

# GTB SERIES

## Globoidal (Roller Gear) Servo Positioner | Table of Contents



### Features:

Destaco's **CAMCO GTB Series** are lightweight, compact, high-accuracy programmable servo positioners.

The exceptional low profile high-torque output design supports the demands of high inertia load applications.

Available in four sizes, the GTB series units are lubricated for life and can be mounted in either horizontal or vertical orientations. The GTB Series feature the largest utility through hole diameter available for its size, making it ideal for space constrained machine applications.

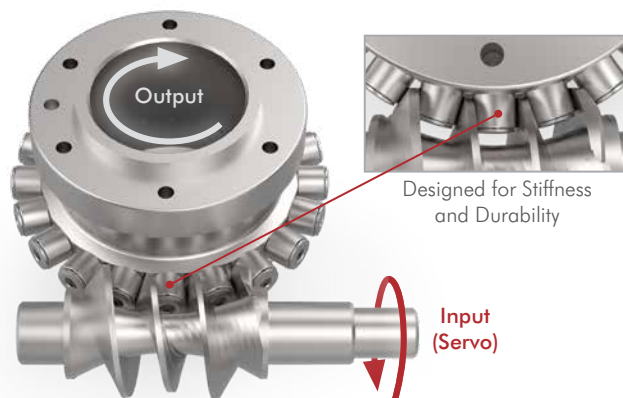
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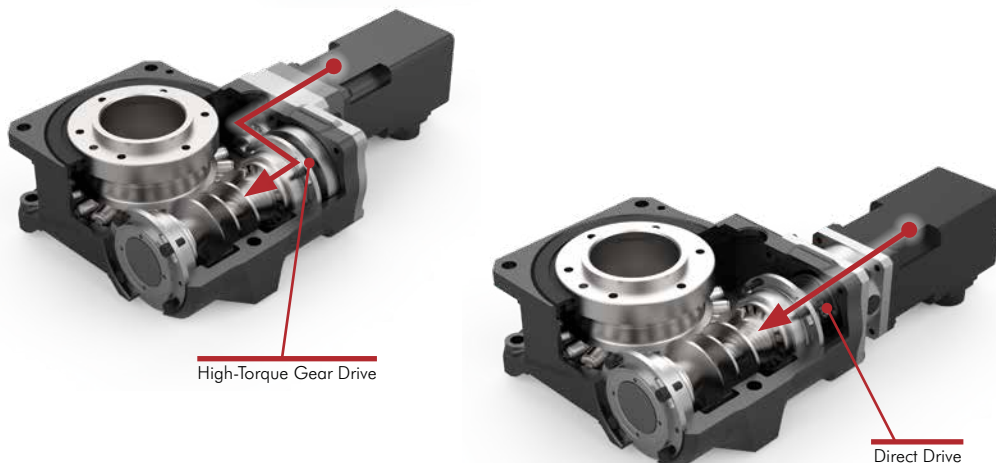
### Zero Backlash Roller Gear Cam Mechanism

Innovative roller gear design provides exceptionally smooth motion performance. The globoidal cam and output turret with integrated rollers are a preloaded system that delivers zero backlash for superior accuracy, stiffness and long term durability.



### Flexible Drive Options

Each GTB model can be ordered in two different drive options. The high-torque gear drive option is used for applications with large inertia requirements while maintaining a small motor size. The direct drive option provides zero backlash, high precision operation. Both options interface with an array of servo motor suppliers.

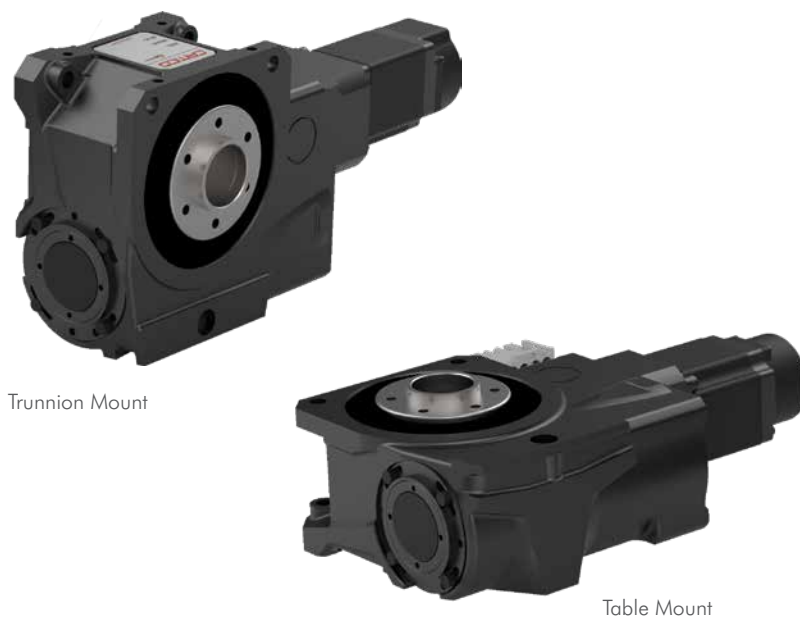


### Orientation Independent Mounting

GTB Series units can be mounted in any orientation for easy installation and machine standardization.

Install units in any configuration:

- Flat horizontal table mounting
- Vertical mounting
- Trunnion Mounting
- Inverted (upside down) mounting



# GTB SERIES

## Globoidal (Roller Gear) Servo Positioner | How To Order

### GTB Series: How To Order

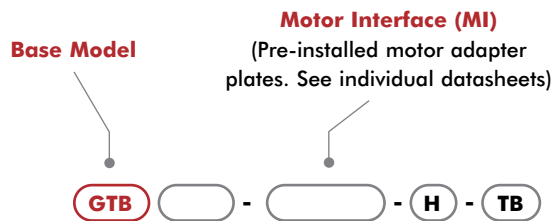
#### Globoidal (Roller Gear) Servo Positioner Base Unit

GTB Series units can be interfaced with wide variety of servo motor manufacturers. Use the MI code tables to identify the supported motors for each GTB unit. The MI code specifies the motor adapter plate that provides direct easy motor mounting to the GTB servo positioner.

The -H option for independent mounting orientation comes standard with every GTB series unit. The -T option for precision dial plate locating dowel hole and -B option for precision mounting dowel holes are also provided as standard.



GTB Series without motor installed



Size	Supported Gear Ratios
40	45:1
	15:1
63	60:1
	20:1
80	60:1
	20:1
100	60:1
	20:1

**Standard Features**

- H** Orientation independent mounting. Supports vertical, horizontal, trunnion applications
- T** Single output flange surface dowel hole for precision dial plate locating
- B** Precision placement housing dowel holes, 2 on top of unit, 2 on bottom of unit

**Easily Integrates with a Variety of Servo Motor Manufacturers**

Allen Bradley	Mitsubishi
AMK	Panasonic
Mitsubishi	Sanyo
FANUC	SEW
Keyence	Siemens
KUKA	Yaskawa

Units are available in two different gear ratios based on Direct or Geared motor coupling. Contact Sales to determine what motors are supported for precision direct drive applications and geared drive high torque configurations.



**Gear Drive:**  
High Inertia Applications  
45:1 GTB40  
60:1 GTB63, GTB80, GTB100



**Direct Drive:**  
Zero Backlash Precision Applications  
15:1 GTB40  
20:1 GTB63, GTB80, GTB100

### GTB Series: How to Order configured System (Allen Bradley only)

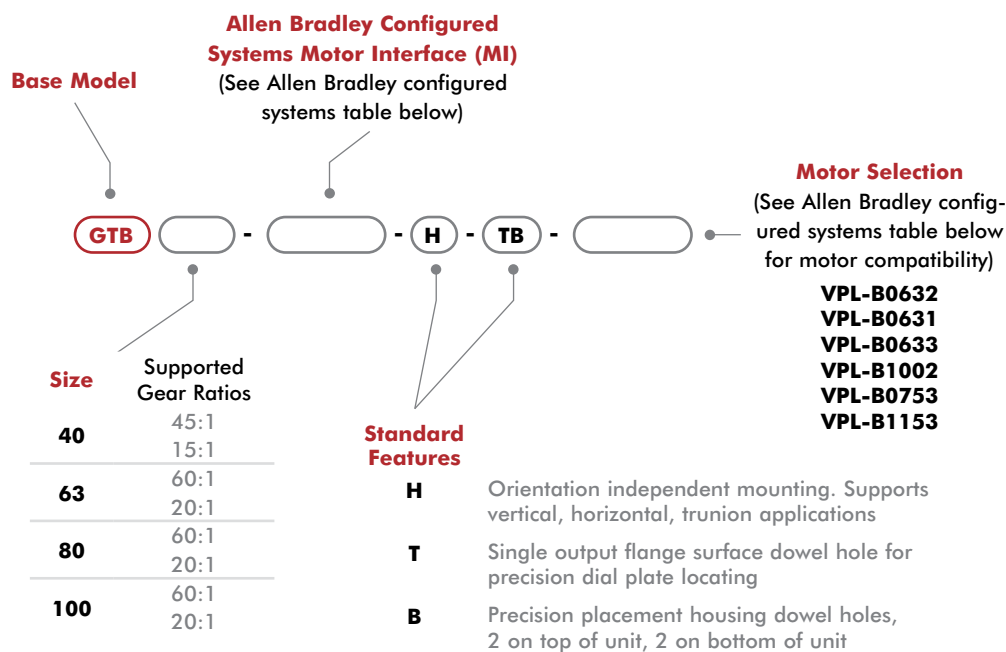
#### Servo Positioner Configured Systems

GTB Series units can be interfaced with wide variety of servo motor manufacturers. Use the MI code table to identify the supported motors for each GTB unit.

GTB series are also offered as a configured system when selecting Allen Bradley servo motors. The Allen Bradley servo motor will be installed to the GTB unit and shipped as a complete assembly. The GTB series and motor combinations are a matched pair that supports a variety of servo positioning rotary table applications. To use one of the configured systems you must verify the application requirements are within the operating parameters of the GTB unit and motor combination.



