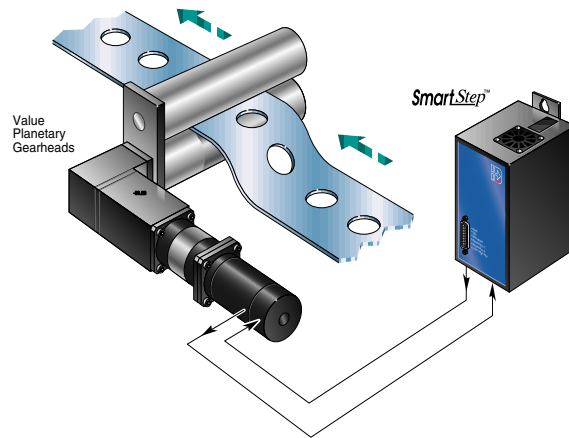


Mechanical advantage is the key to efficient rotary feed applications. IDC offers a wide variety of drive and controller packages with gearmotor options to solve these control needs.



Planetary Gearmotors

Overview _____ I-2

Gearmotor

Selection Checklist _____ I-4

Performance Planetary

Overview _____ I-5

How to Order _____ I-6

In-Line Performance Planetary

Size 17 _____ I-7

Size 23 _____ I-8

Size 34 _____ I-9

Size 42 _____ I-10

Right Angle Performance Planetary

Size 17 _____ I-11

Size 23 _____ I-12

Size 34 _____ I-13

Size 42 _____ I-14

Value Planetary

Overview _____ I-15

How to Order _____ I-16

In-Line Value Planetary

Size 23 _____ I-17

Size 34 _____ I-18

Size 42 _____ I-19

Right Angle Value Planetary

Size 23 _____ I-20

Size 34 _____ I-21

Size 42 _____ I-22



Overview

Why Use IDC Gearmotors?

- To reduce inertia reflected from the load (by ratio²)—allows higher acceleration
- To multiply motor torque—more torque from the same frame size device
- To reduce output speed
- To improve accuracy due to increased torsional stiffness
- To increase radial and axial shaft load capacity
- For convenience—quick delivery
- Eliminates mounting problems between motor and gearhead



Value Planetary or Performance Planetary

	Value Planetary	Performance Planetary
Price Adder to Motor (inline models)	\$350-950	\$720-1870
Available Motors	Brushless Servo Stepper	Brushless Servo Stepper
Torque Capacity	120-1800 in-lb, cont. (1.5x - 4x spur torque)	250-3800 in-lb, cont (5x - 10x spur torque)
Available Ratios	3:1-100:1	3:1-700:1
Backlash	7-18 arc-min	3-15 arc-min
Efficiency	85-90%	85-90%
Life	High	Very High
Noise Level	Low	Low
Self Re-Lubricating Gears	Yes	Yes
See Pages	I15-I22	I4-I14



Value Planetary Gearhead

Performance Planetary Gearhead

Common Features

- Rugged, reliable design—improves your machine's reliability.
- High input speed (5,000-6,500 rpm max) and high torque output.
- Balanced pinion clamp—no vibration at high speeds.
- Single-piece, precision grade component gears—contribute to reliability, high accuracy and efficiency, low backlash and quiet operation.
- High strength materials—long life, excellent backlash integrity
- Very low break away torque—easier to achieve responsive control.
- Black anodized 6061-T6 aluminum rear and front mounting brackets—rugged and light weight.
- IP65 (NEMA 4) washdown rated. Leak and drip proof in any orientation.
- Wide operating temperature.
- Extreme pressure rated 100% synthetic grease lubrication.
- High shaft loading capacity up to 2100 lbs.
- Quiet operation.

The IDC Advantage

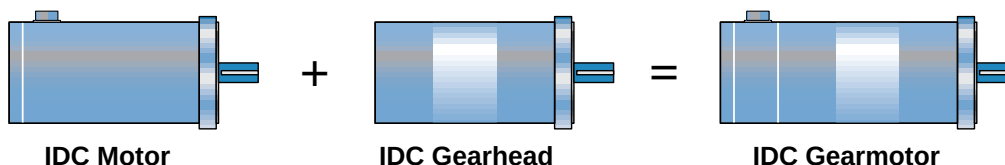
- Conservative performance ratings – high reliability.
- 2 year warranty.
- Unequalled precision and proven field reliability.
- Wide selection of gear ratios up to 700:1.
- A true planetary design—higher torque capacity than spur/planetary hybrid designs, outstanding torsional stiffness.
- Packaged solution—motor and gearhead are pre-assembled.





Gearmotor Selection Checklist

How to Determine Your IDC Gearmotor Performance



Determining the Torque/Speed curve of an IDC gearmotor, is a relatively straight-forward 9 step procedure. In this example, an IDC B32 motor operated with a 230 VAC system input voltage, and an IDC G34PI 4:1 gearhead are assumed.

- ❑ 1. Pick an IDC motor that you think can solve your application's motion requirements. Decide on the system's operating voltage: typically either 115 VAC, or 230 VAC.

- ❑ 2. Pick a gearhead that is appropriate for your application's torque requirement by multiplying motor torque by the gear ratio to determine gearhead output torque. Note the selected gearmotor's efficiency (this is found in a table at the bottom of the gearmotor page in Section I).

- ❑ 3. Find four critical points of the motor's Torque/Speed Curve and record the motor torque and speed of each critical point (see Figure 1). For brushless motors these four points are:

1. Intermittent (or Peak) Stall Torque (point of zero speed)
2. Knee in the Intermittent (or Peak) Torque/Speed curve
3. No Load Speed (point of zero torque)
4. Continuous Stall Torque (point of zero speed)

- ❑ 4. Use the following equations to determine the gearmotor's output torque and speed for each of the critical points:

$$T_{GM} = T_M \times GR \times \text{eff}_{gb}$$

$$w_{GM} = w_M / GR$$

(In the above formulas T_{GM} is gearmotor output torque, T_M is motor torque, GR is the gear ratio, eff_{gb} is the efficiency of the gearhead, w_{GM} is the output speed of the gearmotor, and w_M is the motor speed)

- ❑ 5. Graph the four points on a x-y graph. (See Figure 2)
- ❑ 6. Draw a line that connects points (1) and (2)
- ❑ 7. Draw a line that connects points (2) and (3)
- ❑ 8. Draw a line that connects point (4) and the line between 2 and 3
- ❑ 9. Check that the gearmotor's Torque/Speed curve meets your application's performance requirements. If it doesn't, select another gearhead or motor and repeat the steps above.

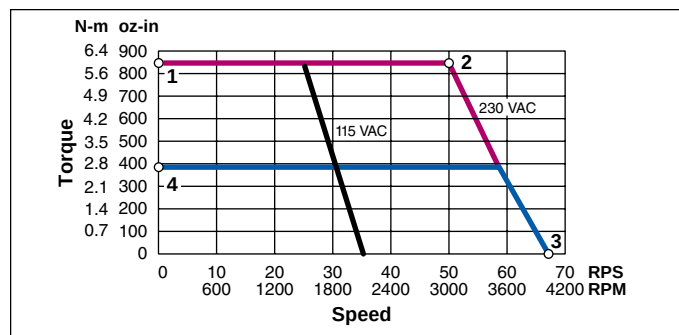


Figure 1. IDC B32 Motor's Torque/Speed Curve

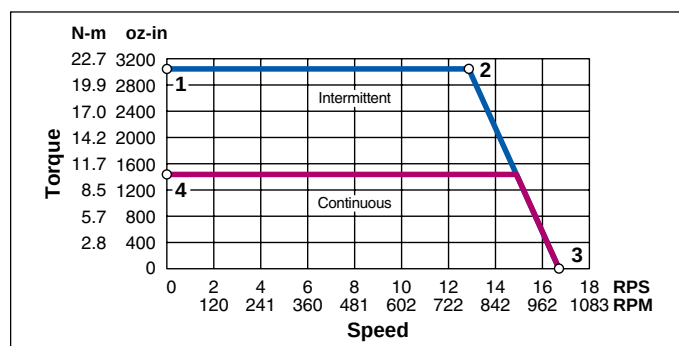


Figure 2. G34PI-B32-0040 Gearmotor Torque/Speed Curve

Overview

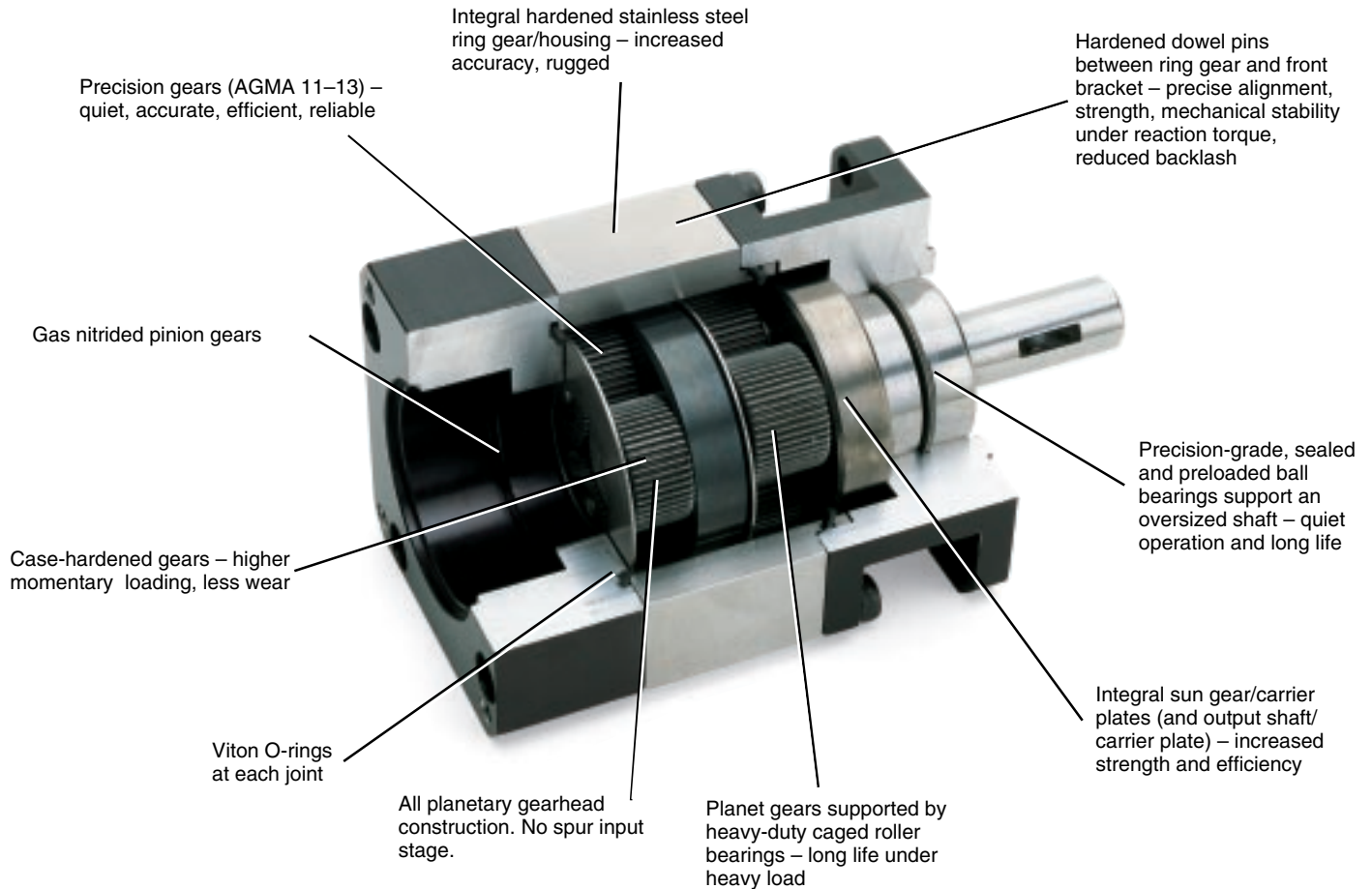
Performance
Planetary Gearmotor
Specifications

