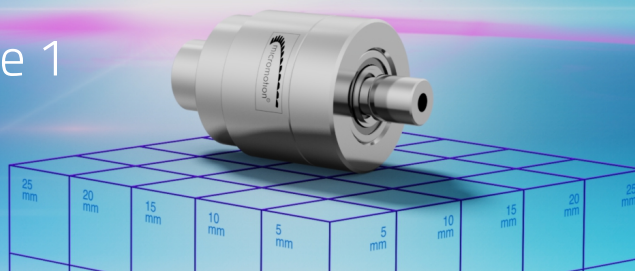


## > CoograDrive® HighVac 10mm - Type 1



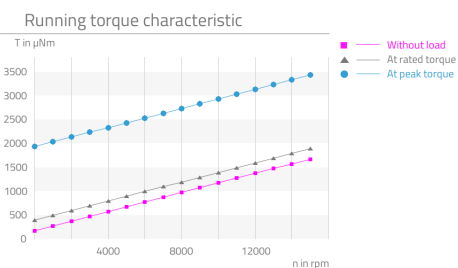
### Attributes

| Highlights                                                                                                                                                                                                                                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>▪ <b>Transmission ratio optimized to speed</b></li><li>▪ <b>Vacuum suitable lubrication</b></li><li>▪ <b>Preloaded ball bearing</b></li><li>▪ <b>Hollow shaft thru center of rotational axis</b></li><li>▪ <b>Use of high quality materials</b></li></ul> | <p>The CoograDrive® HighVac 10mm - type 1 is a micro gearbox suitable for use in high-vacuum environments. Mounted on both the input as well as on the output side of the gear are preloaded ball bearings by means of which the application can be directly connected. In addition, optical or electrical signals can be guided through the central rotary axis of the gear thanks to the hollow shaft. At the heart of this micro positioning gear is a low-backlash CoograDrive® gear with a reduction ratio of 40:1.</p> |

### Technical parameter

The stated values are based on calculations and measurements by Micromotion GmbH, carried out according to the current state of the art. You can find our definitions at [www.micromotion-drives.com](http://www.micromotion-drives.com).  
For further information please contact [sales@micromotion.de](mailto:sales@micromotion.de).

P-029



# Technical Supply Specifications: CoograDrive® HighVac 10mm - Type 1



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| Nr.   | Parameter                                                        | Symbol | Value                               | Hint |
|-------|------------------------------------------------------------------|--------|-------------------------------------|------|
| P-001 | Vacuum suitable                                                  |        | HV                                  |      |
| P-003 | Ratio                                                            | i      | 40 : 1                              |      |
| P-004 | Self-locking                                                     |        | yes                                 |      |
| P-006 | Hollow shaft                                                     |        | 1.2                                 |      |
| P-008 | Repeatability unidirectional                                     |        | 4.5 arcmin                          |      |
| P-009 | Repeatability bidirectional                                      |        | 45 arcmin                           |      |
| P-010 | Accuracy                                                         |        | 30 arcmin                           |      |
| P-011 | Transmission accuracy                                            |        | 60 arcmin                           |      |
| P-013 | Torsional stiffness                                              |        | 2.50 $\frac{\text{Nm}}{\text{rad}}$ |      |
| P-014 | Lost motion                                                      |        | 45 arcmin                           |      |
| P-015 | Backlash                                                         |        | 20 arcmin                           |      |
| P-016 | Rated torque                                                     | T      | 10 mNm                              |      |
| P-017 | Peak torque                                                      | T      | 80 mNm                              |      |
| P-018 | Momentary peak torque                                            | T      | 100 mNm                             |      |
| P-021 | Rated input speed                                                | n      | 10000 rpm                           |      |
| P-022 | Maximum input speed                                              | n      | 30000 rpm                           |      |
| P-023 | Rated output speed                                               | n      | 250 rpm                             |      |
| P-024 | Maximum output speed                                             | n      | 750 rpm                             |      |
| P-026 | No-load starting torque                                          | T      | 255 $\mu\text{Nm}$                  |      |
| P-027 | No-load running torque                                           | T      | 170 $\mu\text{Nm}$                  |      |
| P-028 | Rated running torque                                             | T      | 1500 $\mu\text{Nm}$                 |      |
| P-034 | Lifetime for rated operation                                     |        | 500 h                               |      |
| P-035 | Radial backlash output shaft                                     |        | 0 $\mu\text{m}$                     |      |
| P-036 | Axial backlash output shaft                                      |        | 0 $\mu\text{m}$                     |      |
| P-037 | Radial stiffness                                                 | c      | 2.3 N/ $\mu\text{m}$                |      |
| P-038 | Axial stiffness                                                  | c      | 40 N/ $\mu\text{m}$                 |      |
| P-039 | Max. radial load on output shaft (non-operating, constant load)  | F      | 55 N                                |      |
| P-040 | Max. radial load on output shaft (non-operating, impulsive load) | F      | 20 N                                |      |
| P-041 | Max. radial load on output shaft (operating, constant load)      | F      | 7 N                                 |      |
| P-042 | Max. radial load on output shaft (operating, impulsive load)     | F      | 7 N                                 |      |
| P-043 | Max. axial load on output shaft (non-operating, constant         | F      | 150 N                               |      |

# Technical Supply Specifications:

## CoograDrive® HighVac 10mm - Type 1



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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      | $75.03 \cdot 10^{-4} \text{ gcm}^2$ |      |
| 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 |      |

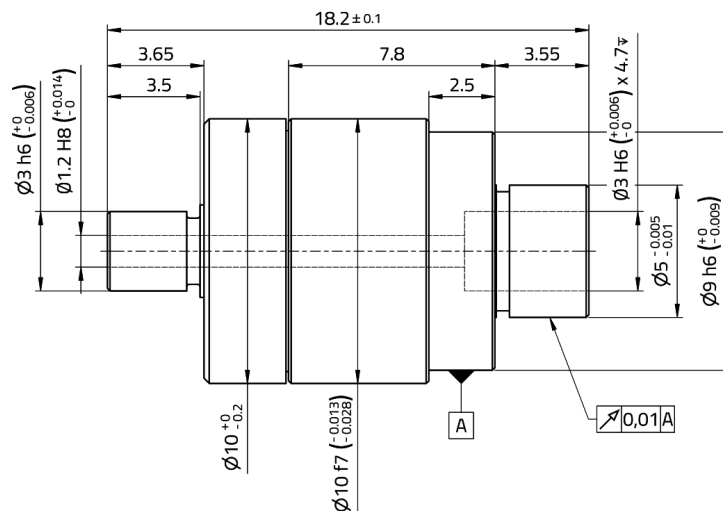
# Technical Supply Specifications: CoograDrive® HighVac 10mm - Type 1



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| Nr.   | Parameter                         | Symbol | Value         | Hint |
|-------|-----------------------------------|--------|---------------|------|
| P-910 | Material of input bearing gearbox |        | 1.4108 DIN EN |      |
| P-912 | Material of gearbox output side   |        | 1.4305 DIN EN |      |
| P-913 | Material of gearbox input side    |        | 1.4305 DIN EN |      |

## Technical drawing



Micromotion GmbH | Hoenbergstraße 14 | 65555 Limburg  
+49(0)6431-59618-25 | [sales@micromotion.de](mailto:sales@micromotion.de) | [www.micromotion-drives.com](http://www.micromotion-drives.com)