GTB Series with Allen Bradley Motor Installed\*



#### Allen Bradley Configured Systems

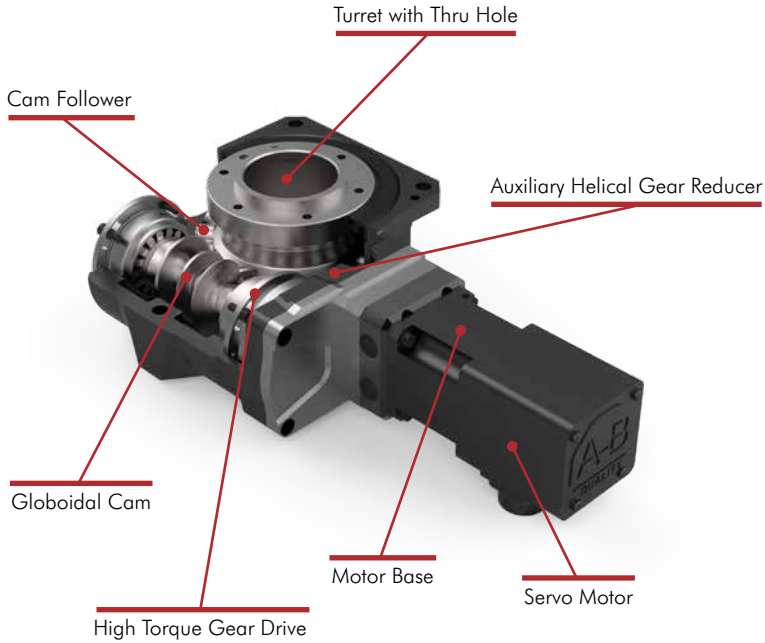
Size	Base Part #	Allen Bradley MI Code #	Motor Coupling	Gear Ratio	Motor Vendor	Allen Bradley Motor Part #	Motor Frame mm [in]	Flange size mm [in]	Shaft Ø mm [in]
40	GTB40	FDG20	Direct	15:1	Allen Bradley	<b>VPL-B0632</b>	60 [2.36]	63 [2.48]	9 [0.35]
	GTB40	FGC20	Geared	45:1		<b>VPL-B0631</b>			
63	GTB63	GDP20	Direct	20:1		<b>VPL-B0633</b>			
	GTB63	GGC22	Geared	60:1		<b>VPL-B0632</b>			
80	GTB80	HDP20	Direct	20:1		<b>VPL-B1002</b>	100 [3.94]	100 [3.94]	16 [0.63]
	GTB80	HGD24	Geared	60:1		<b>VPL-B0753</b>	80 [3.15]	75 [2.95]	11 [0.43]
100	GTB100	JDG20	Direct	20:1		<b>VPL-B1153</b>	100 [3.94]	115 [4.53]	19 [0.75]
	GTB100	JGE27	Geared	60:1					

\* = Servo Positioner units are assembled, tested and shipped with the above recommended motor for best performance.

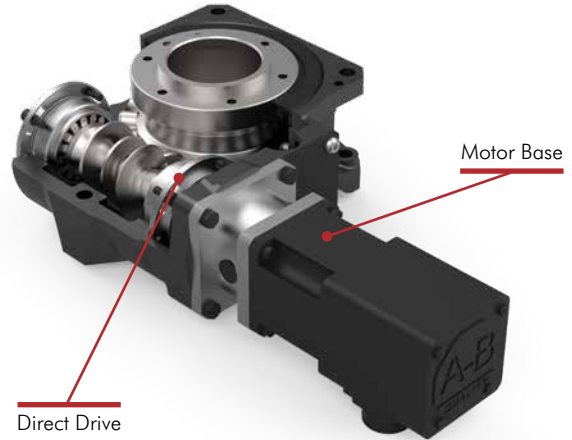
# GTB SERIES

## Globoidal (Roller Gear) Servo Positioner | Specifications

### High Torque Gear Drive: High Inertia Application



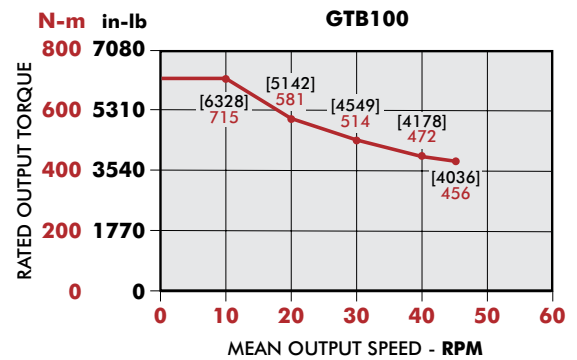
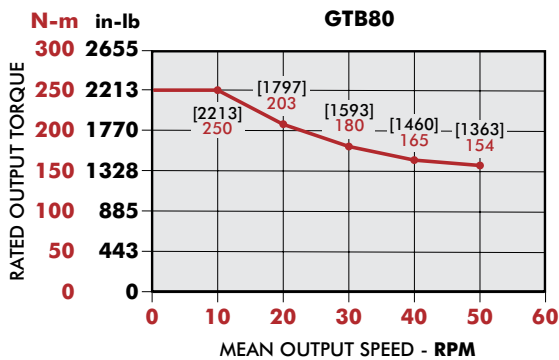
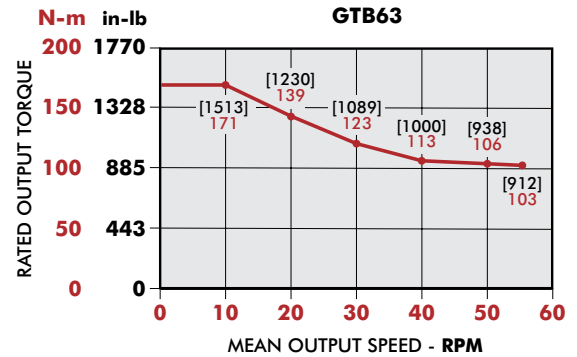
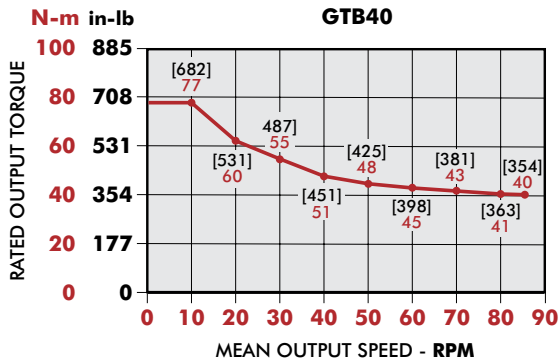
### Direct Drive: Zero Backlash Precision Applications



**NOTE:**

Motor brake must be applied for applications with gravity torque acting on output table (trunnion mounting) in the case of power loss. Follow the instruction manual for fitting and installing motor. Improper handling can cause damage or product malfunction.

General Specifications	Symbol	Units	GTB40		GTB63		GTB80		GTB100	
			Direct	Geared	Direct	Geared	Direct	Geared	Direct	Geared
Motor Coupling			Direct	Geared	Direct	Geared	Direct	Geared	Direct	Geared
Constant lead ratio			15:1	45:1	20:1	60:1	20:1	60:1	20:1	60:1
Center distance		mm [in]	40 [1.57]		63 [2.48]		80 [3.15]		100 [3.94]	
Through hole diameter	Ø	mm [in]	25 [0.98]		50 [1.97]		75 [2.95]		85 [3.35]	
Accuracy		arc-sec	90 ±45		60 ±30		40 ±20		40 ±20	
Repeatability		arc-sec	20 ±10		14 ±7		10 ±5		10 ±5	
Allowable static torque	T <sub>s</sub>	N-m [in-lb]	176 [1558]		411 [3637]		600 [5310]		1341 [11868]	
Max start / stop torque	T <sub>U</sub>	N-m [in-lb]	94 [832]		210 [1859]		307 [2717]		880 [7789]	
Allow. mean output speed	N <sub>m</sub>	rpm	86		55		50		45	
Allow. ultimate output speed	N <sub>U</sub>	rpm	100		70		60		50	
Allow. axial cap. on output	P <sub>a</sub>	N [lbs]	1100 [247]		1850 [416]		3632 [816]		4100 [922]	
Allow. radial cap. on output	P <sub>r</sub>	N [lbs]	740 [166]		1500 [337]		3100 [697]		3420 [769]	
Allow. moment cap. on output	P <sub>moment</sub>	N-m [in-lb]	40 [354]		85 [752]		226 [2000]		313 [2770]	
Inertia moment on input axis	J	[lb-ft <sup>2</sup> ] x 10 <sup>-4</sup> [kg-m <sup>2</sup> ] x 10 <sup>-4</sup>	[6.24] 0.263	[4.03] 0.17	[20.67] 0.871	[9.49] 0.4	[76.27] 3.214	[36.07] 1.52	[246.55] 10.39	[96.82] 4.08
Backlash		arc-sec	0	25	0	15	0	15	0	10
Average efficiency		%	90	80	90	80	90	80	90	80
Lubrication (Maint. Free)			Grease		Grease		Grease		Grease	
Weight		[lbm] kg	[7.28] 3.3	[7.72] 3.5	[13.01] 5.9	[13.67] 6.2	[28.44] 12.9	[31.09] 14.1	[53.58] 24.3	[55.57] 25.2

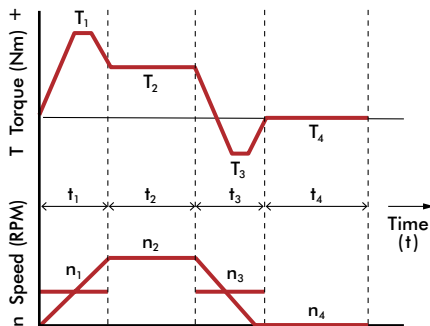


### Sizing GTB Series for an Application (Contact Destaco for sizing application support)

#### 1. Load diagram

Check motion profile and resultant inertia torque.  
(Add working torque if applied).

Start and stop speed can be simplified to average speed within a segment.



#### 2. Check key conditions

**Mean torque**  $T_{mean} = \sqrt{\frac{10}{3} \frac{n_1 \cdot t_1 \cdot |T_1|^3 + n_2 \cdot t_2 \cdot |T_2|^3 + \dots + n_n \cdot t_n \cdot |T_n|^3}{n_1 \cdot t_1 + n_2 \cdot t_2 + \dots + n_n \cdot t_n}}$  (N-m)

**Mean output speed**  $n_{mean} = \frac{n_1 \cdot t_1 + n_2 \cdot t_2 + \dots + n_n \cdot t_n}{t_1 + t_2 + \dots + t_n}$  (rpm)

**Max output speed**  $n_{max}$  (rpm)

#### 3. Pre-selection

Choose a size that meets these criteria.

$T_{mean} < \text{Maximum rated output torque (N-m)}$

$n_{mean} < \text{Allowable mean output speed Nm (rpm)}$

$n_{max} < \text{Allowable ultimate output speed Nu (rpm)}$

#### 4. Check specifications

**Start/stop torque**  $T_1 < \text{Maximum rated output torque (N-m)}$   
 $T_3 < \text{Maximum rated output torque (N-m)}$

**Operation condition factor**  
 Smooth without any impact or sudden load  $f = 1.0$   
 Normal, but occasional emergency stop  $f = 1.5$   
 Operation with frequent impact or sudden load  $f = 3.0$