Gearmotors

This section features IDC's range of in-line and right-angle precision planetary gearmotors. Our gearmotors use 1, 2 or 3 stages of planetary gear clusters in a rugged housing. They provide exceptional positioning

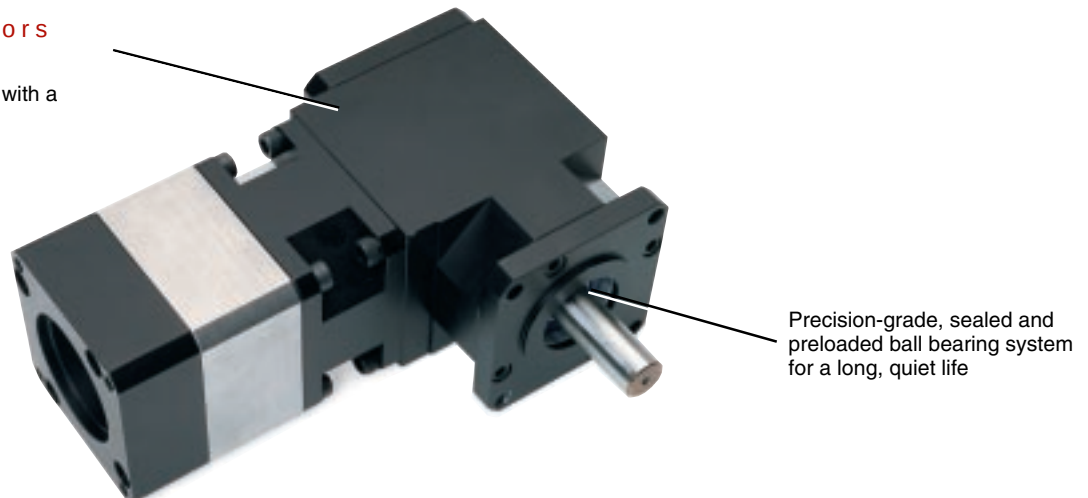
performance and reliability in automated industrial, scientific and commercial applications.

Performance Planetary Gearmotors



Right-Angle Gearmotors

Ideal for applications with a space constraint



Gearheads



How To Order

Use the specifications on pages I-7 through I-14 to choose the right gearmotor for your application.

Example

G23PI-B23-0030

Description

Size 23, Performance Planetary
Inline, 3:1, mounted to B23 brushless
servo motor

1 Size	2 Type	3 IDC Motor		4 Gear Ratio	5 Options
G17	PI Performance	Step Motors	Servo Motors	0030 3:1	LB Low Backlash
G23	Planetary In-Line	S12	BN21	0040 4:1	
G34	PC Performance	S21	BN23	0055 5.5:1	V Vertical
G42	Planetary Right-Angle	S22	BN31	0070 7:1	
		S23	BN32	0100 10:1	
		S32	B12	0160 16:1	
		S33	B23	0220 22:1	See the motor's
		P21	B23H	0280 28:1	How to Order page
		P22	B32	0400 40:1	for additional
		P31	B33	0490 49:1	options
		P32	B40	0550 55:1	(G-1 or H-1).
		P33	B41	0700 70:1	
		P41	B42	1000 100:1	
		P42		1600 160:1	
		K42		2800 280:1	
				4000 400:1	
				7000 700:1	

-V Vertical Option

The gearhead is filled with additional lubricant to prevent slumping to the bottom when operated in a vertical orientation. Only necessary when motor is mounted below gearhead.

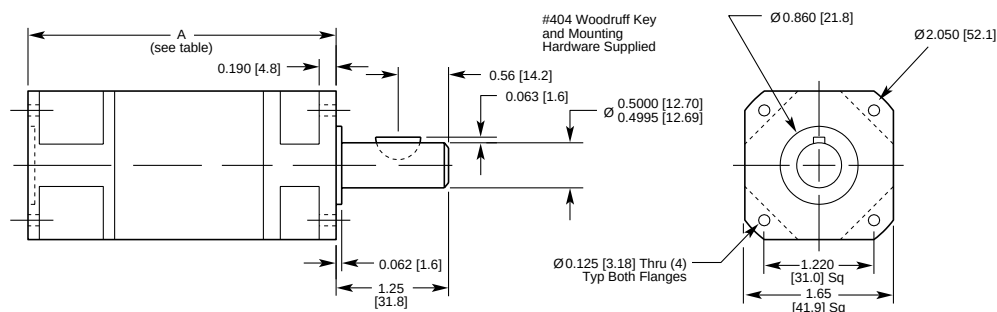
Two Year Warranty

IDC warrants its Value Planetary gearheads to be free of defects in material and workmanship for a period of two years when operated within specified operating conditions.

Note: All value planetary gearmotors come with the IDC motor and gearhead pre-assembled.



Dimensions in [mm]



Max Input Speed	6,500 rpm
Operating Temp	-65°F to 350°F [-54° to 177°C]
Pinion Inertia	1.32 x 10 ⁻⁴ oz-in-sec ² [9.32 x 10 ⁻⁷ kg-m ²] for NEMA 17 motor shaft. Clamp on pinion inertia varies with motor shaft diameter. Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft.
Shaft Loading	
Axial max	400 lb [1,779 N]
Radial max	400 lb [1,779 N], 0.75" from gearhead face
Construction	
Flanges	6061-T6 aluminum, black anodized. NEMA standard front flange
Housing/Ring Gear	Hardened stainless (17-4 PH) steel
Gears	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubrication	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

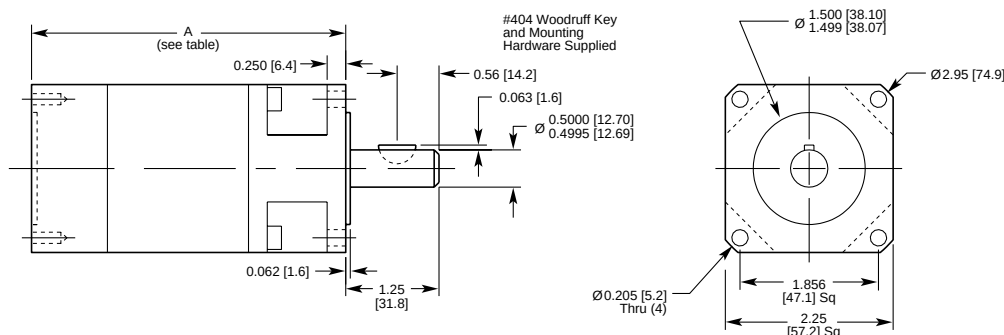
Specifications by Ratio

Gear Ratio	Max Rated Cont Output Torque in-lb [N-m]	Max Rated Momentary Output Torque in-lb [N-m]	Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
3	130 [14.7]	200 [22.6]	1.71 x 10 ⁻⁴ [1.21 x 10 ⁻⁶]	90	6/3	2.63 [66.8]	1.0 [0.45]
4	140 [15.7]	210 [23.5]	1.23 x 10 ⁻⁴ [8.69 x 10 ⁻⁷]	90	6/3	2.63 [66.8]	1.0 [0.45]
5.5	155 [17.4]	240 [26.9]	7.67 x 10 ⁻⁵ [5.42 x 10 ⁻⁷]	90	6/3	2.63 [66.8]	1.0 [0.45]
7	160 [17.9]	250 [28.0]	5.13 x 10 ⁻⁵ [3.62 x 10 ⁻⁷]	90	6/3	2.63 [66.8]	1.0 [0.45]
10	130 [14.7]	200 [22.6]	2.72 x 10 ⁻⁵ [1.92 x 10 ⁻⁷]	90	6/3	2.63 [66.8]	1.0 [0.45]
16	610 [68.3]	960 [107.5]	1.17 x 10 ⁻⁴ [8.26 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
22	750 [84.0]	1,175 [131.6]	1.13 x 10 ⁻⁴ [7.98 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
28	875 [98.0]	1,350 [151.2]	1.11 x 10 ⁻⁴ [7.84 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
40	775 [86.8]	1,200 [134.4]	2.45 x 10 ⁻⁵ [1.73 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
49	575 [65.0]	900 [101.7]	4.48 x 10 ⁻⁵ [3.16 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
55	665 [75.1]	1040 [117.5]	2.38 x 10 ⁻⁵ [1.68 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
70	600 [67.2]	925 [103.6]	2.35 x 10 ⁻⁵ [1.66 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
100	400 [44.8]	625 [70.0]	2.33 x 10 ⁻⁵ [1.65 x 10 ⁻⁷]	85	10/5	3.16 [80.3]	1.6 [0.73]
160	900 [100.8]	1150 [128.8]	1.03 x 10 ⁻⁵ [7.27 x 10 ⁻⁸]	78	14/7	3.77 [95.8]	2.2 [1]
280	1300 [145.6]	1680 [188.2]	9.44 x 10 ⁻⁶ [6.67 x 10 ⁻⁸]	78	14/7	3.77 [95.8]	2.2 [1]
400	1160 [129.9]	1500 [168.0]	9.21 x 10 ⁻⁶ [6.50 x 10 ⁻⁸]	78	14/7	3.77 [95.8]	2.2 [1]
700	900 [100.8]	1150 [128.8]	9.20 x 10 ⁻⁶ [6.50 x 10 ⁻⁸]	78	14/7	3.77 [95.8]	2.2 [1]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed

6,500 rpm

Operating Temp

-65° to 350°F [-54° to 177°C]

Pinion Inertia

6.81×10^{-4} oz-in-sec² [5.19×10^{-6} kg-m²] for NEMA 23 motor shaft. Clamp on pinion inertia varies with motor shaft diameter. Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft.

