

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

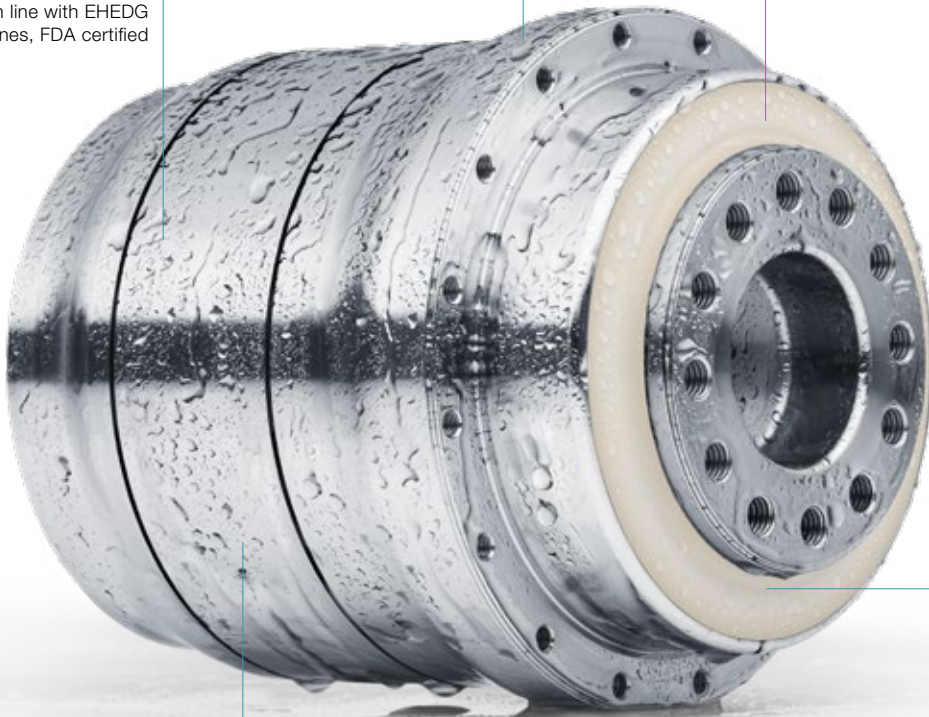


More information on hygienic design solutions: Simply scan the QR code with your smartphone.

Smooth rolled surface in hygienic steel 1.4404

Triple sealing concept guarantees optimal reliability

Designed in line with EHEDG guidelines, FDA certified



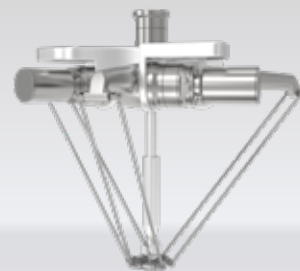
Seals resistant to cleaning materials have IP69X protection (max. 30 bar)

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 ^{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 ^{f)} | 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 ^{g)} | | | IP69K (max. 30 bar) | | | | | |
| 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 | C | 14 | J_1 | kgcm ² | 0.16 | 0.14 | 0.11 | 0.10 |
| | | | | 10 ⁻³ in.lb.s ² | 0.14 | 0.12 | 0.10 | 0.9 |
| | E | 19 | J_1 | kgcm ² | 0.39 | 0.36 | 0.34 | 0.33 |
| | | | | 10 ⁻³ in.lb.s ² | 0.35 | 0.32 | 0.30 | 0.29 |

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

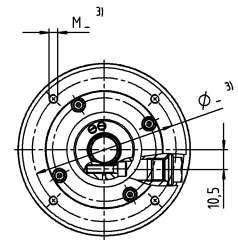
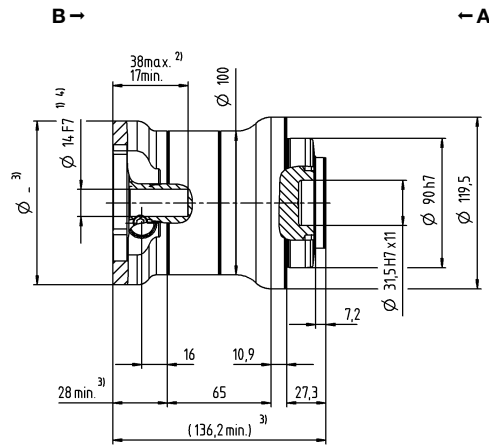
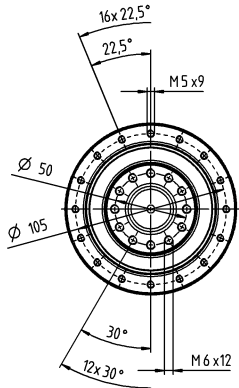
- ^{a)} At max. 10 % M_{2KMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ^{f)} Please contact us to discuss application-specific service lifetimes
- ^{g)} Applies at standstill,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

