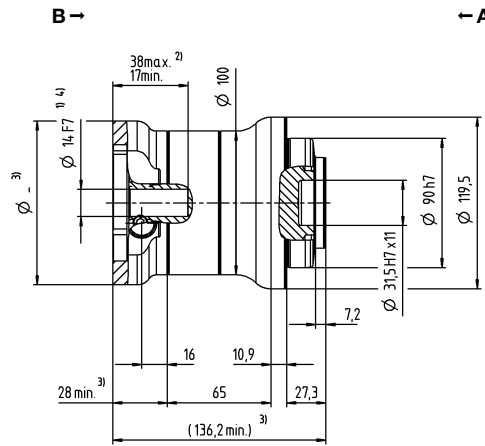
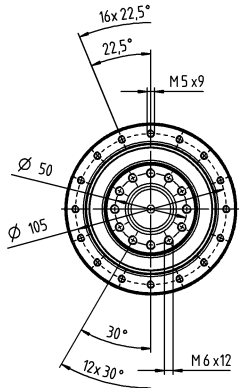
- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>f)</sup> Please contact us to discuss application-specific service lifetimes
- <sup>g)</sup> Applies at standstill, for details see operating instructions

View A

View B

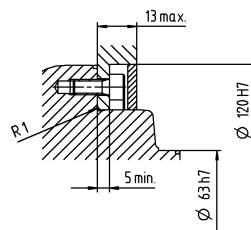
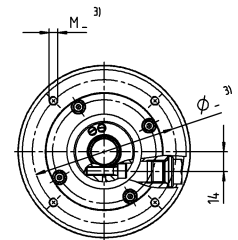
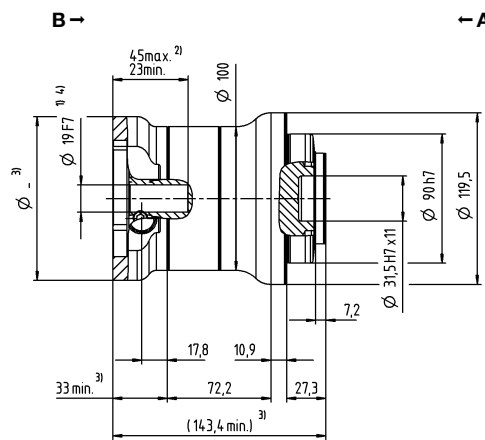
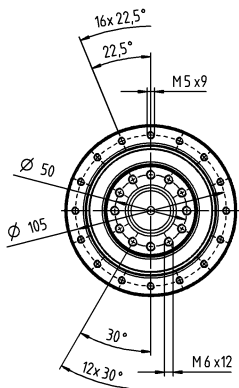
# 2-stage

up to 14<sup>4)</sup> (C)<sup>5)</sup>  
clamping hub  
diameter



Motor shaft diameter [mm]

up to 19<sup>4)</sup> (E)  
clamping hub  
diameter



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

Non-tolerated dimensions are nominal dimensions

<sup>1)</sup> Check motor shaft fit

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

<sup>3)</sup> The dimensions depend on the motor

<sup>4)</sup> Smaller motor shaft diameter is compensated by a bushing with a minimum wall thickness of 1 mm

<sup>5)</sup> Standard clamping hub diameter

# HDP+ 025 MA 2-stage

			2-stage				
Ratio	$i$		22	27.5	38.5	55	
Max. torque <sup>a) b)</sup>	$T_{2a}$	Nm	466	466	466	466	
		in.lb	4128	4128	4128	4128	
Max. acceleration torque <sup>b)</sup> (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 <sup>a) b)</sup> (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) <sup>d)</sup>	$n_{1N}$	rpm	3500	3500	3500	3500	
Max. input speed	$n_{1Max}$	rpm	7500	7500	7500	7500	
Mean no load running torque <sup>b)</sup> (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 <sup>b)</sup>	$C_{t21}$	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 <sup>c)</sup>	$F_{2AMax}$	N	4800				
		lb <sub>f</sub>	1080				
Max. tilting moment	$M_{2KMax}$	Nm	550				
		in.lb	4868				
Efficiency at full load	$\eta$	%	94				
Service life <sup>1)</sup>	$L_h$	h	> 20000				
Weight (incl. standard adapter plate)	$m$	kg	11.1				
		lb <sub>m</sub>	24.5				
Operating noise (at reference ratio and reference speed – ratio-specific values available in cymex <sup>®</sup> )	$L_{PA}$	dB(A)	≤ 58				
		°C	+90				
Max. permitted housing temperature		F	194				
		°C	-15 to +40				
Ambient temperature		F	5 to 104				
			Lubricated for life				
Direction of rotation			In- and output same direction				
Protection class <sup>9)</sup>			IP69K (max. 30 bar)				
Metal bellows coupling (recommended product type – validate sizing with cymex <sup>®</sup> )			-				
Bore diameter of coupling on the application side		mm	-				
Mass moment of inertia (relates to the drive)	E 19	$J_1$	kgcm <sup>2</sup>	0.75	0.57	0.47	0.42
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	0.67	0.52	0.42	0.37
Clamping hub diameter [mm] Optimized mass inertia version	G 24	$J_1$	kgcm <sup>2</sup>	1.77	1.59	1.49	1.44
			10 <sup>-3</sup> in.lb.s <sup>2</sup>	1.57	1.41	1.32	1.28