**Estimated lifetime**  $L_h = 12000 \left( \frac{T_{op}}{f \cdot T_{mean}} \right)^{\frac{10}{3}}$  (hours)

#### 5. Selection complete

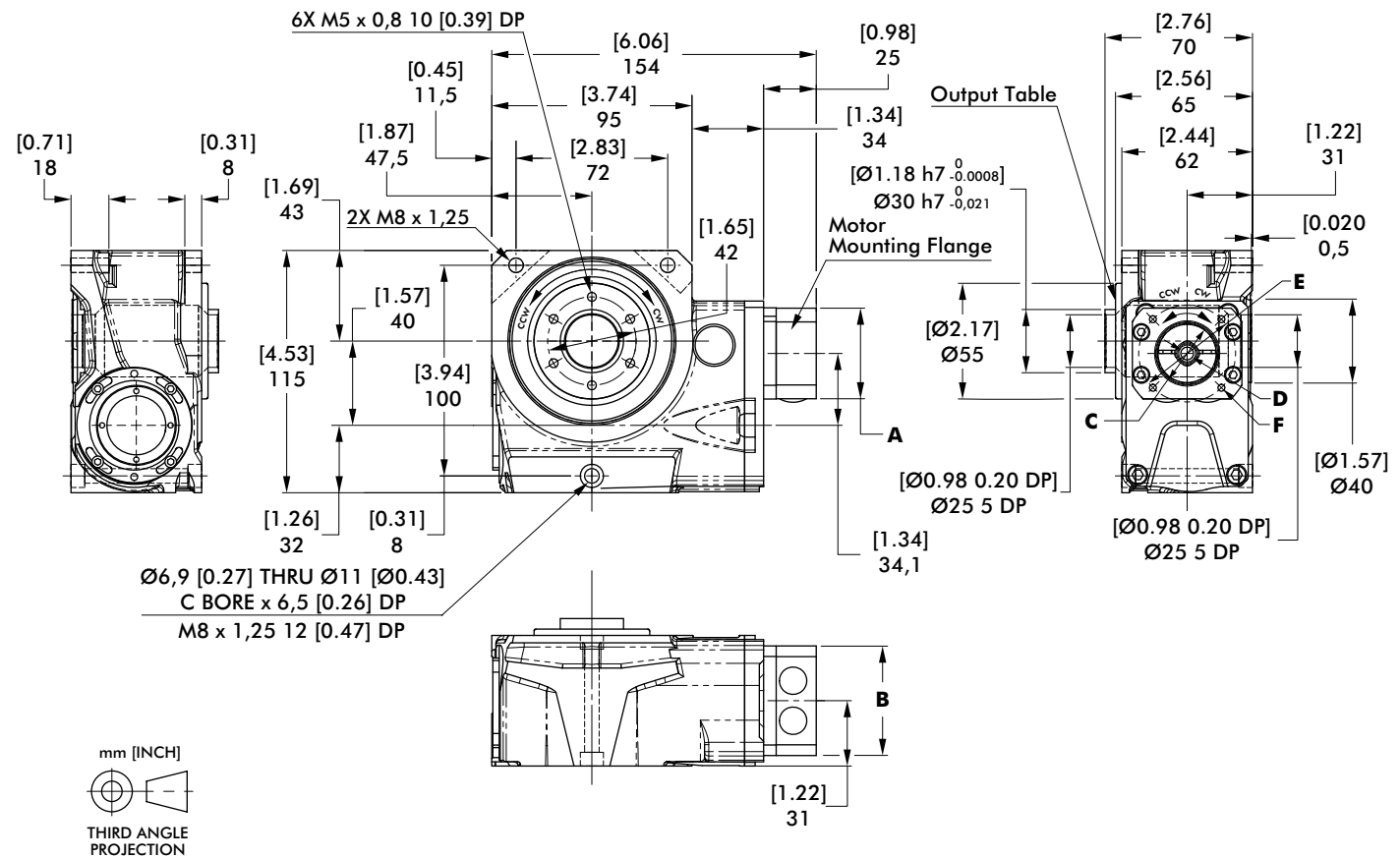
If above values don't satisfy requirements, go back to step 2 and 3 to re-select size.

# GTB40 SERIES

Globoidal (Roller Gear) Servo Positioner | Dimensions

GTB40-FG (Motor Frame Size □ = 38 [1.50], 40 [1.57])

Gear Drive: High Inertia Applications: Ratio 45:1



Input/Output Rotation: CW/CCW

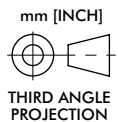
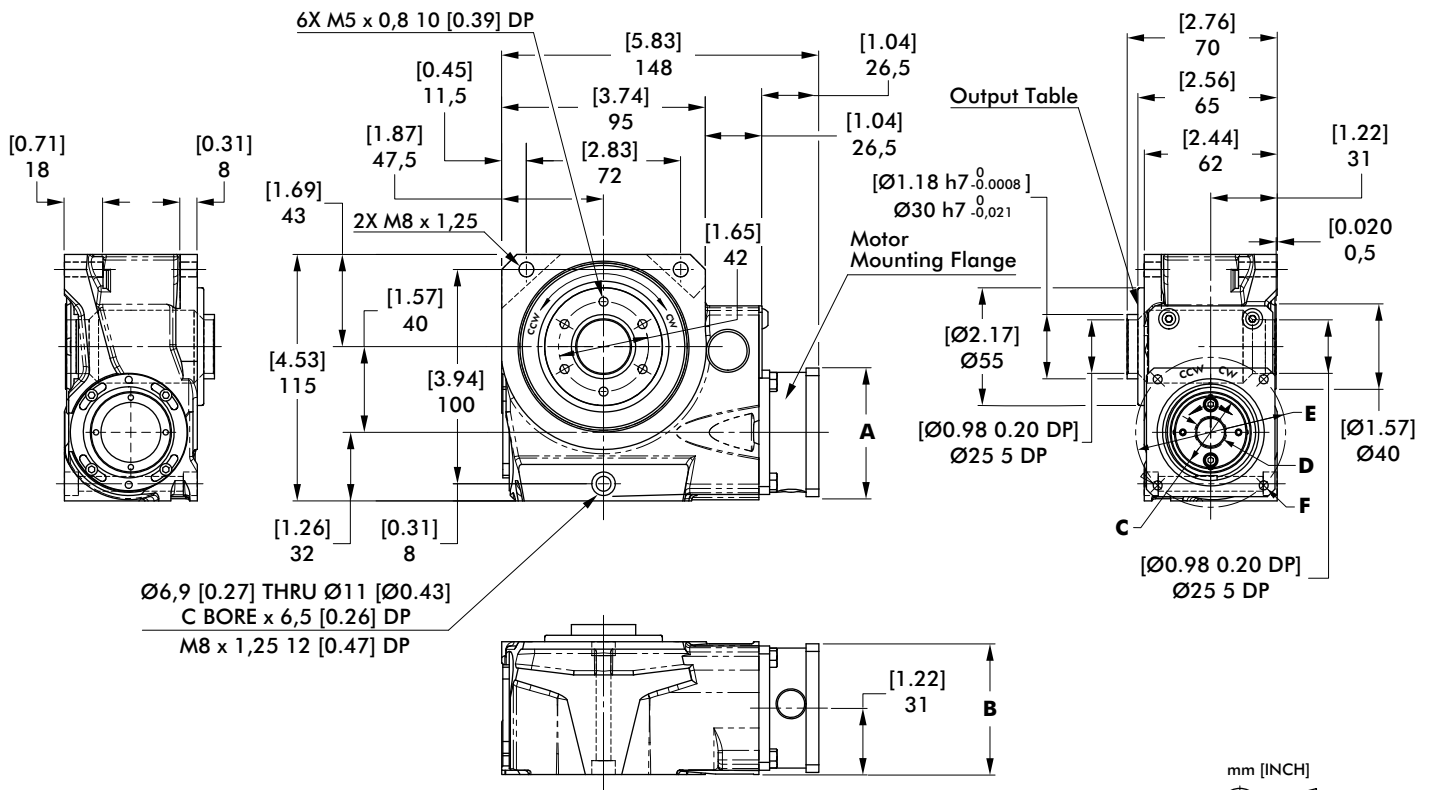
MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
FGA20	43 [1.69]	52 [2.05]	Ø30 [1.18] x 4 [0.16]	8 [0.31]	46 [1.81]	4X M4 x 11,5 [0.45] DEEP
FGB20	43 [1.69]	52 [2.05]	Ø30 [1.18] x 4 [0.16]	8 [0.31]	45 [1.77]	4X M3 x 8,5 [0.33] DEEP
FGC20	55 [2.17]	55 [2.17]	Ø40 [1.57] x 3 [0.12]	9 [0.35]	63 [2.48]	4X M5 X 14 [0.55] DEEP
FGD20	55 [2.17]	55 [2.17]	Ø40 [1.57] x 3 [0.12]	9 [0.35]	63 [2.48]	4X M4 X 11,5 [0.45] DEEP

# GTB40 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

**GTB40-FD** (Motor Frame Size □ = 60 [2.37])

Direct Drive: Zero Backlash Precision Applications: Ratio 15:1



Input/Output Rotation: CW/CCW

MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
FDA20	60 [2.36]	60 [2.36]	Ø50 [1.97] x 4 [0.16]	Ø14 [0.55]	Ø70 [2.76]	4X M5 THRU
FDB20				Ø11 [0.43]		
FDC20				Ø14 [0.55]		
FDD20				Ø9 [0.35]		
FDE20				Ø12 [0.47]		
FDF20	55 [2.17]	55 [2.17]	Ø40 [1.57] x 4 [0.16]	Ø9 [0.35]	Ø63 [2.48]	4X M5 THRU
FDG20				Ø9 [0.35]		
FDH20				Ø11 [0.43]		
FDJ20				Ø9 [0.35]		
FDK20	90 [3.54]	90 [3.54]	Ø80 [3.15] X 4 [0.16]	Ø16 [0.63]	Ø100 [3.94]	4X M6 THRU

