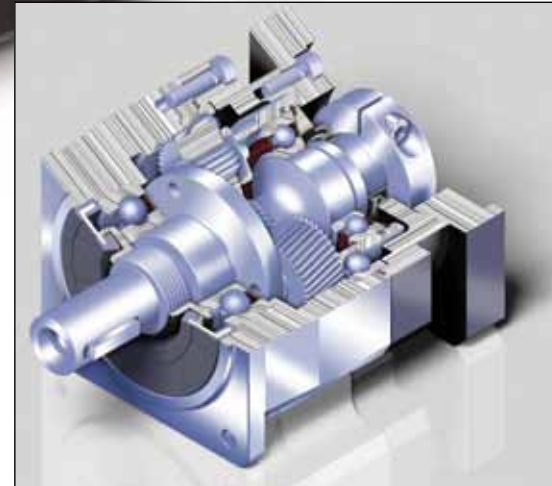
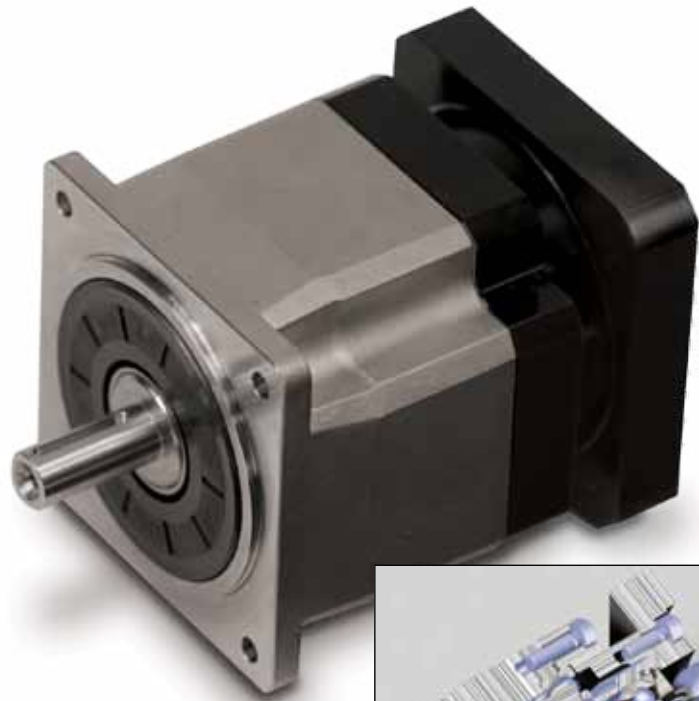


Planetary Gearboxes

FROM APEX DYNAMICS

Planetary gearboxes are designed for applications requiring reduction for inertia matching or higher torque at lower speeds. Tolomatic, in partnership with Apex Dynamics, offers high precision, high speed, single stage, true planetary gearboxes. Gear ratios of 5:1 and 10:1 are available.



FEATURES:

- **TRUE HELICAL GEAR DESIGN**
Precision helical gearing increases tooth-to-tooth contact ratio by over 33% vs spur gearing. The helix angle produces smooth and quiet operation with decreased backlash.
- Lubricated with Nyogel 792D synthetic grease and sealed to IP65 standards prevents leakage; maintenance free.
- A high setting gear performance is achieved by using HeliTopo technology that eases off the tooth profile and crowns the lead of each tooth. This optimizes the gear mesh alignment and overlap to achieve maximum tooth surface contact.