View A

View B

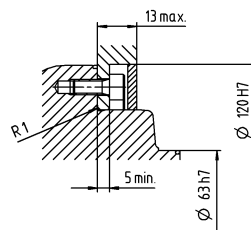
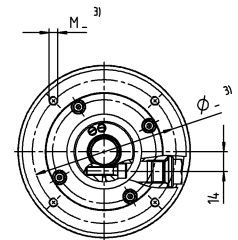
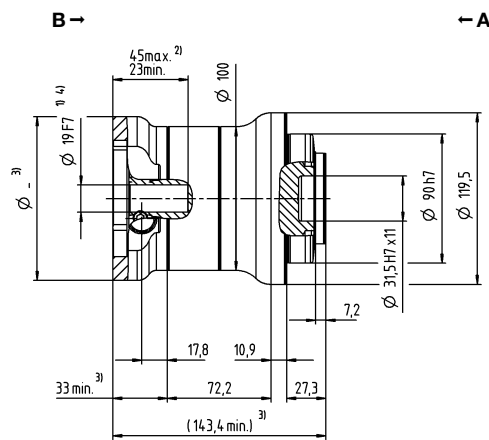
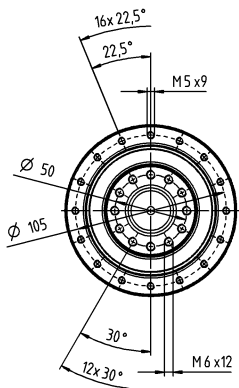
2-stage

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 wall thickness of 1 mm

⁵⁾ Standard clamping hub diameter

HDP+ 025 MA 2-stage

| | | | 2-stage | | | | | |
|---|-------------|-----------------|-------------------------------|---------------------------------------|-------|-------|------|------|
| Ratio | 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 ¹⁾ | 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 | | | | | |
| | | | +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 ⁹⁾ | | | IP69K (max. 30 bar) | | | | | |
| 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) | E | 19 | J_1 | kgcm ² | 0.75 | 0.57 | 0.47 | 0.42 |
| | | | | 10 ⁻³ in.lb.s ² | 0.67 | 0.52 | 0.42 | 0.37 |
| Clamping hub diameter [mm] Optimized mass inertia version | G | 24 | J_1 | kgcm ² | 1.77 | 1.59 | 1.49 | 1.44 |
| | | | | 10 ⁻³ in.lb.s ² | 1.57 | 1.41 | 1.32 | 1.28 |

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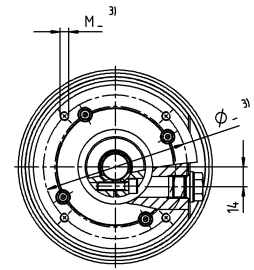
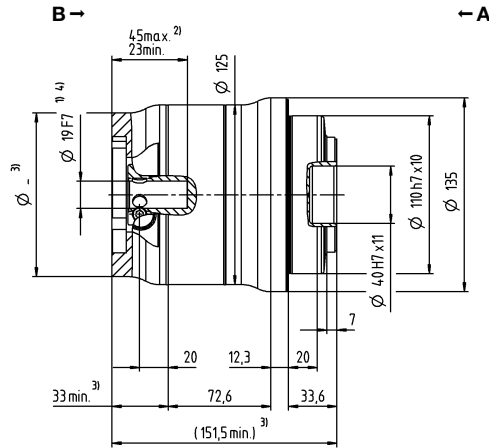
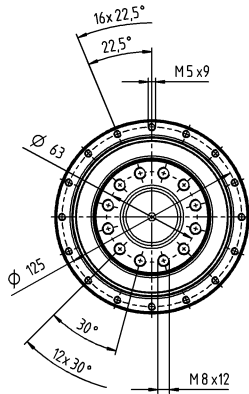
- ^{a)} At max. 10 % M_{2KMax}
- ^{b)} Valid for standard clamping hub diameter
- ^{c)} Refers to center of the output shaft or flange
- ^{d)} Please reduce input speed at higher ambient temperatures
- ¹⁾ Please contact us to discuss application-specific service lifetimes
- ⁹⁾ Applies at standstill,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

View A

View B

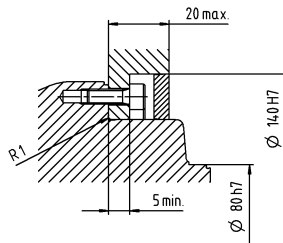
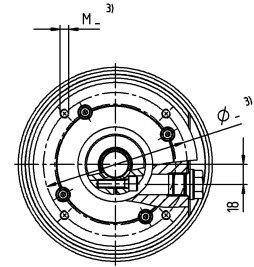
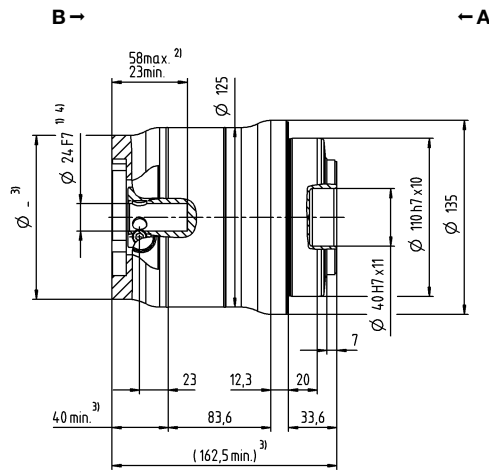
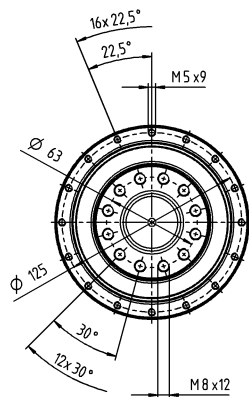
2-stage

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 wall thickness of 1 mm

⁵⁾ Standard clamping hub diameter