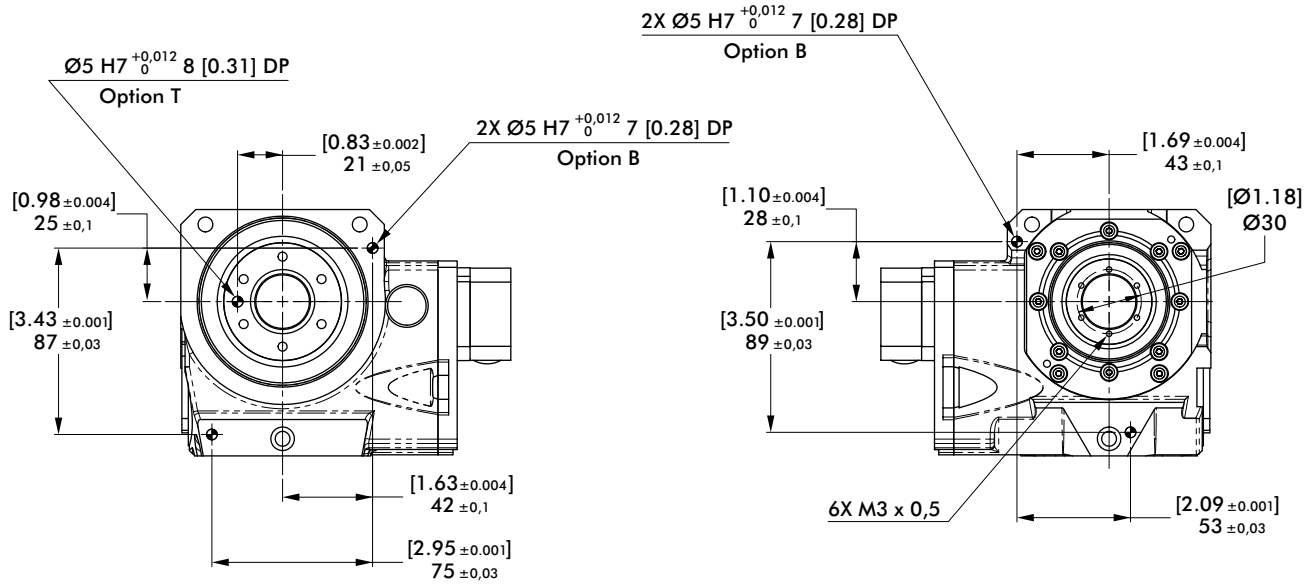


# GTB40 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

### GTB40 Option Specifications

#### Dowel Hole Option -B, Housing -T: Output Table

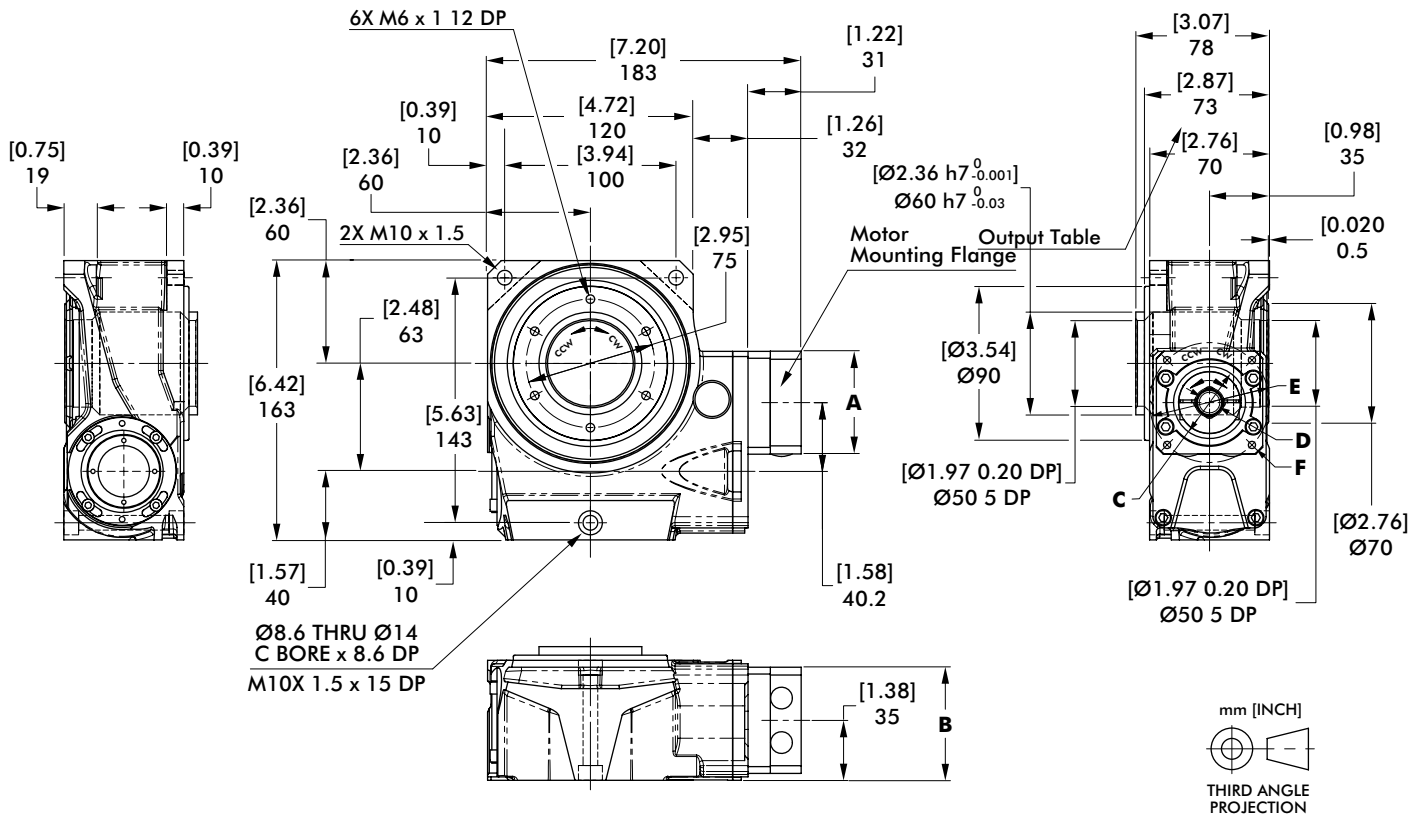


# GTB63 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

**GTB-63-GG** (Motor Frame Size □ = 60 [2.37])

Gear Drive: High Inertia applications: Ratio 60:1



Input/Output Rotation: CW/CCW

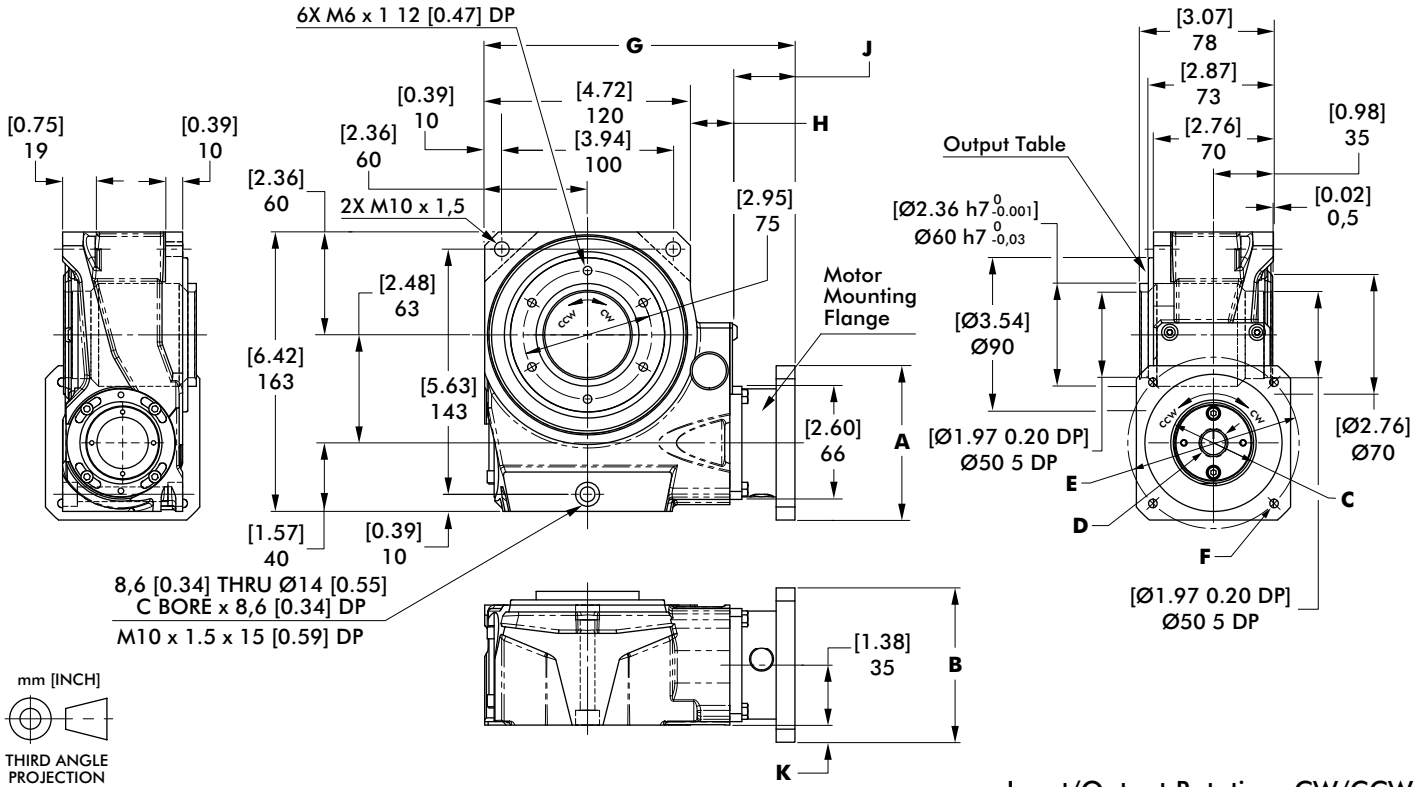
MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
GGA20	60 [2.36]	62 [2.44]	Ø50 [1.97] x 5 [0.20]	Ø14 [0.55]	Ø70 [2.76]	4X M5 x 14 [0.55] Deep
GGA22				Ø9 [0.35]		
GGB20				Ø14 [0.55]		
GGB21				Ø11 [0.43]		
GGC22	70 [2.76]	70 [2.76]	Ø40 [1.57] x 3 [0.12]	Ø9 [0.35]	Ø63 [2.48]	4X M5 x 14 [0.55] Deep
GGD23				Ø12 [0.47]	Ø70 [2.76]	
GGE24				Ø11 [0.43]	Ø75 [2.95]	
GGF22	60 [2.36]	62 [2.44]	Ø40 [1.57] x 3 [0.12]	Ø9 [0.35]	Ø63 [2.48]	4X M4 x 11,5 [0.45] Deep
GGG20	70 [2.76]	70 [2.76]	Ø60 [2.36] x 5 [0.20]	Ø14 [0.55]	Ø75 [2.95]	4X M6 x 16 [0.63] Deep

# GTB63 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

GTB63-GD (Motor Frame Size □ = 60 [2.36], 80 [3.15], 86 [3.39], 90 [3.54])

Direct Drive: Ratio 20:1



mm [INCH]  
THIRD ANGLE PROJECTION

MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
GDA20	60 [2.36]	60 [2.36]	Ø50 [1.97] x 4 [0.16]	Ø14 [0.55]	Ø70 [2.76]	4X M5 THRU
GDB20	80 [3.15]	80 [3.15]	Ø70 [2.76] x 4 [0.16]	Ø19 [0.75]	Ø90 [3.54]	
GDC20				Ø14 [0.55]		4X M6 THRU
GDD20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 6 [0.24]	Ø16 [0.63]	Ø100 [3.94]	
GDE20						4X M6 THRU
GDF20	60 [2.36]	60 [2.36]	Ø50 [1.97] x 4 [0.16]	Ø14 [0.55]	Ø70 [2.76]	4X M4 THRU
GDG20				Ø19 [0.75]		4X M5 THRU
GDH20	80 [3.15]	80 [3.15]	Ø70 [2.76] x 4 [0.16]	Ø14 [0.55]	Ø90 [3.54]	
GDJ20				Ø16 [0.63]		4X M6 THRU
GDK20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 6 [0.24]	Ø10 [0.39]	Ø100 [3.94]	
GDL20	60 [2.36]	60 [2.36]	Ø50 [1.97] x 4 [0.16]	Ø12 [0.47]	Ø70 [2.76]	4X M5 THRU
GDM20	80 [3.15]	80 [3.15]	Ø70 [2.76] x 4 [0.16]	Ø16 [0.63]	Ø90 [3.54]	4X M6 THRU
GDN20	72 [2.83]	72 [2.83]	Ø60 [2.36] x 4 [0.16]	Ø14 [0.55]	Ø75 [2.95]	
GDP20	55 [2.17]	55 [2.17]	Ø40 [1.57] x 5 [0.20]	Ø9 [0.35]	Ø63 [2.48]	
GDQ20						4X M5 THRU
GDR20	70 [2.76]	70 [2.76]	Ø60 [2.36] x 4 [0.16]	Ø11 [0.43]	Ø75 [2.95]	