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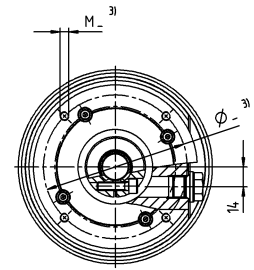
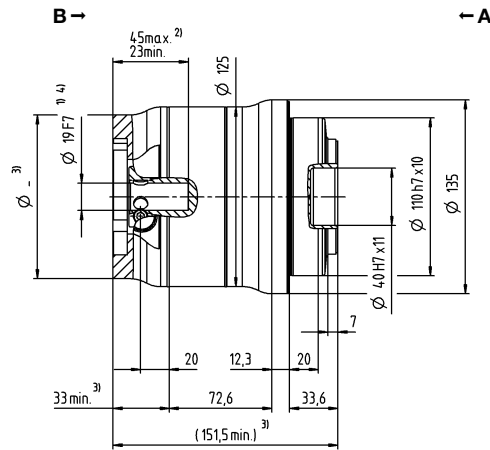
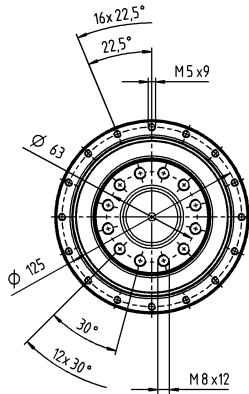
- <sup>a)</sup> At max. 10 %  $M_{2KMax}$
- <sup>b)</sup> Valid for standard clamping hub diameter
- <sup>c)</sup> Refers to center of the output shaft or flange
- <sup>d)</sup> Please reduce input speed at higher ambient temperatures
- <sup>1)</sup> Please contact us to discuss application-specific service lifetimes
- <sup>9)</sup> Applies at standstill, for details see operating instructions

View A

View B

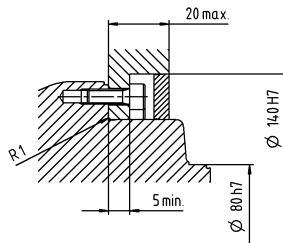
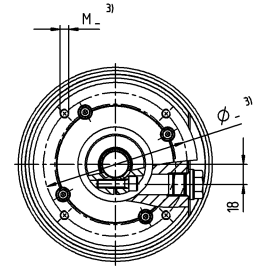
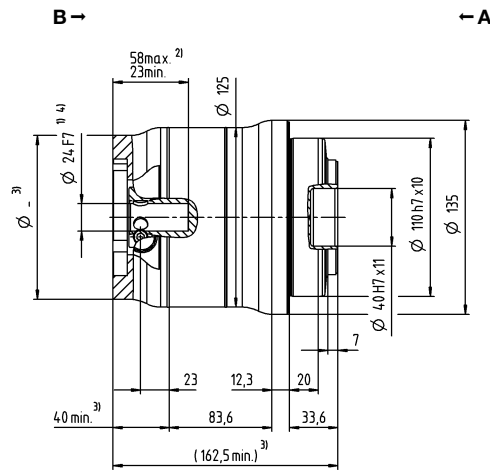
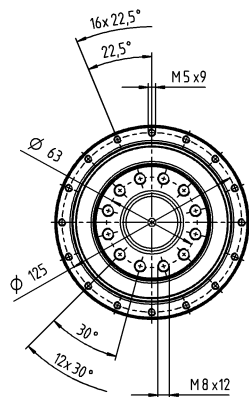
# 2-stage

up to 19<sup>4)</sup> (E)<sup>5)</sup>  
clamping hub  
diameter



Motor shaft diameter [mm]

up to 24<sup>4)</sup> (G)  
clamping hub  
diameter



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

Non-tolerated dimensions are nominal dimensions

<sup>1)</sup> Check motor shaft fit

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

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<sup>5)</sup> Standard clamping hub diameter