Shaft Loading

Axial max

400 lb [1,779 N]

Radial max

400 lb [1,779 N], 0.75" from gearhead face

Construction

Flanges

6061-T6 aluminum, black anodized. NEMA standard front flange

Housing/Ring Gear

Hardened stainless (17-4 PH) steel

Gears

True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction

Output Shaft

Heat treated stainless steel, precision, sealed, preloaded ball bearings

Lubrication

Extreme pressure rated, 100% synthetic grease

Sealing

Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

Specifications by Ratio

Gear Ratio	Max Rated Cont Output Torque in-lb [N-m]	Max Rated Momentary Output Torque in-lb [N-m]	Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
3	225 [25.4]	350 [39.5]	5.30×10^{-4} [3.74×10^{-6}]	90	6/3	2.76 [70.1]	1.75 [0.79]
4	250 [28.0]	365 [40.9]	3.50×10^{-4} [2.47×10^{-6}]	90	6/3	2.76 [70.1]	1.75 [0.79]
5.5	270 [30.2]	425 [47.6]	2.12×10^{-4} [1.50×10^{-6}]	90	6/3	2.76 [70.1]	1.75 [0.79]
7	280 [31.4]	430 [48.2]	1.40×10^{-4} [9.89×10^{-7}]	90	6/3	2.76 [70.1]	1.75 [0.79]
10	225 [25.4]	350 [39.5]	7.35×10^{-5} [5.19×10^{-7}]	90	6/3	2.76 [70.1]	1.75 [0.79]
16	1050 [117.6]	1665 [186.5]	4.12×10^{-5} [2.91×10^{-7}]	85	10/5	3.59 [91.2]	2.75 [1.25]
22	1215 [136.1]	1915 [214.5]	3.99×10^{-4} [2.82×10^{-6}]	85	10/5	3.59 [91.2]	2.75 [1.25]
28	1500 [168.0]	2350 [263.2]	3.94×10^{-4} [2.78×10^{-6}]	85	10/5	3.59 [91.2]	2.75 [1.25]
40	1340 [150.1]	2070 [231.8]	7.89×10^{-4} [5.57×10^{-6}]	85	10/5	3.59 [91.2]	2.75 [1.25]
49	1000 [113]	1550 [175.1]	1.48×10^{-4} [1.04×10^{-6}]	85	10/5	3.59 [91.2]	2.75 [1.25]
55	1150 [130]	1800 [203.4]	7.70×10^{-5} [5.43×10^{-7}]	85	10/5	3.59 [91.2]	2.75 [1.25]
70	1040 [116.5]	1600 [179.2]	7.62×10^{-5} [5.38×10^{-7}]	85	10/5	3.59 [91.2]	2.75 [1.25]
100	700 [79.0]	1080 [122.0]	7.55×10^{-5} [5.33×10^{-7}]	85	10/5	3.59 [91.2]	2.75 [1.25]
160	1500 [168.0]	2150 [240.8]	3.84×10^{-5} [2.71×10^{-7}]	78	15/10	4.38 [111.3]	3.8 [1.73]
280	2200 [246.4]	2850 [319.2]	2.91×10^{-5} [2.05×10^{-7}]	78	15/10	4.38 [111.3]	3.8 [1.73]
400	2000 [224.0]	2600 [291.2]	2.85×10^{-5} [2.01×10^{-7}]	78	15/10	4.38 [111.3]	3.8 [1.73]
700	1550 [173.6]	2000 [224.0]	2.85×10^{-5} [2.01×10^{-7}]	78	15/10	4.38 [111.3]	3.8 [1.73]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.

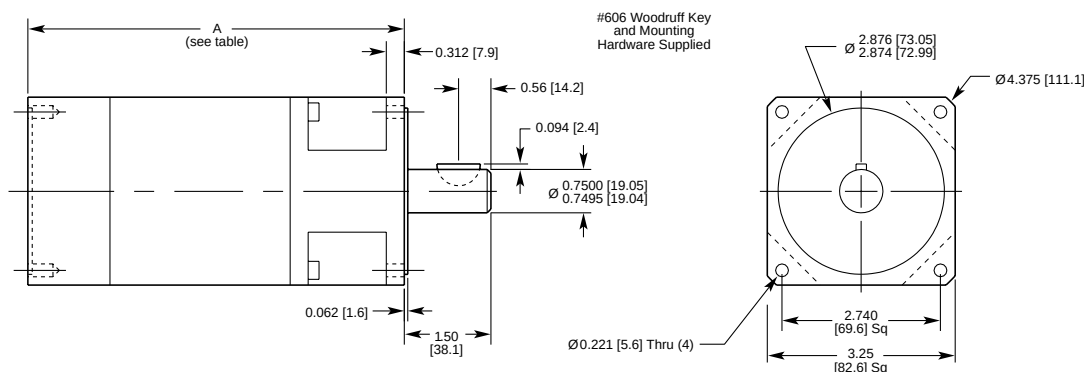


Specifications

Size 34 In-line
Performance
Planetary

Gearmotors

Dimensions in [mm]



Max Input Speed

6,500 rpm

Operating Temp

-65° to 350°F [-54° to 177°C]

Pinion Inertia

3.20×10^{-4} oz-in-sec² [2.26×10^{-6} kg-m²] for NEMA 34 motor shaft. Pinion inertia varies with motor shaft diameter. Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft.

Shaft Loading

Axial max

875 lb [3,892 N]

Radial max

875 lb [3,892 N], 0.75" from gearhead face

Construction

Flanges

6061-T6 aluminum, black anodized. NEMA standard front flange

Housing/Ring Gear

Hardened stainless (17-4 PH) steel

Gears

True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction

Output Shaft

Heat treated stainless steel, precision, sealed, preloaded ball bearings

Lubrication

Extreme pressure rated, 100% synthetic grease

Sealing

Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

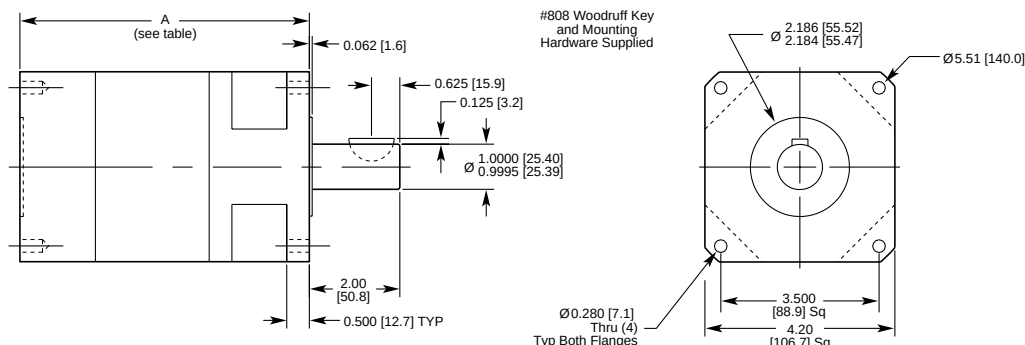
Specifications by Ratio

Gear Ratio	Max Rated Cont Output Torque in-lb [N-m]	Max Rated Momentary Output Torque in-lb [N-m]	Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
3	525 [59.3]	800 [90.4]	4.32×10^{-3} [3.05×10^{-5}]	90	6.3	4.19 [106.4]	7.0 [3.2]
4	575 [64.6]	850 [95.2]	2.67×10^{-3} [1.89×10^{-5}]	90	6.3	4.19 [106.4]	7.0 [3.2]
5.5	625 [70.0]	975 [109.2]	1.49×10^{-3} [1.05×10^{-5}]	90	6.3	4.19 [106.4]	7.0 [3.2]
7	650 [72.8]	1000 [112.0]	9.51×10^{-4} [6.72×10^{-6}]	90	6.3	4.19 [106.4]	7.0 [3.2]
10	525 [59.3]	800 [90.4]	4.80×10^{-4} [3.39×10^{-6}]	90	6.3	4.19 [106.4]	7.0 [3.2]
16	2450 [274.4]	3850 [431.2]	2.27×10^{-3} [1.60×10^{-5}]	85	10/5	5.31 [134.9]	8.0 [3.6]
22	2850 [319.2]	4470 [500.6]	2.17×10^{-3} [1.53×10^{-5}]	85	10/5	5.31 [134.9]	8.0 [3.6]
28	3400 [380.8]	5325 [596.4]	2.13×10^{-3} [1.50×10^{-5}]	85	10/5	5.31 [134.9]	8.0 [3.6]
40	3100 [347.2]	4800 [537.6]	3.87×10^{-4} [2.73×10^{-6}]	85	10/5	5.31 [134.9]	8.0 [3.6]
49	2300 [260]	3600 [406.7]	7.55×10^{-4} [5.33×10^{-6}]	85	10/5	5.31 [134.9]	8.0 [3.6]
55	2675 [302]	4175 [471.7]	3.87×10^{-4} [2.73×10^{-6}]	85	10/5	5.31 [134.9]	8.1 [3.7]
70	2400 [268.8]	3700 [414.4]	3.81×10^{-4} [2.69×10^{-6}]	85	10/5	5.31 [134.9]	8.1 [3.7]
100	1600 [180.8]	2500 [282.5]	3.76×10^{-4} [2.66×10^{-6}]	85	10/5	5.31 [134.9]	8.1 [3.7]
160	3600 [403.2]	4600 [515.2]	3.09×10^{-4} [2.18×10^{-6}]	78	14/7	6.54 [166.1]	9.0 [4.1]
280	5000 [560.0]	6500 [728.0]	2.88×10^{-4} [2.03×10^{-6}]	78	14/7	6.54 [166.1]	9.0 [4.1]
400	4600 [515.2]	5950 [666.4]	2.83×10^{-4} [2.00×10^{-6}]	78	14/7	6.54 [166.1]	9.0 [4.1]
700	3600 [403.2]	4600 [519.7]	2.83×10^{-4} [2.00×10^{-6}]	78	14/7	6.54 [166.1]	9.0 [4.1]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed

6,500 rpm

Operating Temp

-65° to 350°F [-54° to 177°C]

Pinion Inertia

1.37×10^{-3} oz-in-sec² [9.32×10^{-6} kg-m²] for NEMA 42 motor shaft. Pinion inertia varies with motor shaft diameter. Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft.