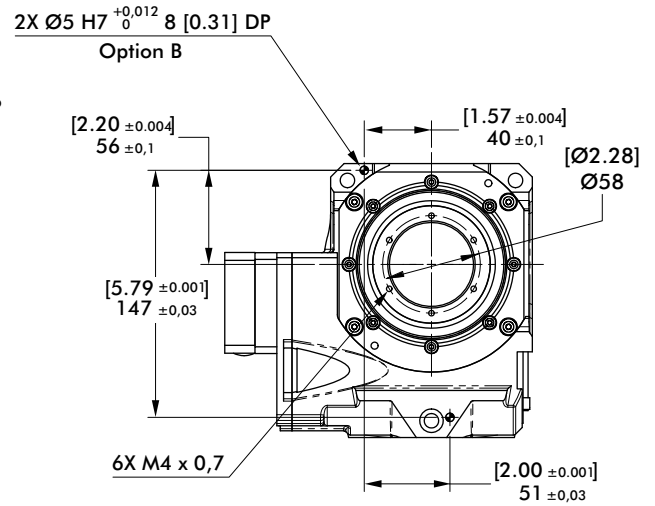
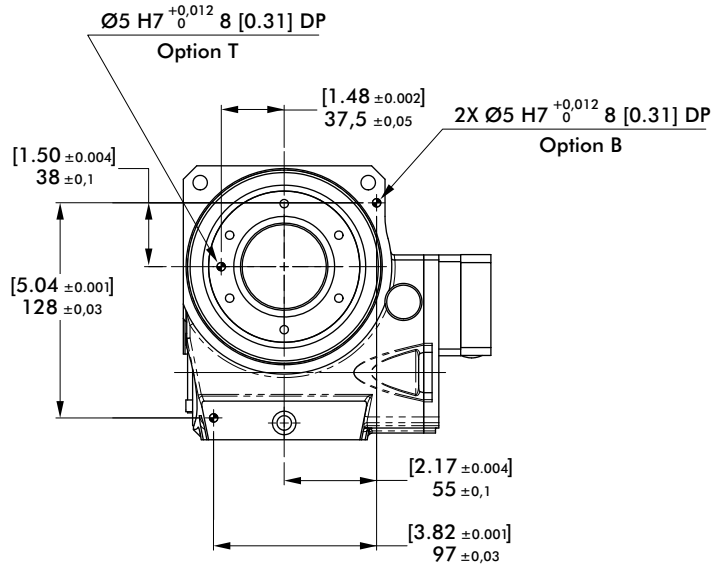
Frame Size	G	H	J	K
60	178 [7.01]	24,5 [0.96]	33,5 [1.32]	--
80	180 [7.09]		35,5 [1.40]	5 [0.20]
86	181 [7.13]		36,5 [1.44]	10 [0.39]
90				

# GTB63 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

### GTB63 Option Specifications

#### Dowel Hole Option -B, Housing -T: Output Table

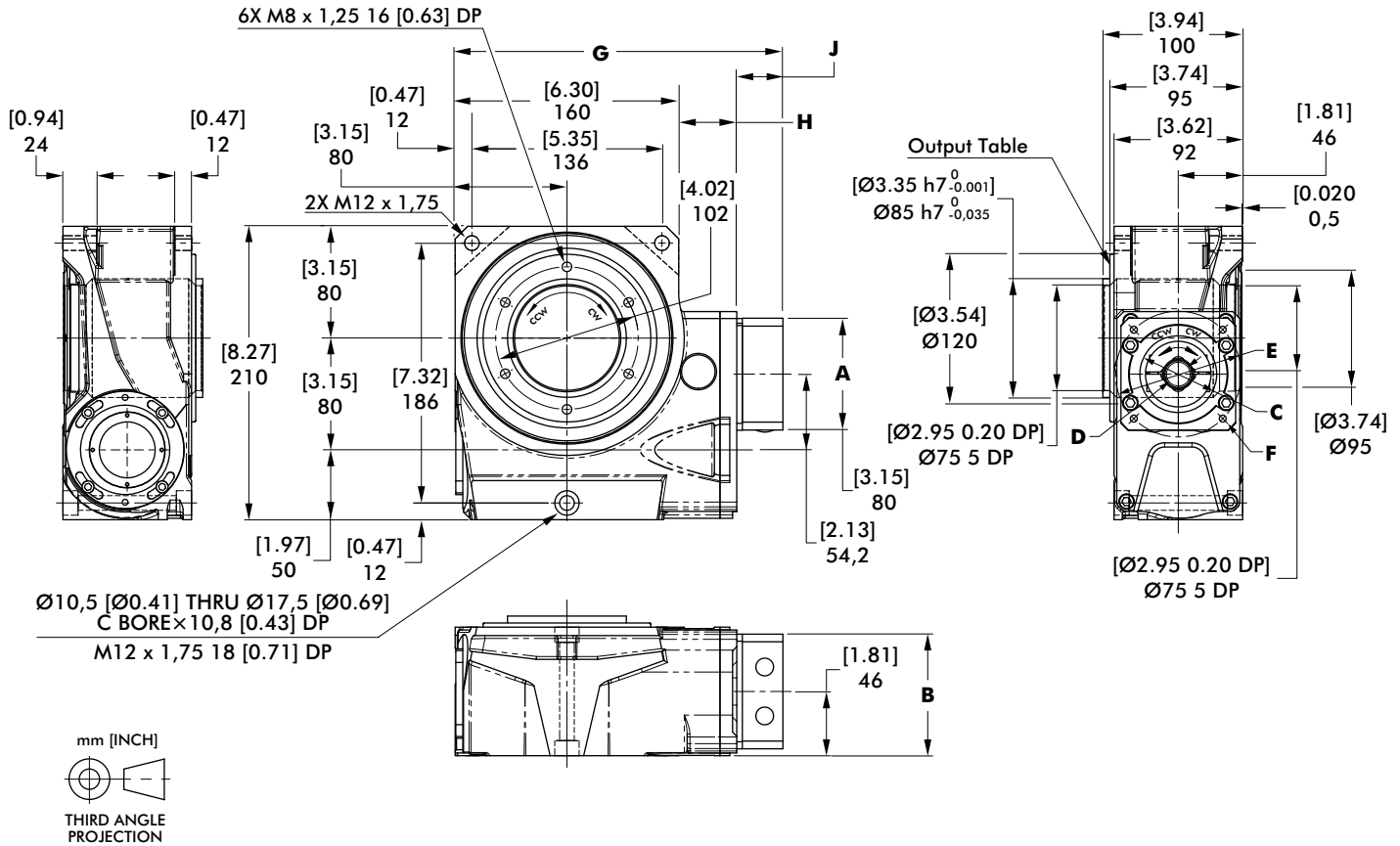


# GTB80 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

GTB80-HG (Motor Frame Size □ = 80 [3.15], 86 [3.39], 90 [3.54])

Gear Drive: High Inertia Applications: Ratio 60:1



Input/Output Rotation: CW/CCW

MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
HGA20	80 [3.15]	82 [3.23]	Ø70 [2.76] x 4,5 [0.18]	Ø19 [0.75]	Ø90 [3.54]	4X M6 THRU
HGA22				Ø16 [0.63]		4X M6 x 17 [0.67] DEEP
HGB21	90 [3.54]	88 [3.46]	Ø80 [3.15] x 7 [0.28]	Ø14 [0.55]	Ø100 [3.94]	4X M6 THRU
HGB22				Ø16 [0.63]		4X M6 x 17 [0.67] DEEP
HGB23	80 [3.15]	82 [3.23]	Ø70 [2.76] x 4,5 [0.18]	Ø10 [0.39]	Ø75 [2.95]	4X M6 THRU
HGC20				Ø11 [0.43]		4X M5 x 14 [0.55] DEEP
HGD24	80 [3.15]	82 [3.23]	Ø60 [2.36] x 3 [0.12]	Ø16 [0.63]	Ø90 [3.54]	4X M6 THRU
HGE22				Ø14 [0.55]		
HGF25	90 [3.54]	88 [3.46]	Ø80 [3.15] x 4 [0.16]	Ø16 [0.63]	Ø100 [3.94]	4X M6 x 15 [0.59] DEEP
HGG26				Ø14 [0.55]		
HGG25	90 [3.54]	88 [3.46]	Ø80 [3.15] x 4 [0.16]	Ø16 [0.63]	Ø100 [3.94]	4X M6 x 15 [0.59] DEEP
HGH20				Ø14 [0.55]		
HGH20	98 [3.86]	98 [3.86]	Ø95 [3.74] x 4 [0.16]	Ø19 [0.75]	Ø115 [4.53]	4X M8 x 22,5 [0.89] DEEP



80



86/90

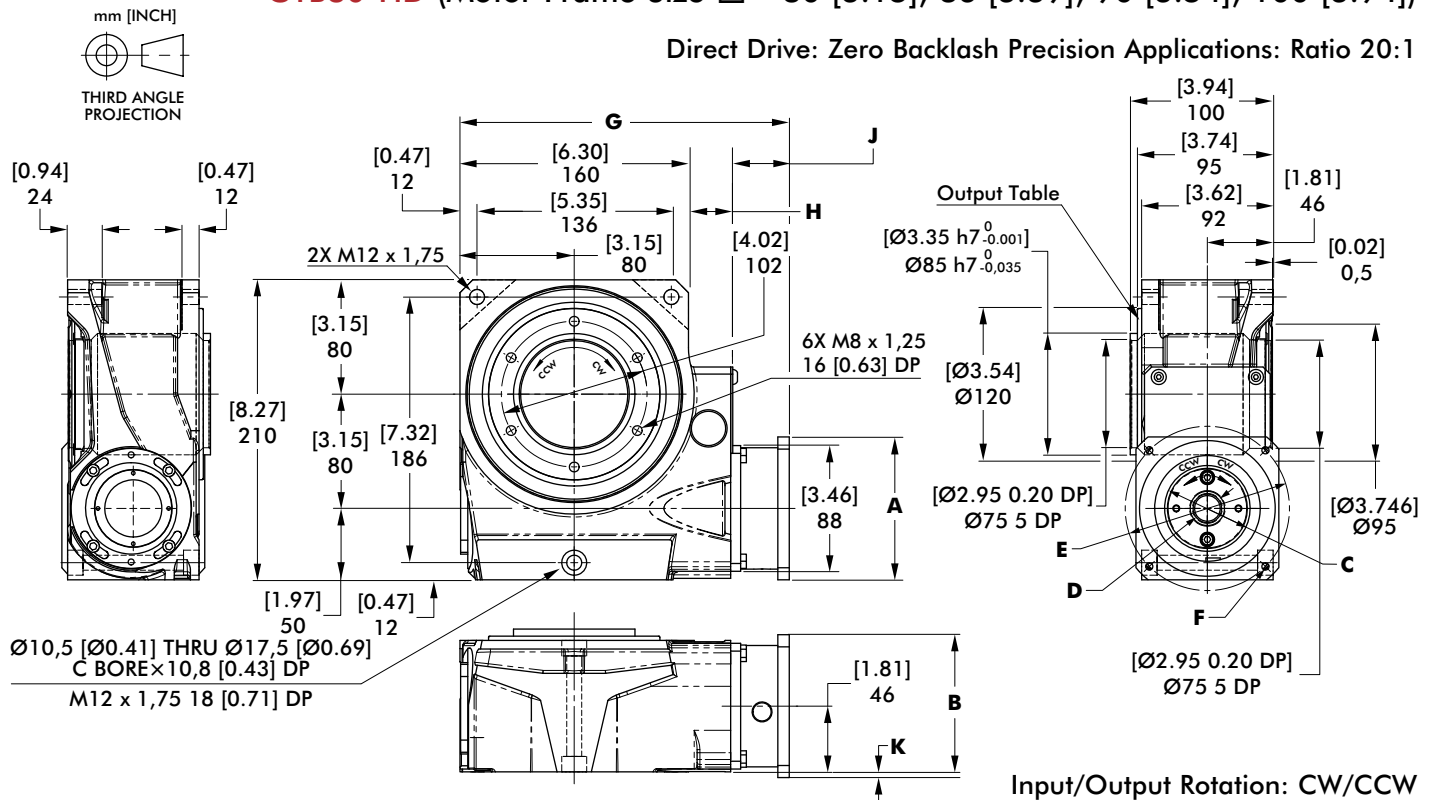
Frame Size	G	H	J
80	234 [9.21]	41,5 [1.63]	33 [1.30]
86	241 [9.49]	45,5 [1.79]	35,5 [1.40]
90			