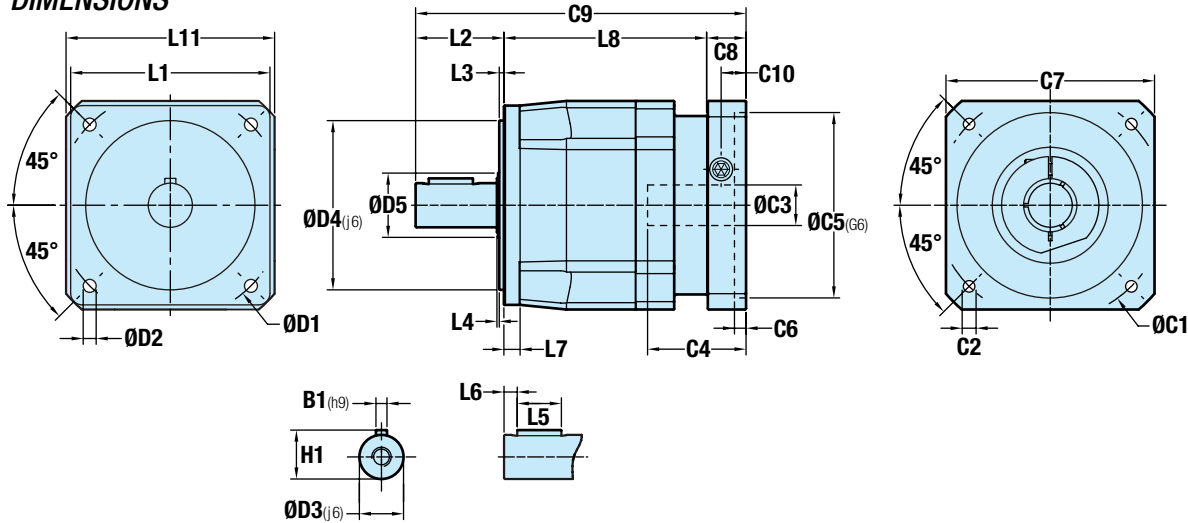
SPECIFICATIONS:

| Order Code | | | GHV205 & GHS205 | | GHV210 & GHS210 | | GHV305 & GHS305 | | GHV310 & GHS310 | |
|--------------------------------|-------------------------------------|--------------------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|------|
| Frame Size [Apex Model] | | | 23 [AN023] | | 23 [AN023] | | 34 [AN034B] | | 34 [AN034B] | |
| Ratio | | | 5:1 | | 10:1 | | 5:1 | | 10:1 | |
| Nominal Output Torque | lb.in. | Nm | 531 | 60 | 354 | 40 | 1416 | 160 | 885 | 100 |
| Maximum Output Torque | lb.in. | Nm | 1593 | 180 | 1062 | 120 | 4248 | 480 | 2655 | 300 |
| Nominal Input Speed | RPM | | 5,000 | | | | 4,000 | | | |
| Maximum Input Speed | RPM | | 10,000 | | | | 8,000 | | | |
| Backlash | arc min. | | ≤5 | | | | | | | |
| Torsional Rigidity | lb.in./arc min. | Nm/arc min. | 23.0 | 2.6 | 23.0 | 2.6 | 84.1 | 9.5 | 84.1 | 9.5 |
| Service Life | hr. | | 20,000 | | | | | | | |
| Efficiency | % | | ≥97 | | | | | | | |
| Weight | lb. | kg | 2.67 | 1.21 | 2.67 | 1.21 | 7.52 | 3.41 | 7.52 | 3.41 |
| Operating Temperature | °F | | +14 to +194 | | +14 to +194 | | +14 to +194 | | +14 to +194 | |
| | °C | | -10 to +90 | | -10 to +90 | | -10 to +90 | | -10 to +90 | |
| Lubrication | synthetic gear grease (NYOGEL 792D) | | | | | | | | | |
| Gearbox Protection | IP65 | | | | | | | | | |
| Mounting Position | all directions | | | | | | | | | |
| Mass Moments of Inertia | lb.·in ² | kg·cm ² | 0.044 | 0.130 | 0.044 | 0.130 | 0.161 | 0.470 | 0.150 | 0.44 |