Shaft Loading

Axial max

1,260 lb [5,605 N]

Radial max

1,260 lb [5,605 N], 0.75" from gearhead face

Construction

Flanges

6061-T6 aluminum, black anodized. NEMA standard front flange

Housing/Ring Gear

Hardened stainless (17-4 PH) steel

Gears

True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction

Output Shaft

Heat treated stainless steel, precision, sealed, preloaded ball bearings

Lubrication

Extreme pressure rated, 100% synthetic grease

Sealing

Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

Specifications by Ratio

Gear Ratio	Max Rated		Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
	Cont Output Torque in-lb [N-m]	Momentary Output Torque in-lb [N-m]					
3	850 [96]	1300 [146.9]	1.42×10^{-2} [1.0×10^{-4}]	90	6/3	4.73 [120.1]	11.5 [5.2]
4	930 [104.2]	1375 [154.0]	8.46×10^{-3} [5.97×10^{-5}]	90	6/3	4.73 [120.1]	11.5 [5.2]
5.5	1010 [113.1]	1575 [176.4]	4.60×10^{-3} [3.25×10^{-5}]	90	6/3	4.73 [120.1]	11.5 [5.2]
7	1050 [117.6]	1615 [180.9]	2.87×10^{-3} [2.03×10^{-5}]	90	6/3	4.73 [120.1]	11.5 [5.2]
10	850 [96]	1300 [146.9]	1.42×10^{-3} [1.00×10^{-5}]	90	6/3	4.73 [120.1]	11.5 [5.2]
16	3950 [442.4]	6210 [695.5]	8.55×10^{-3} [6.04×10^{-5}]	85	10/5	6.34 [161]	18 [8.2]
22	4300 [481.6]	6450 [722.4]	8.23×10^{-3} [5.81×10^{-5}]	85	10/5	6.34 [161]	18 [8.2]
28	5500 [616.0]	8200 [918.4]	8.11×10^{-3} [5.73×10^{-5}]	85	10/5	6.34 [161]	18 [8.2]
40	5000 [560.0]	7750 [868.0]	1.43×10^{-3} [1.01×10^{-5}]	85	10/5	6.34 [161]	18 [8.2]
49	3710 [419.2]	5810 [656.4]	2.74×10^{-3} [1.9×10^{-5}]	85	10/5	6.34 [161]	18 [8.2]
55	4320 [488.1]	6740 [761.5]	1.37×10^{-3} [9.67×10^{-6}]	85	10/5	6.34 [161]	18 [8.2]
70	3875 [434.0]	5975 [699.2]	1.36×10^{-3} [9.60×10^{-6}]	85	10/5	6.34 [161]	18 [8.2]
100	2575 [290.9]	4035 [455.9]	1.34×10^{-3} [9.45×10^{-6}]	85	10/5	6.34 [161]	18 [8.2]
160	5950 [672.2]	7650 [864.3]	1.04×10^{-3} [7.33×10^{-6}]	78	14/7	7.94 [201.7]	18.5 [8.4]
280	8250 [932.1]	10,100 [1141.1]	9.68×10^{-4} [6.83×10^{-6}]	78	14/7	7.94 [201.7]	18.5 [8.4]
400	7500 [840.0]	9700 [1086.4]	9.52×10^{-4} [6.72×10^{-6}]	78	14/7	7.94 [201.7]	18.5 [8.4]
700	5800 [649.6]	7500 [840.0]	9.51×10^{-4} [6.72×10^{-6}]	78	14/7	7.94 [201.7]	18.5 [8.4]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.

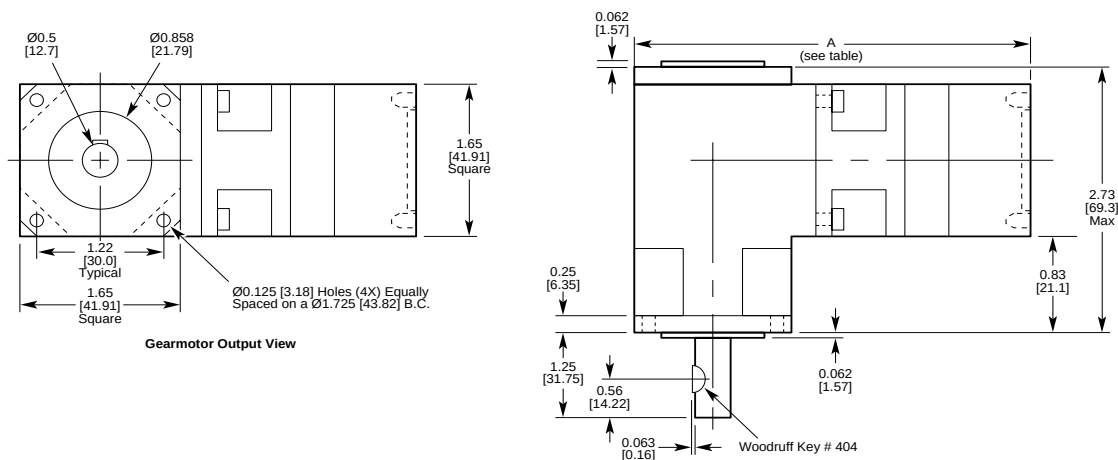


Specifications

Size 17 Right Angle
Compact Performance
Planetary

Gearmotors

Dimensions in [mm]



Max Input Speed

5,000 rpm

Operating Temp

-65° to 250°F [-54° to 121°C]

Shaft Loading

Axial max

57 lb [254 N]

Radial max

57 lb [254 N], 0.75" from gearhead face

Construction

Flanges

6061-T6 aluminum, black anodized. NEMA standard front flange

Housing/Ring Gear

Hardened stainless (17-4 PH) steel

Planetary Gears

True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction

Bevel Gears

High quality spiral bevel gears, heat treated and case hardened

Output Shaft

Heat treated stainless steel, precision, sealed, preloaded ball bearings

Lubrication

Extreme pressure rated, 100% synthetic grease

Sealing

Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

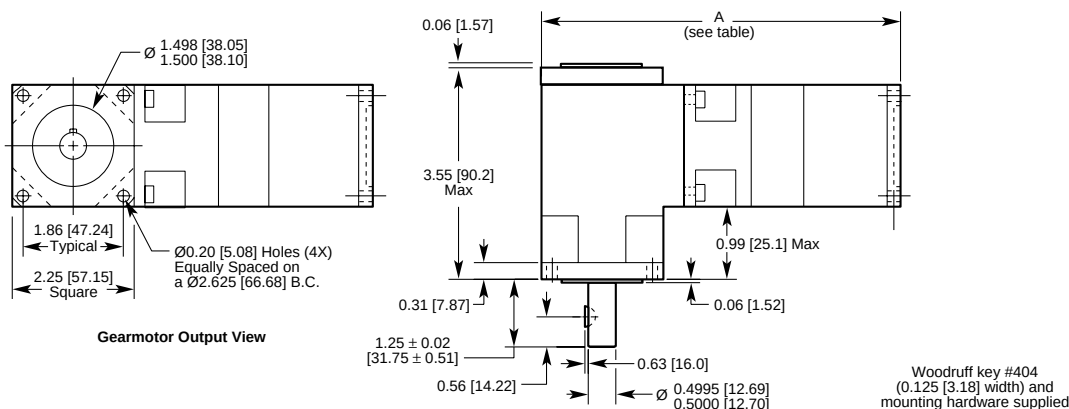
Specifications by Ratio

Gear Ratio	Max Rated Cont Output Torque in-lb [N-m]	Max Rated Momentary Output Torque in-lb [N-m]	Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
3	130 [14.7]	169 [19.1]	4.92 x 10 ⁻⁴ [3.47 x 10 ⁻⁶]	85	10/7	4.97 [126.2]	2.66 [1.2]
4	140 [15.8]	182 [20.6]	3.04 x 10 ⁻⁴ [2.14 x 10 ⁻⁶]	85	10/7	4.97 [126.2]	2.66 [1.2]
5.5	155 [17.5]	202 [22.8]	1.72 x 10 ⁻⁴ [1.22 x 10 ⁻⁶]	85	10/7	4.97 [126.2]	2.66 [1.2]
7	160 [18.1]	208 [23.5]	1.10 x 10 ⁻⁴ [7.76 x 10 ⁻⁶]	85	10/7	4.97 [126.2]	2.66 [1.2]
10	130 [14.7]	169 [19.1]	5.61 x 10 ⁻⁵ [3.96 x 10 ⁻⁷]	85	10/7	4.97 [126.2]	2.66 [1.2]
16	450 [50.8]	585 [66.1]	1.28 x 10 ⁻⁴ [9.05 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
22	475 [53.7]	618 [69.8]	1.19 x 10 ⁻⁴ [8.40 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
28	520 [58.7]	531 [60]	1.15 x 10 ⁻⁴ [8.09 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
40	520 [58.7]	531 [60]	2.63 x 10 ⁻⁵ [1.86 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
49	385 [43.5]	501 [56.6]	4.60 x 10 ⁻⁵ [3.25 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
55	440 [49.7]	531 [60]	2.48 x 10 ⁻⁵ [1.75 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
70	384 [43.4]	499 [56.4]	2.41 x 10 ⁻⁵ [1.70 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]
100	155 [17.5]	202 [22.8]	2.36 x 10 ⁻⁵ [1.66 x 10 ⁻⁷]	80	14/9	5.51 [140.0]	3.26 [1.5]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed

5,000 rpm

Operating Temp

-65° to 250°F [-54° to 121°C]

Shaft Loading

Axial max

300 lb [1,334 N]