# GTB80 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

**GTB80-HD** (Motor Frame Size □ = 80 [3.15], 86 [3.39], 90 [3.54], 100 [3.94])

Direct Drive: Zero Backlash Precision Applications: Ratio 20:1



MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
HDA20	80 [3.15]	80 [3.15]	Ø70 [2.76] x 4,5 [0.18]	Ø19 [0.75]	Ø90 [3.54]	
HDB20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 5,5 [0.22]	Ø14 [0.55]	Ø100 [3.94]	4X M6 THRU
HDC20				Ø16 [0.63]		
HDD20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 3,5 [0.14]	Ø24 [0.94]	Ø115 [4.53]	
HDE20	80 [3.15]	80 [3.15]	Ø70 [2.76] x 4,5 [0.18]	Ø19 [0.75]	Ø90 [3.54]	4X M5 THRU
HDF20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 3,5 [0.14]		Ø115 [4.53]	4X M8 THRU
HDG20				Ø95 [3.74] x 7,5 [0.30]		
HDH20	80 [3.15]	80 [3.15]	Ø70 [2.76] x 4,5 [0.18]	Ø16 [0.63]	Ø90 [3.54]	4X M6 THRU
HDJ20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 5,5 [0.22]		Ø100 [3.94]	
HDK20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 3,5 [0.14]	Ø22 [0.87]	Ø115 [4.53]	4X M8 THRU
HDL20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 5,5 [0.22]	Ø10 [0.39]	Ø100 [3.94]	4X M6 THRU
HDM20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 7,5 [0.30]	Ø22 [0.87]	Ø115 [4.53]	4X M8 THRU
HDN20	96 [3.78]	96 [3.78]	Ø80 [3.15] x 4 [0.16]	Ø19 [0.75]	Ø100 [3.94]	4X M6 THRU
HDP20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 3,5 [0.14]	Ø16 [0.63]		4X M3 THRU
HDQ20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 3,5 [0.14]	Ø19 [0.75]	Ø115 [4.53]	4X M8 THRU
HDR20	90 [3.54]	90 [3.54]	Ø80 [3.15] x 3,5 [0.14]	Ø14 [0.55]	Ø100 [3.94]	4X M6 THRU
HDS20						
HDT20	114 [4.49]	114 [4.49]	Ø110 [4.33] x 4 [0.16]	Ø24 [0.94]	Ø130 [5.12]	4X M8 THRU



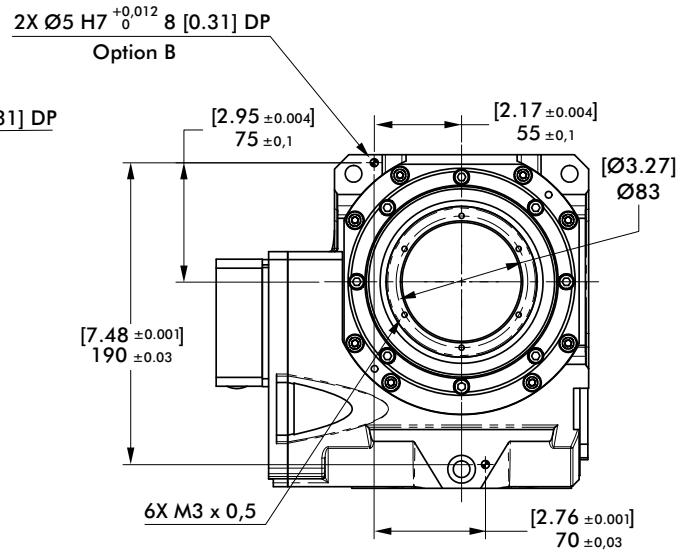
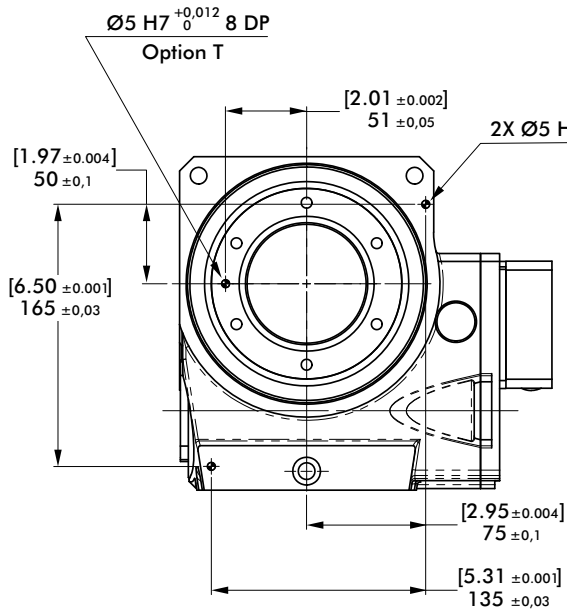
Frame Size	G	H	J	K
80	226,5 [8.92]	31 [1.22]	35,5 [1.40]	--
86	230,5 [9.07]		39,5 [1.56]	
90				4 [0.16]
100				

# GTB80 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

### GTB80 Option Specifications

#### Dowel Hole Option -B, Housing -T: Output Table

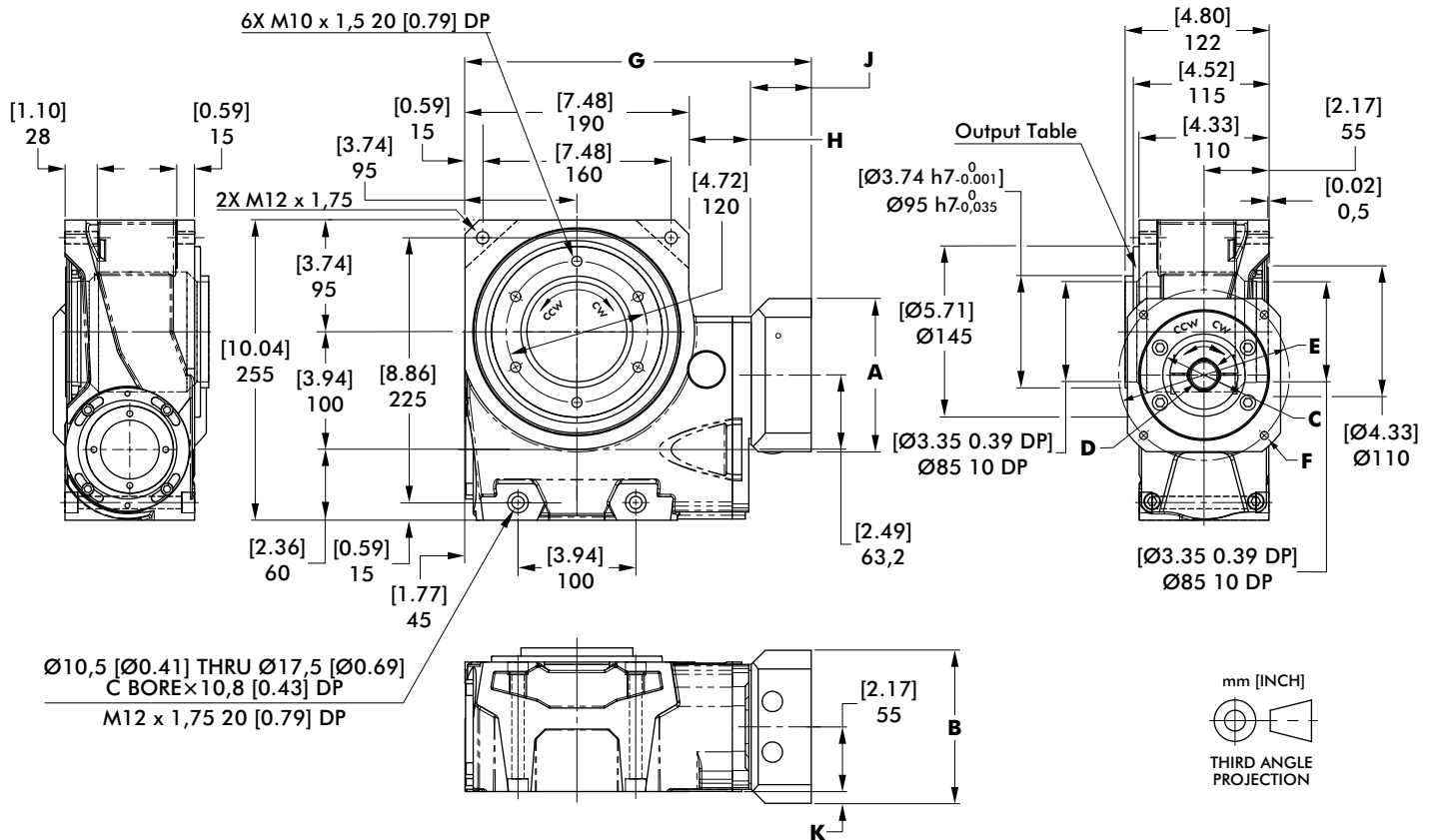


# GTB100 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

**GTB100-JG** (Motor Frame Size □ = 90 [3.54], 100 [3.94], 130 [5.12])

Gear Drive: High Inertia applications: Ratio 60:1



Input/Output Rotation: CW/CCW

MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
JGA20				Ø24 [0.94]		
JGA21	130 [5.12]	130 [5.12]	Ø110 [4.33] x 7 [0.28]	Ø19 [0.75]	Ø145 [5.71]	4X M8 x 22,5 [0.89] Deep
JGA22				Ø22 [0.87]		
JGB23				Ø14 [0.55]		
JGB24	90 [3.54]	90 [3.54]	Ø80 [3.15] x 9,5 [0.37]	Ø16 [0.63]	Ø100 [3.94]	4X M6 x 17 [0.67] Deep
JGB25				Ø10 [0.39]		
JGC20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 5,5 [0.22]	Ø24 [0.94]	Ø115 [4.53]	
JGD26	90 [3.54]	90 [3.54]	Ø80 [3.15] x 9,5 [0.37]	Ø16 [0.63]	Ø100 [3.94]	
JGE22				Ø22 [0.87]		
JGE27	100 [3.94]	100 [3.94]	Ø95 [3.74] x 7,5 [0.30]	Ø19 [0.75]	Ø115 [4.53]	4X M8 x 22,5 [0.89] Deep
JGF27	96 [3.78]	96 [3.78]	Ø80 [3.15] x 5 [0.20]		Ø100 [3.94]	4X M6 x 17 [0.67] Deep
JGG20	114 [4.49]	114 [4.49]	Ø110 [4.33] x 3,5 [0.14]	Ø24 [0.94]	Ø130 [5.12]	4X M8 x 22,5 [0.89] Deep



