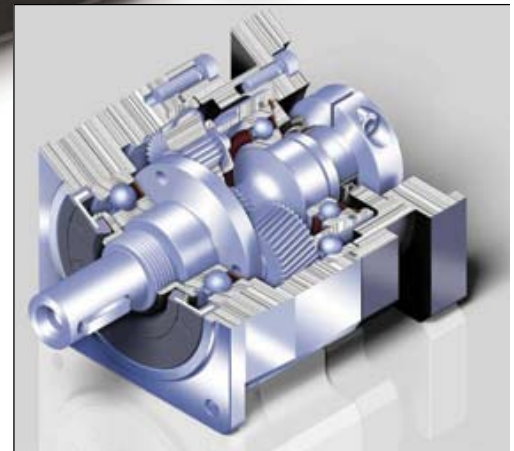
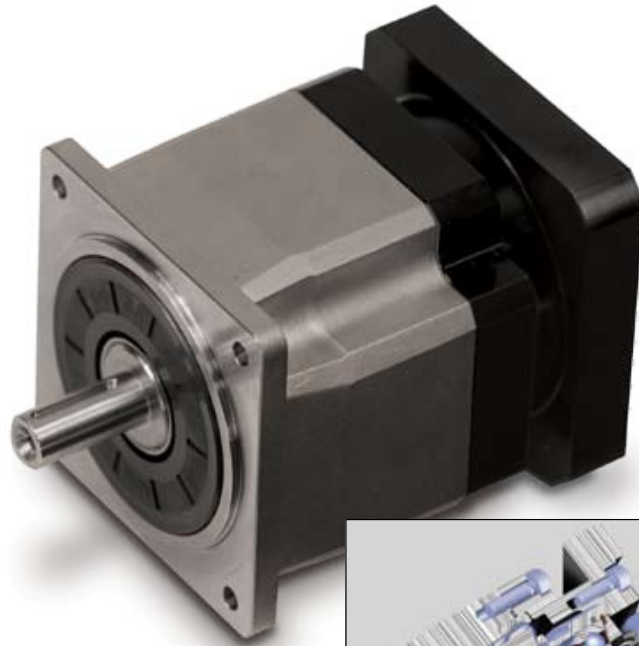


## Planetary Gearboxes

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 and compatible with our 23 and 34 frame **M|R|V** brushless servo and **M|R|S** stepper motors.



### 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	
<b>Nominal Output Torque</b>	lb.in.	Nm	531	60	354	40	1416	160	885	100
<b>Maximum Output Torque</b>	lb.in.	Nm	1593	180	1062	120	4248	480	2655	300
<b>Nominal Input Speed</b>	RPM		5,000				4,000			
<b>Maximum Input Speed</b>	RPM		10,000				8,000			
<b>Backlash</b>	arc min.		≤5							
<b>Torsional Rigidity</b>	lb.in./arc min.	Nm/arc min.	23.0	2.6	23.0	2.6	84.1	9.5	84.1	9.5
<b>Service Life</b>	hr.		20,000							
<b>Efficiency</b>	%		≥97							
<b>Weight</b>	lb.	kg	2.67	1.21	2.67	1.21	7.52	3.41	7.52	3.41
<b>Operating Temperature</b>	°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	
<b>Lubrication</b>	synthetic gear grease (NYOGEL 792D)									
<b>Gearbox Protection</b>	IP65									
<b>Mounting Position</b>	all directions									
<b>Mass Moments of Inertia</b>	lb. • in <sup>2</sup>	kg • cm <sup>2</sup>	0.044	0.130	0.044	0.130	0.161	0.470	0.150	0.44

Sold & Serviced By:

Toll Free Phone (877) SERV098

Toll Free Fax (877) SERV099

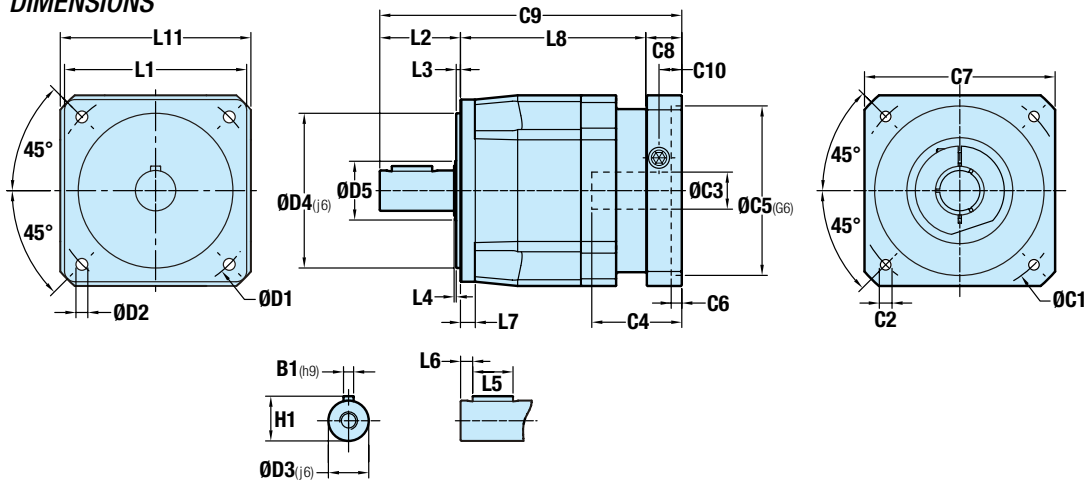
[www.electromate.com](http://www.electromate.com)

[sales@electromate.com](mailto:sales@electromate.com)

# Electric Linear Motion Products

## Planetary Gearbox

### DIMENSIONS



Dimension		GHV2	GHV3
		GHS2 [AN023]	GHS3 [AN034B]
D1	in.	2.625	3.875
	mm	66.68	98.43
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	GHV3
		GHS2 [AN023]	GHS3 [AN034B]
L4	in.	0.04	0.04
	mm	1.0	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	GHS2	GHV3	GHS3
		[AN023]	[AN023]	[AN034B]	[AN034B]
C1	in.	2.625	2.625	3.875	3.875
	mm	66.68	66.68	98.43	98.43
C2	in.	M4 x 0.7	M4 x 0.7	M5 x 0.8	M5 x 0.8
	mm				
C3	in.	0.5	0.25	0.5	0.5*
	mm	12.7	6.35	12.7	12.7*
C4	in.	1.57	1.57	1.57	1.57
	mm	40	40	40	40
C5	in.	1.502	1.502	2.877	2.877
	(G6) mm	38.15	38.15	73.08	73.08
C6	in.	0.15	0.15	0.15	0.15
	mm	3.7	3.7	3.7	3.7
C7	in.	2.283	2.283	3.346	3.346
	mm	58	58	85	85
C8	in.	0.98	0.98	0.67	0.67
	mm	25	25	17	17
C9	in.	4.776	4.776	5.366	5.366
	mm	121.3	121.3	136.3	136.3
C10	in.	0.768	0.51	0.423	0.423
	mm	19.5	13	10.75	10.75

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

### ORDERING

GH S 3 05

<b>PLANETARY GEARBOX</b>
GH for planetary gearbox
<b>MOTOR</b>
V for servo motor
S for stepper motor

<b>MOTOR SIZE</b>
2 for 23-frame motor
3 for 34-frame motor
<b>RATIO</b>
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.

Sold & Serviced By:

**ELECTROMATE**

Toll Free Phone (877) SERV098

Toll Free Fax (877) SERV099

www.electromate.com

sales@electromate.com