Radial max

300 lb [1,334 N], 0.75" from gearhead face

Construction

Flanges

6061-T6 aluminum, black anodized. NEMA standard front flange

Housing/Ring Gear

Hardened stainless (17-4 PH) steel

Planetary Gears

True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction

Bevel Gears

High quality spirial bevel gears, heat treated and case hardened

Output Shaft

Heat treated stainless steel, precision, sealed, preloaded ball bearings

Lubrication

Extreme pressure rated, 100% synthetic grease

Sealing

Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

Specifications by Ratio

Gear Ratio	Max Rated		Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
	Cont Output Torque in-lb [N-m]	Momentary Output Torque in-lb [N-m]					
3	225 [25.4]	293 [33.1]	1.69×10^{-3} [1.19×10^{-5}]	85	10/7	6.49 [164.8]	4.34 [2.0]
4	250 [28.2]	325 [36.7]	1.02×10^{-3} [7.17×10^{-5}]	85	10/7	6.49 [164.8]	4.34 [2.0]
5.5	270 [30.5]	351 [39.7]	5.64×10^{-4} [3.98×10^{-6}]	85	10/7	6.49 [164.8]	4.34 [2.0]
7	280 [31.6]	364 [41.1]	3.58×10^{-4} [2.52×10^{-6}]	85	10/7	6.49 [164.8]	4.34 [2.0]
10	225 [25.4]	293 [33.1]	1.80×10^{-4} [1.27×10^{-6}]	85	10/7	6.49 [164.8]	4.34 [2.0]
16	1050 [118.6]	1161 [131.2]	4.54×10^{-4} [3.20×10^{-6}]	80	14/9	7.32 [185.9]	5.3 [2.4]
22	1100 [124.3]	1161 [131.2]	2.81×10^{-4} [1.98×10^{-6}]	80	14/9	7.32 [185.9]	5.3 [2.4]
28	1120 [126.5]	1161 [131.2]	2.58×10^{-4} [1.82×10^{-6}]	80	14/9	7.32 [185.9]	5.3 [2.4]
40	1150 [129.9]	1161 [131.2]	8.56×10^{-4} [6.05×10^{-7}]	80	14/9	7.32 [185.9]	5.3 [2.4]
49	875 [98.9]	1161 [131.2]	1.53×10^{-4} [1.08×10^{-6}]	80	14/9	7.32 [185.9]	5.3 [2.4]
55	975 [110.2]	1161 [131.2]	8.05×10^{-5} [5.69×10^{-7}]	80	14/9	7.32 [185.9]	5.3 [2.4]
70	900 [101.7]	1161 [131.2]	7.84×10^{-5} [5.53×10^{-7}]	80	14/9	7.32 [185.9]	5.3 [2.4]
100	375 [42.4]	1161 [131.2]	7.66×10^{-5} [5.41×10^{-7}]	80	14/9	7.32 [185.9]	5.3 [2.4]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.

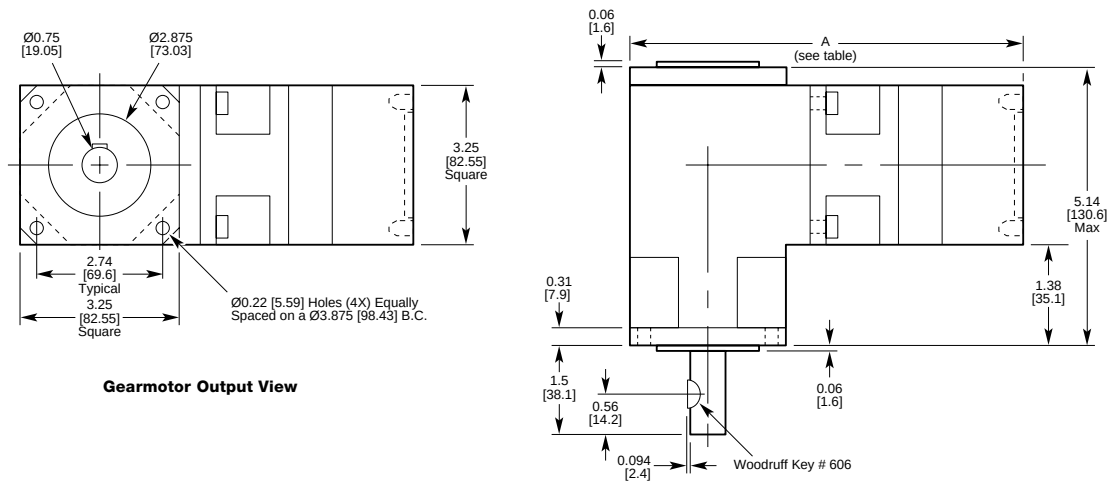


Specifications

Size 34 Right Angle
Compact Performance
Planetary

Gearmotors

Dimensions in [mm]



Max Input Speed	5,000 rpm
Operating Temp	-65° to 250°F [-54° to 121°C]
Shaft Loading	
Axial max	500 lb [2,224 N]
Radial max	500 lb [2,224 N], 0.75" from gearhead face
Construction	
Flanges	6061-T6 aluminum, black anodized. NEMA standard front flange
Housing/Ring Gear	Hardened stainless (17-4 PH) steel
Planetary Gears	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Bevel Gears	High quality spiral bevel gears, heat treated and case hardened
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubrication	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

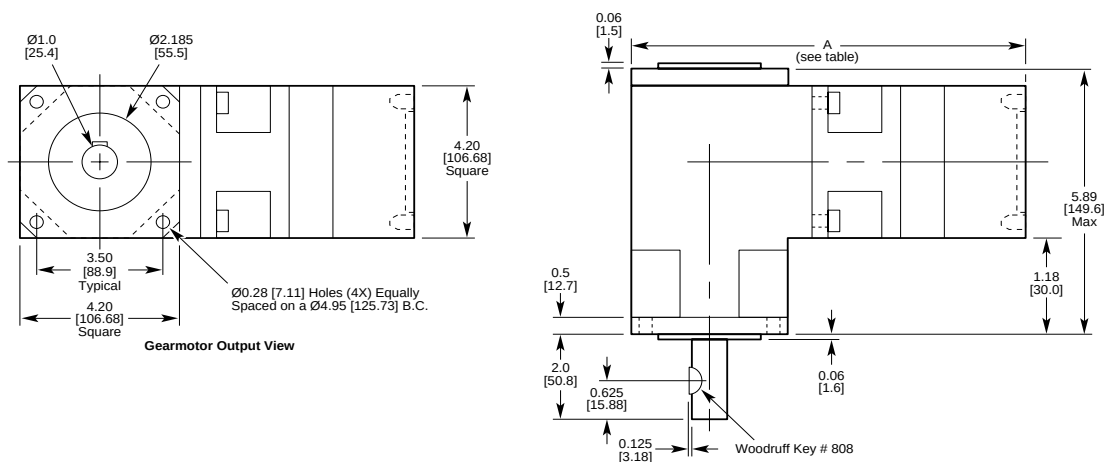
Specifications by Ratio

Gear Ratio	Max Rated Cont Output Torque in-lb [N-m]	Max Rated Momentary Output Torque in-lb [N-m]	Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
3	525 [59.3]	683 [77.2]	1.09 x 10 ⁻² [7.66 x 10 ⁻⁵]	85	10/7	9.16 [232.7]	14.5 [6.6]
4	575 [65]	748 [84.5]	6.35 x 10 ⁻³ [4.48 x 10 ⁻⁵]	85	10/7	9.16 [232.7]	14.5 [6.6]
5.5	625 [70.6]	813 [91.9]	3.44 x 10 ⁻³ [2.43 x 10 ⁻⁵]	85	10/7	9.16 [232.7]	14.5 [6.6]
7	652 [73.7]	845 [95.5]	2.15 x 10 ⁻³ [1.52 x 10 ⁻⁵]	85	10/7	9.16 [232.7]	14.5 [6.6]
10	525 [59.3]	683 [77.2]	1.07 x 10 ⁻³ [7.54 x 10 ⁻⁶]	85	10/7	9.16 [232.7]	14.5 [6.6]
16	2450 [276.8]	3185 [359.8]	2.51 x 10 ⁻³ [1.77 x 10 ⁻⁵]	80	14/9	10.29 [261.4]	15.5 [7.0]
22	2850 [322]	3705 [418.6]	1.37 x 10 ⁻³ [9.67 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]
28	3400 [384]	4420 [499.4]	9.18 x 10 ⁻⁴ [6.48 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]
40	3100 [350]	4030 [455.3]	4.41 x 10 ⁻⁴ [3.12 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]
49	2300 [259.9]	2990 [337.8]	7.80 x 10 ⁻⁴ [5.51 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]
55	2675 [302.2]	3478 [392.9]	4.07 x 10 ⁻⁴ [2.87 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]
70	2400 [271.2]	3120 [352.5]	3.93 x 10 ⁻⁴ [2.77 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]
100	1600 [180.8]	2080 [235]	3.81 x 10 ⁻⁴ [2.69 x 10 ⁻⁶]	80	14/9	10.29 [261.4]	15.5 [7.0]

When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed

5,000 rpm

Operating Temp

-65° to 250°F [-54° to 121°C]

Shaft Loading

Axial max

700 lb [3,114 N]

Radial max

700 lb [3,114 N], 0.75" from gearhead face

Construction

Flanges

6061-T6 aluminum, black anodized. NEMA standard front flange

Housing/Ring Gear

Hardened stainless (17-4 PH) steel

Planetary Gears

True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction

Bevel Gears

High quality spirial bevel gears, heat treated and case hardened

Output Shaft

Heat treated stainless steel, precision, sealed, preloaded ball bearings

Lubrication

Extreme pressure rated, 100% synthetic grease

Sealing

Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

Specifications by Ratio

Gear Ratio	Max Rated		Inertia reflected to motor pinion oz-in-s ² [kg-m ²]	Efficiency min (%)	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lb [kg]
	Cont Output Torque in-lb [N-m]	Momentary Output Torque in-lb [N-m]					
3	850 [96]	1105 [124.8]	2.22 x 10 ⁻² [1.57 x 10 ⁻⁴]	85	10/7	11.39 [289.3]	30.2 [13.7]
4	930 [105.1]	1209 [136.6]	1.3 x 10 ⁻² [9.14 x 10 ⁻⁵]	85	10/7	11.39 [289.3]	30.2 [13.7]
5.5	1010 [114.1]	1313 [148.3]	6.98 x 10 ⁻³ [4.93 x 10 ⁻⁵]	85	10/7	11.39 [289.3]	30.2 [13.7]
7	1050 [118.6]	1365 [154.2]	4.34 x 10 ⁻³ [3.06 x 10 ⁻⁵]	85	10/7	11.39 [289.3]	30.2 [13.7]
10	850 [96]	1105 [124.8]	2.14 x 10 ⁻³ [1.51 x 10 ⁻⁵]	85	10/7	11.39 [289.3]	30.2 [13.7]
16	3950 [446.3]	5135 [580.2]	8.84 x 10 ⁻³ [6.24 x 10 ⁻⁵]	80	14/9	13.02 [330.7]	32.2 [14.6]
22	4300 [485.8]	5590 [631.6]	4.43 x 10 ⁻³ [3.13 x 10 ⁻⁵]	80	14/9	13.02 [330.7]	32.2 [14.6]
28	5500 [621.4]	6555 [740.6]	2.95 x 10 ⁻³ [2.08 x 10 ⁻⁵]	80	14/9	13.02 [330.7]	32.2 [14.6]
40	5000 [564.9]	6500 [734.4]	1.47 x 10 ⁻³ [1.04 x 10 ⁻⁵]	80	14/9	13.02 [330.7]	32.2 [14.6]
49	3710 [419.2]	4823 [544.9]	2.77 x 10 ⁻³ [1.96 x 10 ⁻⁵]	80	14/9	13.02 [330.7]	32.2 [14.6]
55	4320 [488.1]	5616 [634.5]	1.40 x 10 ⁻³ [9.88 x 10 ⁻⁶]	80	14/9	13.02 [330.7]	32.2 [14.6]
70	3875 [437.8]	5038 [569.2]	1.37 x 10 ⁻³ [9.67 x 10 ⁻⁶]	80	14/9	13.02 [330.7]	32.2 [14.6]
100	2575 [290.9]	3348 [378.3]	1.35 x 10 ⁻³ [9.51 x 10 ⁻⁶]	80	14/9	13.02 [330.7]	32.2 [14.6]