Frame Size	G	H	J	K
90	280 [11.02]	51 [2.01]	39 [1.54]	--
100	281 [11.06]	53 [2.09]	38 [1.50]	
130	280 [11.02]		51 [2.01]	10 [0.39]

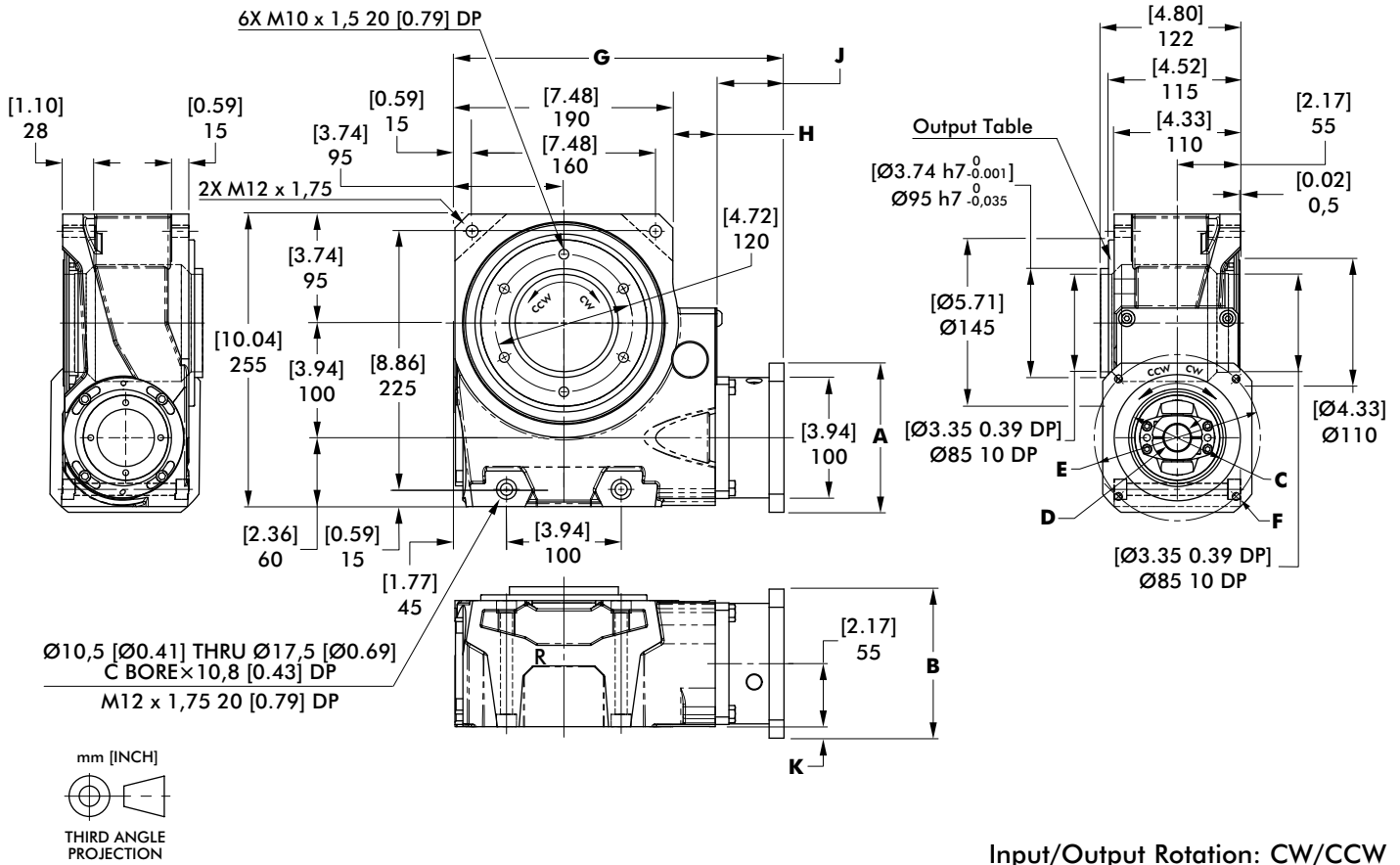


# GTB100 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

GTB100-JD (Motor Frame Size □ = 100 [3.94], 130 [5.12])

Direct Drive: Zero Backlash Precision Applications: Ratio 20:1



Input/Output Rotation: CW/CCW

MI CODE	A Width mm [in]	B Height mm [in]	C Pilot Ø x Depth mm [in]	D Shaft Ø mm [in]	E Fixing Holes PCD mm [in]	F Fixing Holes Qty x Size mm [in]
JDA20	130 [5.12]	130 [5.12]	Ø110 [4.33] x 6,5 [0.26]	Ø19 [0.75]	Ø145 [5.71]	4X M8 THRU
JDB20	130 [5.12]	130 [5.12]	Ø110 [4.33] x 6,5 [0.26]	Ø22 [0.87]	Ø145 [5.71]	4X M8 THRU
JDC20	130 [5.12]	130 [5.12]	Ø110 [4.33] x 6,5 [0.26]	Ø24 [0.94]	Ø145 [5.71]	4X M8 THRU
JDD20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 5,5 [0.22]	Ø24 [0.94]	Ø115 [4.53]	4X M6 THRU
JDE20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 7,5 [0.22]	Ø22 [0.87]	Ø115 [4.53]	4X M6 THRU
JDF20	126 [4.96]	126 [4.96]	Ø110 [4.33] x 4,5 [0.18]	Ø24 [0.94]	Ø130 [5.12]	4X M8 THRU
JDG20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 3,5 [0.14]	Ø19 [0.75]	Ø115 [4.53]	4X M8 THRU
JDH20	114 [4.49]	114 [4.49]	Ø110 [4.33] x 3,5 [0.14]	Ø24 [0.94]	Ø130 [5.12]	4X M8 THRU
JDJ20	100 [3.94]	100 [3.94]	Ø95 [3.74] x 3,5 [0.14]	Ø19 [0.75]	Ø115 [4.53]	4X M8 THRU
JDK20	114 [4.49]	114 [4.49]	Ø110 [4.33] x 3,5 [0.14]	Ø24 [0.94]	Ø130 [5.12]	4X M8 THRU
JDL20	126 [4.96]	126 [4.96]	Ø110 [4.33] x 4,5 [0.18]	Ø19 [0.75]	Ø130 [5.12]	4X M8 THRU



90



130

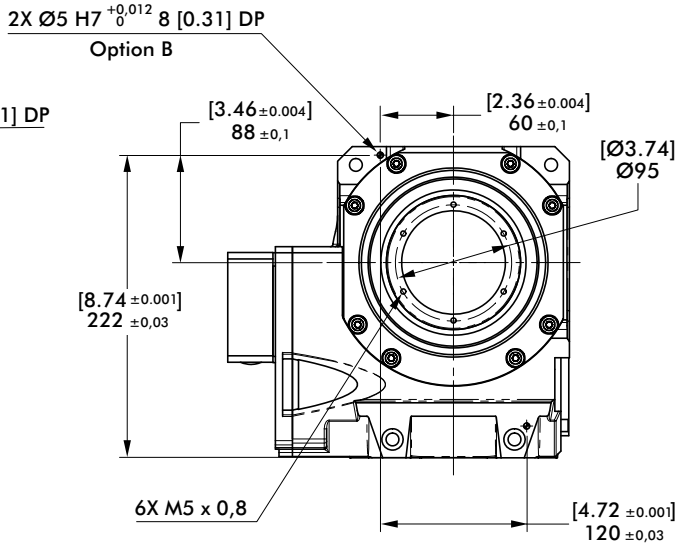
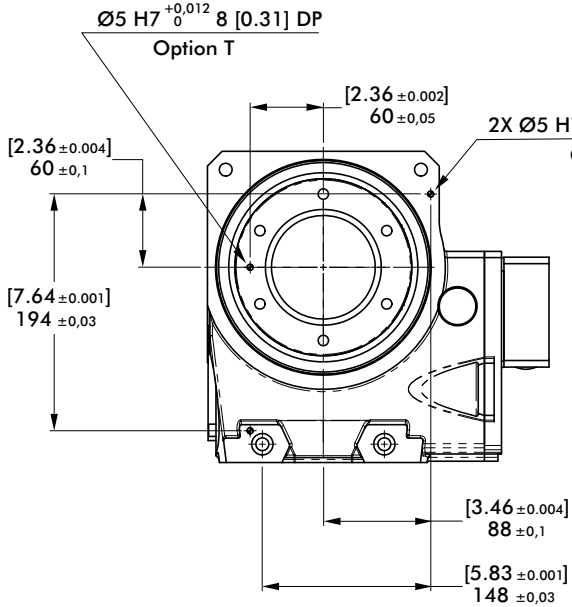
Frame Size	G	H	J	K
100	284 [11.18]	38,5 [1.52]	55,5 [2.19]	--
130	287 [11.30]	38,5 [1.52]	58,5 [2.30]	10 [0.39]

# GTB100 SERIES

## Globoidal (Roller Gear) Servo Positioner | Dimensions

### GTB100 Option Specifications

Dowel Hole Option -B, Housing -T: Output Table



# PGM SERIES

## Parallel Gear Servo Positioner | Table of Contents



PGM40

### Features:

Destaco's **CAMCO PGM Parallel Gear Reducers** is a precision servo reducer with parallel cam mechanism.

Light, accurate, and high cost performance offers easy to use character for wide range of applications. It features a pre-loaded precision parallel cam, low input inertia, through-hole design, integrated sealed tapered bearings, high performance grease and several motor options with integrated motor clamp system for easy fitting.