Electric Linear Motion Products

Planetary Gearbox

DIMENSIONS



| Dimension | GHV2 GHS2 [AN023] | | GHV3 GHS3 [AN034B] | |
|-----------|-------------------------|-----------|--------------------------|-----------|
| | D1 | in. 2.625 | 3.875 | in. 66.68 |
| D2 | in. 0.22 | 0.22 | mm 5.6 | 5.6 |
| D3 | in. 0.50 | 0.50 | (j6) mm 12.7 | 12.7 |
| D4 | in. 1.500 | 2.875 | (j6) mm 38.10 | 73.03 |
| D5 | in. 0.87 | 1.18 | mm 22.0 | 30.0 |
| L1 | in. 2.36 | 3.39 | mm 60.0 | 86.0 |
| L2 | in. 1.25 | 1.25 | mm 31.8 | 31.8 |
| L3 | in. 0.08 | 0.08 | mm 2.0 | 2.0 |

| Dimension | GHV2 GHS2 [AN023] | | GHV3 GHS3 [AN034B] | |
|-----------|-------------------------|----------|--------------------------|--------|
| | L4 | in. 0.04 | 0.04 | mm 1.0 |
| L5 | in. 0.75 | 0.75 | mm 19.05 | 19.05 |
| L6 | in. 0.15 | 0.22 | mm 3.8 | 5.6 |
| L7 | in. 0.24 | 0.28 | mm 6.0 | 7.1 |
| L8 | in. 2.54 | 3.44 | mm 64.5 | 87.5 |
| L11 | in. 2.36 | 3.54 | mm 60.0 | 90.0 |
| B1 | in. 0.125 | 0.125 | (h9) mm 3.18 | 3.18 |
| H1 | in. 0.556 | 0.556 | mm 14.125 | 14.125 |

Tolomatic motor specific dimensions.

| Dimension | GHV2 [AN023] | | GHV3 [AN034B] | |
|-----------|-----------------|-----------|------------------|-----------|
| | C1 | in. 2.625 | 2.625 | in. 3.875 |
| C2 | in. M4 x 0.7 | M4 x 0.7 | in. M5 x 0.8 | M5 x 0.8 |
| C3 | in. 0.5 | 0.25 | in. 0.5 | 0.5* |
| C4 | in. 1.57 | 1.57 | in. 1.57 | 1.57 |
| C5 | in. 1.502 | 1.502 | in. 2.877 | 2.877 |
| C6 | in. 0.15 | 0.15 | in. 0.15 | 0.15 |
| C7 | in. 2.283 | 2.283 | in. 3.346 | 3.346 |
| C8 | in. 0.98 | 0.98 | in. 0.67 | 0.67 |
| C9 | in. 4.776 | 4.776 | in. 5.366 | 5.366 |
| C10 | in. 0.768 | 0.51 | in. 0.423 | 0.423 |

*C3 = 0.63" (16.0mm) when using Tolomatic motor MRS33

ORDERING

GH S 3 05

| PLANETARY GEARBOX | |
|-------------------|-----------------------|
| GH | for planetary gearbox |
| MOTOR | |
| V | for servo motor |
| S | for stepper motor |

| MOTOR SIZE | |
|------------|----------------------------------|
| 2 | for 23-frame motor |
| 3 | for 34-frame motor |
| RATIO | |
| 05 | for 5:1 ratio planetary gearbox |
| 10 | for 10:1 ratio planetary gearbox |

Planetary gearboxes are primarily sold as part of a complete assembly including actuator and motor. Tolomatic will install and test the completed actuator, planetary gearbox, and motor assembly before shipping.

Call Tolomatic if you wish to install a planetary gearbox on an existing actuator.

Contact Tolomatic for other ratios and motor mounting options.

⚠ Tolomatic assumes no responsibility that a planetary gearbox will fit or perform with your motor or actuator if sold separately.)



Toll-Free: **1-800-328-2174**
U.S. AND CANADA

Visit www.tolomatic.com for the most up-to-date technical information

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