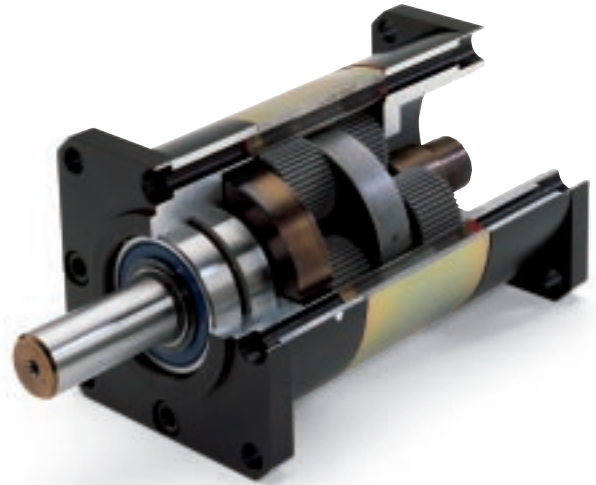
When used within specified ratings your IDC Performance Planetary gearhead is warranted for 2 years. See page I-6 for ordering and warranty information.

Overview

Value Planetary Advantage

“It used to be that the choice was *spur* or *planetary*, and the tradeoff was torque for dollars. Now, the same planetary gears are available at the cost of a spur!”

- True Planetary Gearbox
- Inline and right-angle models
- Lower cost than most spur models



Features

- High efficiency (85-90%)
- Low backlash (7–18 arc-minutes)
- High accuracy (AGMA Q10-13)
- High strength – 410% safety factor on continuous torque. Better durability than spur gears.
- Low noise
- Sealed to IP65
- Long life
- 2 year warranty



Feature Comparison Value Planetary and Performance Planetary Gearheads

	Value Planetary	Performance Planetary
Price Adder to Motor (inline models)	\$350-950	\$720-1870
Available Motors	Brushless Servo Stepper	Brushless Servo Stepper
Torque Capacity	120-1800 in-lb, cont. (1.5x - 4x spur torque)	250-3800 in-lb, cont (5x - 10x spur torque)
Available Ratios	3:1-100:1	3:1-700:1
Backlash	7-18 arc-min	3-15 arc-min
Efficiency	85-90%	85-90%
Life	High	Very High
Noise Level	Low	Low
Self Re-Lubricating Gears	Yes	Yes



How To Order

Use the specifications on pages I-17 through I-22 to choose the right gearmotor for your application.

Example
G23VI-B23-0030

Description
Size 23, Value Planetary Inline, 3:1,
with B23 brushless servo motor

1	2	3	4	5
Size	Type	Motor	Gear Ratio	Options
G23 G34 G42	VI Value Inline VR Value Right-Angle	Step Motors S21 S22 S23 S32 S33 P21 P22 P31 P32 P33 P41 P42 K42	Servo Motors BN21 BN23 BN31 BN32 B12 B23 B23H B32 B33 B40 B41 B42	0030 3:1 0040 4:1 0055 5.5:1 0070 7:1 0100 10:1 0160 16:1 0220 22:1 0280 28:1 0400 40:1 0490 49:1 0550 55:1 0700 70:1 1000 100:1 LB Low Backlash V Vertical See the motor's How to Order page for additional options (G-1 or H-1).

-V Vertical Option

The gearhead is filled with additional lubricant to prevent slumping to the bottom when operated in a vertical orientation. Only necessary when motor is mounted below gearhead.

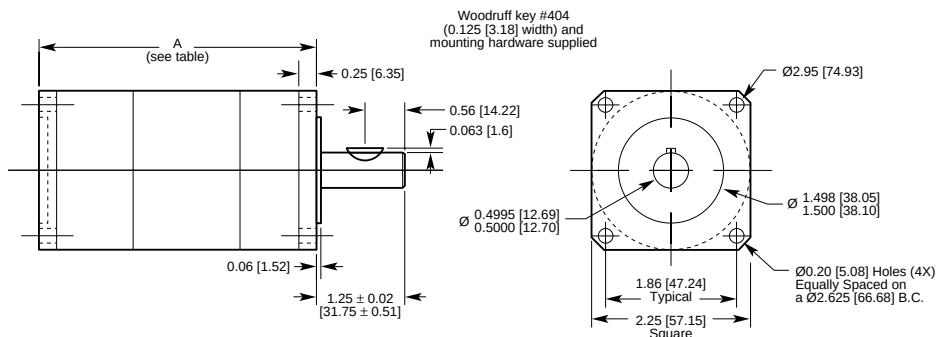
Two Year Warranty

IDC warrants its Value Planetary gearheads to be free of defects in material and workmanship for a period of two years when operated within specified operating conditions.

Note: All value planetary gearmotors come with the IDC motor and gearhead pre-assembled.



Dimensions in [mm]



Max Input Speed	5,000 rpm
Operating Temperature	-65° to 250°F [-54° to 121°C]
Pinion Inertia	6.81 x 10 ⁻⁴ oz-in-sec ² [4.81 x 10 ⁻⁶ kg-m ²] Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft. Inertia value for NEMA 23 shaft size only. Pinion inertia varies with motor shaft diameter.
Shaft Loading	
Max Axial	400 lb [1780 N]
Max Radial	400 lb [1780 N], 0.75" from gearhead mounting face
Construction	
Flanges	6061-T6 aluminum, black anodized, NEMA standard mounting flange
Housing/Ring Gear	Medium carbon steel, with gold corrosion-resistant coating
Gear	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubricant	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

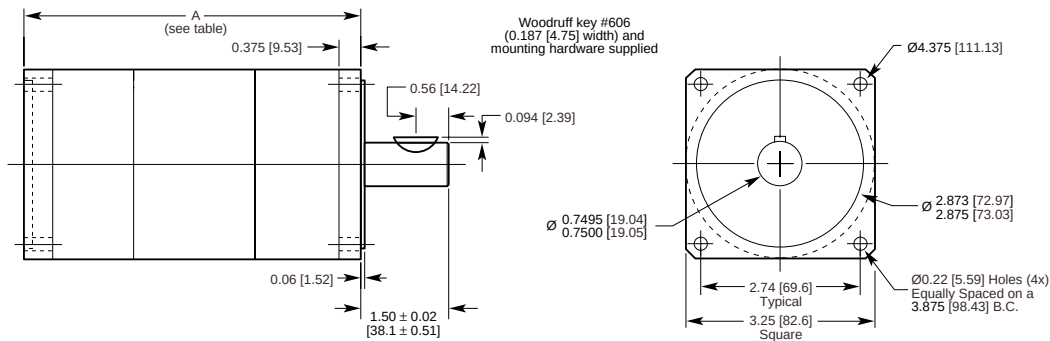
Specifications By Ratio

Part Number	Ratio	Max Rated		Inertia (refl. to motor) oz-in-sec ² [kg-m ²]	Efficiency min %	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lbs [Kg]
		Cont Output Torque in-lb [N-m]	Peak Output Torque in-lb [N-m]					
G23VI-x-0030	3	120 [13.4]	250 [28.0]	5.30x10 ⁻⁴ [3.74x10 ⁻⁶]	90	10 / 7	3.11 [78.9]	2 [0.9]
G23VI-x-0040	4	120 [13.4]	250 [28.0]	3.50x10 ⁻⁴ [2.47x10 ⁻⁶]	90	10 / 7	3.11 [78.9]	2 [0.9]
G23VI-x-0055	5.5	120 [13.4]	250 [28.0]	2.12x10 ⁻⁴ [1.50x10 ⁻⁶]	90	10 / 7	3.11 [78.9]	2 [0.9]
G23VI-x-0070	7	120 [13.4]	250 [28.0]	1.40x10 ⁻⁴ [9.89x10 ⁻⁷]	90	10 / 7	3.11 [78.9]	2 [0.9]
G23VI-x-0100	10	120 [13.4]	250 [28.0]	7.35x10 ⁻⁵ [5.19x10 ⁻⁷]	90	10 / 7	3.11 [78.9]	2 [0.9]
G23VI-x-0160	16	550 [61.6]	875 [98.0]	4.12x10 ⁻⁴ [2.91x10 ⁻⁶]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-0220	22	550 [61.6]	875 [98.0]	3.99x10 ⁻⁴ [2.82x10 ⁻⁶]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-0280	28	550 [61.6]	875 [98.0]	3.94x10 ⁻⁴ [2.78x10 ⁻⁶]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-0400	40	550 [61.6]	875 [98.0]	7.89x10 ⁻⁴ [5.57x10 ⁻⁶]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-0490	49	550 [61.6]	875 [98.0]	1.48x10 ⁻⁴ [1.05x10 ⁻⁶]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-0550	55	550 [61.6]	875 [98.0]	7.70x10 ⁻⁵ [5.44x10 ⁻⁷]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-0700	70	550 [61.6]	875 [98.0]	7.62x10 ⁻⁵ [5.38x10 ⁻⁷]	85	14 / 9	4.02 [102.1]	3 [1.4]
G23VI-x-1000	100	550 [61.6]	875 [98.0]	7.55x10 ⁻⁵ [5.33x10 ⁻⁷]	85	14 / 9	4.02 [102.1]	3 [1.4]

When used within specified ratings your IDC Value Planetary gearhead is warranted for two years. See page I-16 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed	5,000 rpm
Operating Temperature	-65° to 250°F [-54° to 121°C]
Pinion Inertia	3.20 x 10 ⁻³ oz-in-sec ² [2.26 x 10 ⁻⁵ kg-m ²] Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft. Inertia value for NEMA 34 shaft size only. Pinion inertia varies with motor shaft diameter.
Shaft Loading	
Max Axial	875 lb [3900 N]
Max Radial	875 lb [3900 N], 0.75" from gearhead mounting face
Construction	
Flanges	6061-T6 aluminum, black anodized, NEMA standard mounting flange
Housing/Ring Gear	Medium carbon steel, with gold corrosion-resistant coating
Gears	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubricant	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

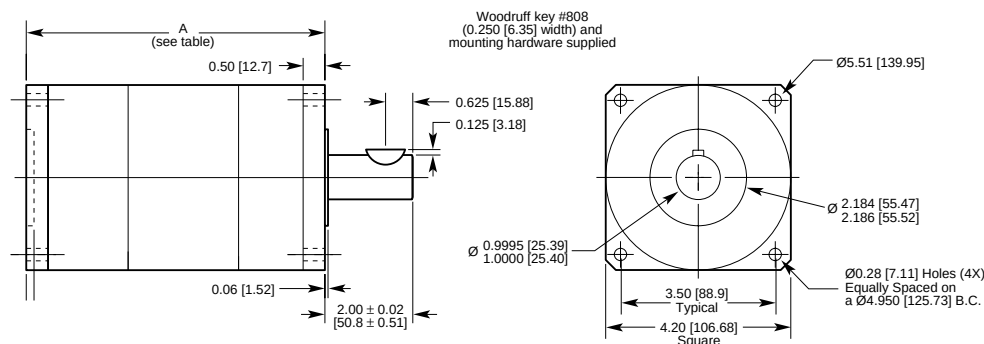
Specifications By Ratio

Part Number	Ratio	Max Rated		Inertia (refl. to motor) oz-in-sec ² [kg-m ²]	Efficiency min %	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lbs [Kg]
		Cont Output Torque in-lb [N-m]	Peak Output Torque in-lb [N-m]					
G34VI-x-0030	3	350 [39.2]	600 [67.2]	4.32x10 ⁻³ [3.05x10 ⁻⁵]	90	10 / 7	4.56 [115.8]	7 [3.2]
G34VI-x-0040	4	350 [39.2]	600 [67.2]	2.67x10 ⁻³ [1.89x10 ⁻⁵]	90	10 / 7	4.56 [115.8]	7 [3.2]
G34VI-x-0055	5.5	350 [39.2]	600 [67.2]	1.49x10 ⁻³ [1.05x10 ⁻⁵]	90	10 / 7	4.56 [115.8]	7 [3.2]
G34VI-x-0070	7	350 [39.2]	600 [67.2]	9.51x10 ⁻⁴ [6.72x10 ⁻⁶]	90	10 / 7	4.56 [115.8]	7 [3.2]
G34VI-x-0100	10	350 [39.2]	600 [67.2]	4.80x10 ⁻⁴ [3.39x10 ⁻⁶]	90	10 / 7	4.56 [115.8]	7 [3.2]
G34VI-x-0160	16	750 [84.0]	1875 [210]	2.27x10 ⁻³ [1.60x10 ⁻⁵]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-0220	22	750 [84.0]	1875 [210]	2.17x10 ⁻³ [1.53x10 ⁻⁵]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-0280	28	750 [84.0]	1875 [210]	2.13x10 ⁻³ [1.50x10 ⁻⁵]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-0400	40	750 [84.0]	1875 [210]	4.04x10 ⁻⁴ [2.85x10 ⁻⁶]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-0490	49	750 [84.0]	1875 [210]	7.55x10 ⁻⁴ [5.33x10 ⁻⁶]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-0550	55	750 [84.0]	1875 [210]	3.87x10 ⁻⁴ [2.73x10 ⁻⁶]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-0700	70	750 [84.0]	1875 [210]	3.81x10 ⁻⁴ [2.69x10 ⁻⁶]	85	14 / 9	5.82 [147.8]	8 [3.6]
G34VI-x-1000	100	750 [84.0]	1875 [210]	3.76x10 ⁻⁴ [2.66x10 ⁻⁶]	85	14 / 9	5.82 [147.8]	8 [3.6]

When used within specified ratings your IDC Value Planetary gearhead is warranted for 2 years. See page I-16 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed	5,000 rpm
Operating Temperature	-65° to 250°F [-54° to 121°C]
Pinion Inertia	1.37 x 10 ⁻³ oz-in-sec ² [9.65 x 10 ⁻⁶ kg-m ²] Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft. Inertia value for NEMA 42 shaft size only. Pinion inertia varies with motor shaft diameter.
Shaft Loading	
Max Axial	1260 lb [5600 N]
Max Radial	1260 lb [5600 N], 0.75" from gearhead mounting face
Construction	
Flanges	6061-T6 aluminum, black anodized, NEMA standard mounting flange
Housing/Ring Gear	Medium carbon steel, with gold corrosion-resistant coating
Gears	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubricant	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

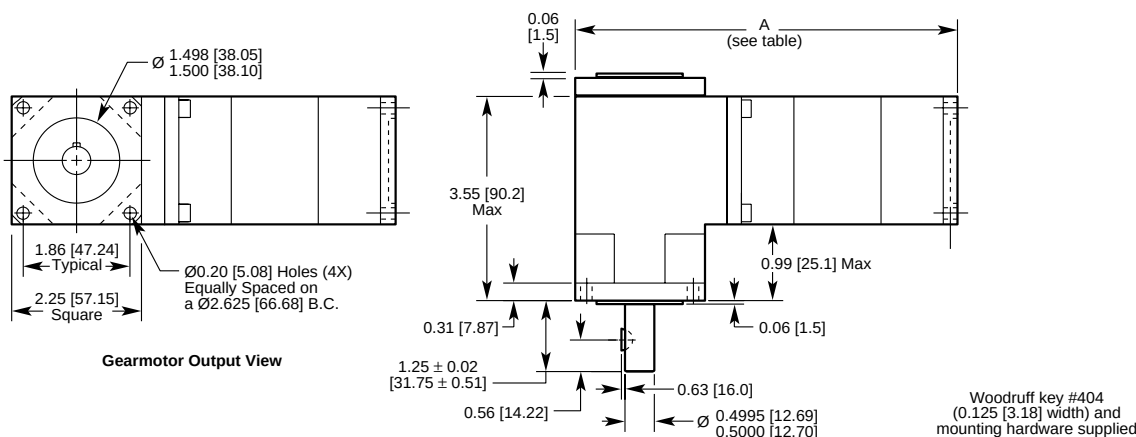
Specifications By Ratio

Part Number	Ratio	Max Rated Cont Output Torque in-lb [N-m]	Peak Output Torque in-lb [N-m]	Inertia (refl. to motor) oz-in-sec ² [kg-m ²]	Efficiency min %	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lbs [Kg]
G42VI-x-0030	3	650 [72.8]	1100 [123]	1.42x10 ⁻² [1.00x10 ⁻⁴]	90	10 / 7	5.20 [132.08]	12 [5.4]
G42VI-x-0040	4	650 [72.8]	1100 [123]	8.46x10 ⁻³ [5.97x10 ⁻⁵]	90	10 / 7	5.20 [132.08]	12 [5.4]
G42VI-x-0055	5.5	650 [72.8]	1100 [123]	4.60x10 ⁻³ [3.25x10 ⁻⁵]	90	10 / 7	5.20 [132.08]	12 [5.4]
G42VI-x-0070	7	650 [72.8]	1100 [123]	2.87x10 ⁻³ [2.03x10 ⁻⁵]	90	10 / 7	5.20 [132.08]	12 [5.4]
G42VI-x-0100	10	650 [72.8]	1100 [123]	1.42x10 ⁻³ [1.00x10 ⁻⁵]	90	10 / 7	5.20 [132.08]	12 [5.4]
G42VI-x-0160	16	1800 [202]	3225 [361]	8.55x10 ⁻³ [6.04x10 ⁻⁵]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-0220	22	1800 [202]	3225 [361]	8.23x10 ⁻³ [5.81x10 ⁻⁵]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-0280	28	1800 [202]	3225 [361]	8.11x10 ⁻³ [5.73x10 ⁻⁵]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-0400	40	1800 [202]	3225 [361]	1.43x10 ⁻⁴ [1.01x10 ⁻⁶]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-0490	49	1800 [202]	3225 [361]	2.74x10 ⁻⁴ [1.93x10 ⁻⁶]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-0550	55	1800 [202]	3225 [361]	1.37x10 ⁻⁴ [9.67x10 ⁻⁷]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-0700	70	1800 [202]	3225 [361]	1.36x10 ⁻⁴ [9.60x10 ⁻⁷]	85	14 / 9	6.80 [172.7]	18 [8.2]
G42VI-x-1000	100	1800 [202]	3225 [361]	1.34x10 ⁻⁴ [9.46x10 ⁻⁷]	85	14 / 9	6.80 [172.7]	18 [8.2]

When used within specified ratings your IDC Value Planetary gearhead is warranted for 2 years. See page I-16 for ordering and warranty information.



Dimensions in [mm]



Max Input Speed	5,000 rpm
Operating Temperature	-65° to 250°F [-54° to 121°C]
Pinion Inertia	6.81 x 10 ⁻⁴ oz-in-sec ² [4.81 x 10 ⁻⁶ kg-m ²] Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft. Inertia value for NEMA 23 shaft size only. Pinion inertia varies with motor shaft diameter.
Shaft Loading	
Max Axial	300 lb [1335 N]
Max Radial	300 lb [1335 N], 0.75" from gearhead mounting face
Construction	
Flanges	6061-T6 aluminum, black anodized, NEMA standard mounting flange
Housing/Ring Gear	Medium carbon steel, with gold corrosion-resistant coating
Gears	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubricant	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

Specifications By Ratio

Gearheads

Part Number	Ratio	Max Rated Cont Output Torque in-lb [N-m]	Peak Output Torque in-lb [N-m]	Inertia (refl. to motor) oz-in-sec ² [kg-m ²]	Efficiency min %	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lbs [Kg]
G23VR-x-0030	3	120 [13.4]	250 [28.0]	1.69x10 ⁻³ [1.19x10 ⁻³]	85	14 / 11	6.78 [172.2]	4.3 [1.9]
G23VR-x-0040	4	120 [13.4]	250 [28.0]	1.02x10 ⁻³ [7.17x10 ⁻³]	85	14 / 11	6.78 [172.2]	4.3 [1.9]
G23VR-x-0055	5.5	120 [13.4]	250 [28.0]	5.64x10 ⁻⁴ [3.98x10 ⁻⁶]	85	14 / 11	6.78 [172.2]	4.3 [1.9]
G23VR-x-0070	7	120 [13.4]	250 [28.0]	3.58x10 ⁻⁴ [2.52x10 ⁻⁶]	85	14 / 11	6.78 [172.2]	4.3 [1.9]
G23VR-x-0100	10	120 [13.4]	250 [28.0]	1.80x10 ⁻⁴ [1.27x10 ⁻⁶]	85	14 / 11	6.78 [172.2]	4.3 [1.9]
G23VR-x-0160	16	550 [61.6]	875 [98.0]	4.54x10 ⁻⁴ [3.20x10 ⁻⁶]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-0220	22	550 [61.6]	875 [98.0]	2.81x10 ⁻⁴ [1.98x10 ⁻⁶]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-0280	28	550 [61.6]	875 [98.0]	2.58x10 ⁻⁴ [1.82x10 ⁻⁶]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-0400	40	550 [61.6]	875 [98.0]	8.56x10 ⁻⁵ [6.05x10 ⁻⁷]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-0490	49	550 [61.6]	875 [98.0]	1.53x10 ⁻⁴ [1.08x10 ⁻⁶]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-0550	55	550 [61.6]	875 [98.0]	8.05x10 ⁻⁵ [5.69x10 ⁻⁷]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-0700	70	550 [61.6]	875 [98.0]	7.84x10 ⁻⁵ [5.53x10 ⁻⁷]	80	18 / 13	7.68 [195.1]	5.3 [2.4]
G23VR-x-1000	100	550 [61.6]	875 [98.0]	7.66x10 ⁻⁵ [5.41x10 ⁻⁷]	80	18 / 13	7.68 [195.1]	5.3 [2.4]

When used within specified ratings your IDC Value Planetary gearhead is warranted for 2 years. See page I-16 for ordering and warranty information.



Gearmotor Output View

Technical drawing showing the gearmotor output view and side view. The output view (left) shows a circular output shaft with a diameter of $\varnothing 2.873$ [72.97] to $\varnothing 2.875$ [73.03]. The shaft is mounted on a base with a square mounting hole of 3.25 [82.6] and a typical distance of 2.74 [69.6] between mounting holes. The side view (right) shows the gearmotor housing with a total length of A (see table). Key dimensions include a maximum height of 5.14 [130.6], a mounting flange thickness of 0.31 [7.87], a mounting flange diameter of $\varnothing 0.22$ [5.59] (4 holes, equally spaced on a $\varnothing 3.875$ [98.43] B.C.), a mounting flange offset of 1.50 ± 0.02 [38.1 $\pm$ 0.51], a mounting flange width of 1.38 [35.1] Max, a mounting flange thickness of 0.06 [1.5], a mounting flange offset of 0.094 [2.39], a mounting flange diameter of $\varnothing 0.7495$ [19.04] to $\varnothing 0.7500$ [19.05], and a mounting flange offset of 0.56 [14.22]. The drawing also indicates the use of a Woodruff key #606 (0.187 [4.75] width) and mounting hardware supplied.

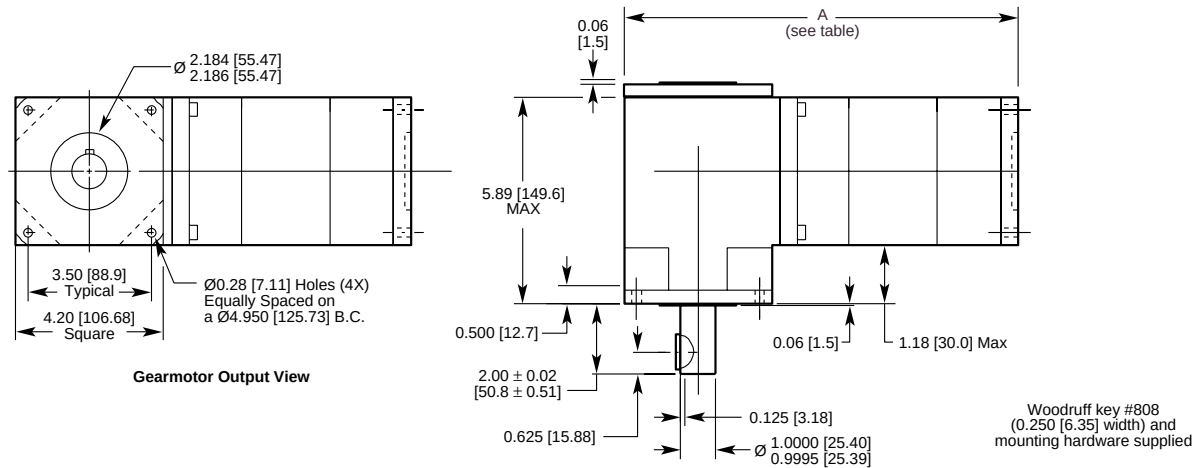
Specifications By Ratio

Part Number	Ratio	Max Rated		Inertia (refl. to motor) oz-in-sec ² [kg-m ²]	Efficiency min %	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lbs [Kg]
		Cont Output Torque in-lb [N-m]	Peak Output Torque in-lb [N-m]					
G34VR-x-0030	3	350 [39.2]	600 [67.2]	1.09x10 ⁻² [7.66x10 ⁻⁵]	85	14 / 11	9.53 [242.1]	14.3 [6.5]
G34VR-x-0040	4	350 [39.2]	600 [67.2]	6.35x10 ⁻³ [4.48x10 ⁻⁵]	85	14 / 11	9.53 [242.1]	14.3 [6.5]
G34VR-x-0055	5.5	350 [39.2]	600 [67.2]	3.44x10 ⁻³ [2.43x10 ⁻⁵]	85	14 / 11	9.53 [242.1]	14.3 [6.5]
G34VR-x-0070	7	350 [39.2]	600 [67.2]	2.15x10 ⁻³ [1.52x10 ⁻⁵]	85	14 / 11	9.53 [242.1]	14.3 [6.5]
G34VR-x-0100	10	350 [39.2]	600 [67.2]	1.07x10 ⁻³ [7.54x10 ⁻⁶]	85	14 / 11	9.53 [242.1]	14.3 [6.5]
G34VR-x-0160	16	750 [84.0]	1875 [210]	2.51x10 ⁻³ [1.77x10 ⁻⁵]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-0220	22	750 [84.0]	1875 [210]	1.37x10 ⁻³ [9.67x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-0280	28	750 [84.0]	1875 [210]	9.18x10 ⁻⁴ [6.48x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-0400	40	750 [84.0]	1875 [210]	4.41x10 ⁻⁴ [3.12x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-0490	49	750 [84.0]	1875 [210]	7.80x10 ⁻⁴ [5.51x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-0550	55	750 [84.0]	1875 [210]	4.07x10 ⁻⁴ [2.87x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-0700	70	750 [84.0]	1875 [210]	3.93x10 ⁻⁴ [2.77x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]
G34VR-x-1000	100	750 [84.0]	1875 [210]	3.81x10 ⁻⁴ [2.69x10 ⁻⁶]	80	18 / 13	10.80 [274.3]	15.3 [6.9]

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Dimensions in [mm]



Max Input Speed	5,000 rpm
Operating Temperature	-65° to 250°F [-54° to 121°C]
Pinion Inertia	1.37×10^{-3} oz-in-sec ² [9.65×10^{-6} kg-m ²] Add to inertia in table below to get the total unloaded gearhead inertia reflected to the motor shaft. Inertia value for NEMA 42 shaft size only. Pinion inertia varies with motor shaft diameter.
Shaft Loading	
Max Axial	700 lb [3120 N]
Max Radial	700 lb [3120 N], 0.75" from gearhead mounting face
Construction	
Flanges	6061-T6 aluminum, black anodized, NEMA standard mounting flange
Housing/Ring Gear	Medium carbon steel, with gold corrosion-resistant coating
Gears	True planetary, precision-grade, high-strength steel, heat treated and case hardened, one-piece construction
Output Shaft	Heat treated stainless steel, precision, sealed, preloaded ball bearings
Lubricant	Extreme pressure rated, 100% synthetic grease
Sealing	Viton O-rings at all joints, washdown rated (NEMA 4, IP65)

Specifications By Ratio

Part Number	Ratio	Max Rated		Inertia (refl. to motor) oz-in-sec ² [kg-m ²]	Efficiency min %	Backlash Max arc-min Std/-LB	Length Dim A in [mm]	Weight lbs [Kg]
		Cont Output Torque in-lb [N-m]	Peak Output Torque in-lb [N-m]					
G42VR-x-0030	3	650 [72.8]	1100 [123]	2.22×10^{-2} [1.57×10^{-4}]	85	14 / 11	11.85 [301.0]	29 [13.2]
G42VR-x-0040	4	650 [72.8]	1100 [123]	1.30×10^{-2} [9.14×10^{-5}]	85	14 / 11	11.85 [301.0]	29 [13.2]
G42VR-x-0055	5.5	650 [72.8]	1100 [123]	6.98×10^{-3} [4.93×10^{-5}]	85	14 / 11	11.85 [301.0]	29 [13.2]
G42VR-x-0070	7	650 [72.8]	1100 [123]	4.34×10^{-3} [3.06×10^{-5}]	85	14 / 11	11.85 [301.0]	29 [13.2]
G42VR-x-0100	10	650 [72.8]	1100 [123]	2.14×10^{-3} [1.51×10^{-5}]	85	14 / 11	11.85 [301.0]	29 [13.2]
G42VR-x-0160	16	1800 [202]	3225 [361]	8.84×10^{-3} [6.24×10^{-5}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-0220	22	1800 [202]	3225 [361]	4.43×10^{-3} [3.13×10^{-5}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-0280	28	1800 [202]	3225 [361]	2.95×10^{-3} [2.08×10^{-5}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-0400	40	1800 [202]	3225 [361]	1.47×10^{-3} [1.04×10^{-5}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-0490	49	1800 [202]	3225 [361]	2.77×10^{-3} [1.96×10^{-5}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-0550	55	1800 [202]	3225 [361]	1.40×10^{-3} [9.88×10^{-6}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-0700	70	1800 [202]	3225 [361]	1.37×10^{-3} [9.67×10^{-6}]	80	18 / 13	13.45 [341.6]	31 [14.1]
G42VR-x-1000	100	1800 [202]	3225 [361]	1.35×10^{-3} [9.51×10^{-6}]	80	18 / 13	13.45 [341.6]	31 [14.1]

When used within specified ratings your IDC Value Planetary gearhead is warranted for 2 years. See page I-16 for ordering and warranty information.