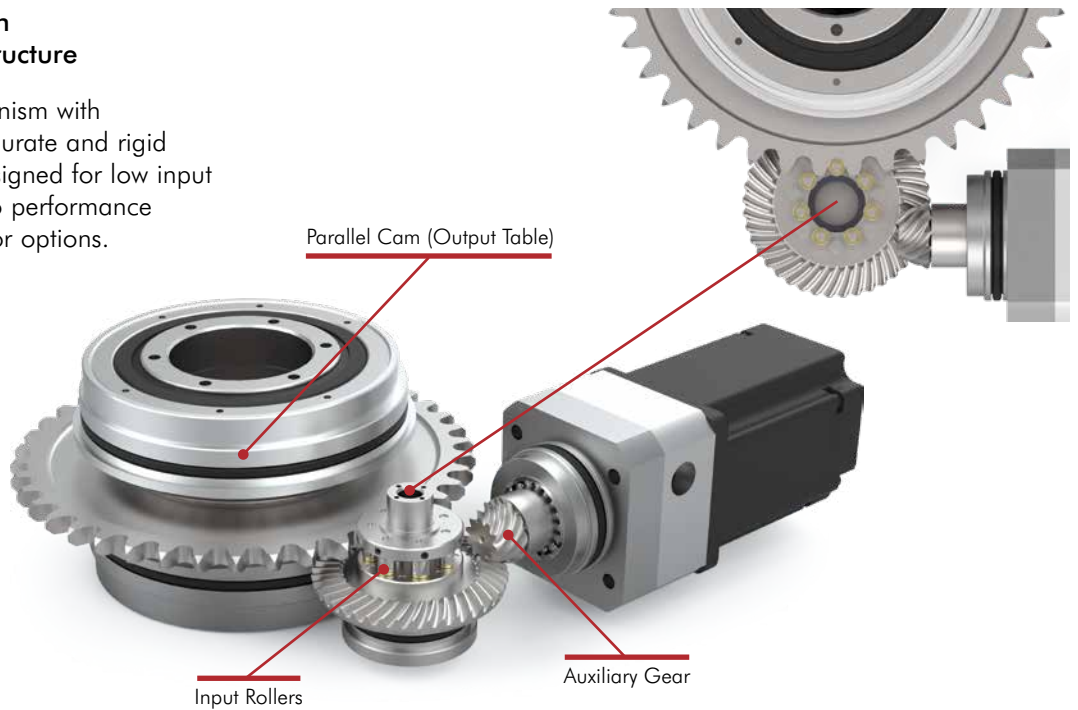
### Table of Contents

### IN-SRV-#

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How to Order .....	21
Specifications .....	22
PGM40 .....	23

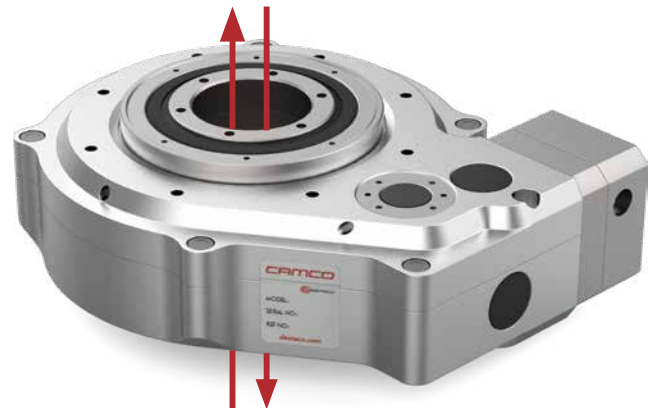
### Precision Servo Reducer with Pre-loaded Parallel Cam Structure

The PGM parallel cam mechanism with pre-loaded structure offers accurate and rigid indexing performance. It is designed for low input inertia and offers greater servo performance through a wide variety of motor options.



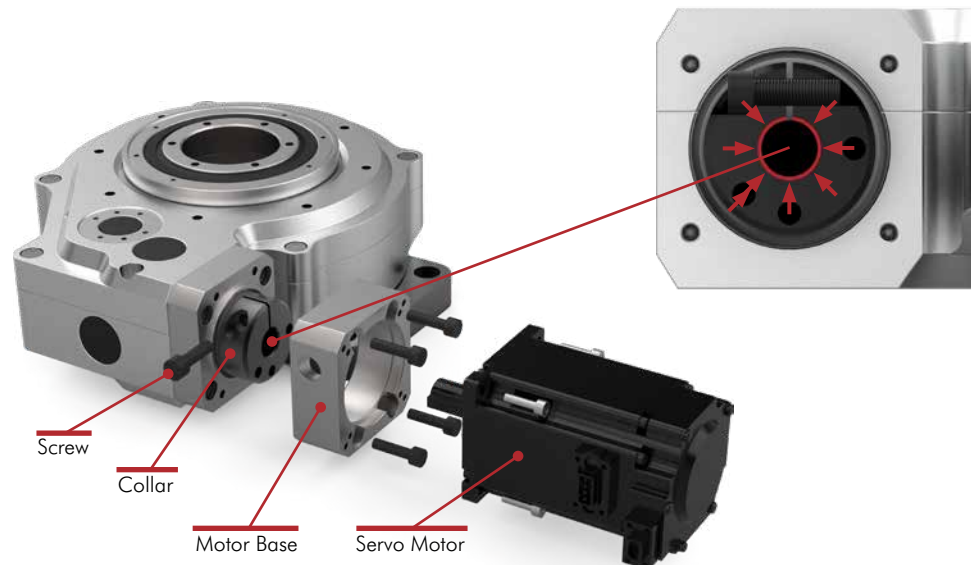
### Thru-hole Design

Large central opening through the center of the output shaft structure is suitable for wiring and piping.



### Integrated Motor Clamp System

The PGM offers a wide-variety of motor options that easily attach through the use of an integrated motor clamp.



# PGM SERIES

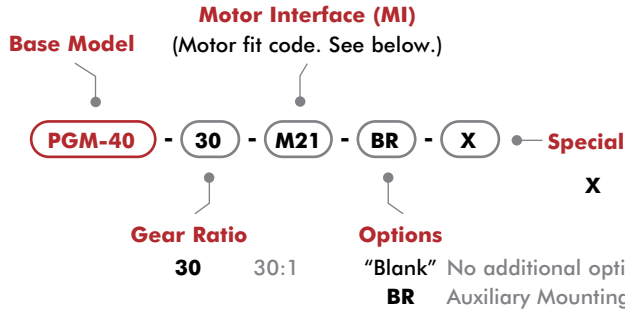
## Parallel Gear Servo Positioner | How To Order

### Parallel Gear Reducer Base Unit

PGM Series units can be interfaced with wide variety of servo motor manufacturers. Use the MI code tables to identify the supported motors for the PGM unit. Motors are ordered separately using the tables below.



PGM40 with Auxiliary Mounting Bracket. Motor not shown.



Make / Series	Model	mm [in]	kW [HP]	MI
Panasonic	A5 MSMD04	50 [1.97]	0,4 [0.54]	M21
	A5 MSME04	50 [1.97]	0,4 [0.54]	M21
	A5 MHMD04	50 [1.97]	0,4 [0.54]	M21
	A6 MSMF04	50 [1.97]	0,4 [0.54]	M21
	A6 MHMF04	50 [1.97]	0,4 [0.54]	M21

Make / Series	Model	mm [in]	kW [HP]	MI
ABB	ESM06X-201-302	50 [1.97]	0,2 [0.27]	M22
	ESM06X-401-302	50 [1.97]	0,4 [0.54]	M22
FANUC	β βiS1/6000	50 [1.97]	0,5 [0.67]	M22
	SV SV-M020	50 [1.97]	0,2 [0.27]	M22
Keyence	SV SV-M040	50 [1.97]	0,4 [0.54]	M22
	SV2 SV2-M020	50 [1.97]	0,2 [0.27]	M22
	SV2 SV2-M040	50 [1.97]	0,4 [0.54]	M22
Mitsubishi	J3 HF-KP23	50 [1.97]	0,2 [0.27]	M22
	J3 HF-KP43	50 [1.97]	0,4 [0.54]	M22
	J3 HF-MP23	50 [1.97]	0,2 [0.27]	M22
	J3 HF-MP43	50 [1.97]	0,4 [0.54]	M22
	J4 HG-KR23	50 [1.97]	0,2 [0.27]	M22
	J4 HG-KR43	50 [1.97]	0,4 [0.54]	M22
	J4 HG-MR23	50 [1.97]	0,2 [0.27]	M22
Sanyo	R2 R2AA06020F	50 [1.97]	0,2 [0.27]	M22
	R2 R2AA06040F	50 [1.97]	0,4 [0.54]	M22
	R2 R2AA06040H	50 [1.97]	0,4 [0.54]	M22
Yaskawa	Σ5 SGMAV-02A	50 [1.97]	0,2 [0.27]	M22
	Σ5 SGMAV-04A	50 [1.97]	0,4 [0.54]	M22
	Σ5 SGMAV-06A	50 [1.97]	0,55 [0.74]	M22
	Σ5 SGMJV-02A	50 [1.97]	0,2 [0.27]	M22
	Σ5 SGMJV-04A	50 [1.97]	0,4 [0.54]	M22
	Σ5 SGMJV-06A	50 [1.97]	0,6 [0.80]	M22
	Σ7 SGM7J-02A	50 [1.97]	0,2 [0.27]	M22
	Σ7 SGM7J-04A	50 [1.97]	0,4 [0.54]	M22
	Σ7 SGM7J-06A	50 [1.97]	0,6 [0.80]	M22
	Σ7 SGM7A-02A	50 [1.97]	0,2 [0.27]	M22
Σ7 SGM7A-04A	50 [1.97]	0,4 [0.54]	M22	
Σ7 SGM7A-06A	50 [1.97]	0,6 [0.80]	M22	

### Easily Integrates with a Variety of Servo Motor Manufacturers

ABB  
FANUC  
Mitsubishi  
Sanyo

Allen Bradley  
Keyence  
Panasonic  
Yaskawa

□ = Motor Frame Size

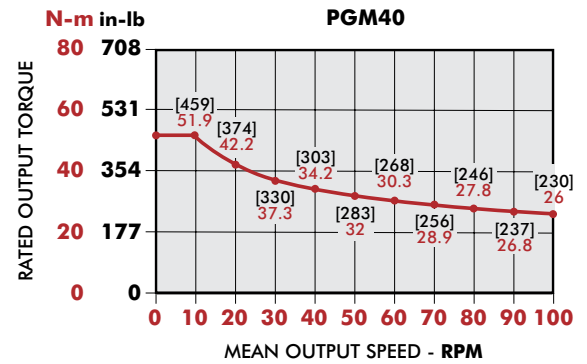
Make / Series	Model	mm [in]	kW [HP]	MI
Allen Bradley	VPL VPL-A0632F	55 [2.17]	0,39 [0.52]	M23
	VPL VPL-B0632F	55 [2.17]	0,37 [0.50]	M23
	VPL VPL-B0632T	55 [2.17]	0,54 [0.72]	M23

Make / Series	Model	mm [in]	kW [HP]	MI
Allen Bradley	VPL VPL-A0752C	70 [2.76]	0,49 [0.66]	M24
	VPL VPL-A0752E	70 [2.76]	0,66 [0.89]	M24
	VPL VPL-B0752E	70 [2.76]	0,67 [0.90]	M24
	VPL VPL-B0752F	70 [2.76]	0,8 [1.07]	M24
	VPL VPL-B0752M	70 [2.76]	0,81 [1.09]	M24

Motor Interface (MI) [in] mm						
MI	a	b	c	d	e	f
M21	[0.91-1.22]	[≤0.16]	[1.97]	[≤0.20]	[2.76]	M4
M22	23-31	≤4	50	≤5	70	
M23	[0.79]	[0.07]	[1.57]	[0.08]	[2.48]	M5
	20		40		63	
M24	[0.91]	1,7	[2.36]	2.1	[2.95]	
	23		60		75	

**Note:** Follow the instruction manual for motor fitting and installing. Improper handling can cause damages and malfunction.

General Specifications	Symbol	Units	PGM40
Axis distance		mm [in]	101 [3.98]
Output hollow dia.		mm [in]	50 [1.97]
Gear ratio	i		30
Max start / stop torque	T <sub>U</sub>	N-m [in-lb]	63,9 [566]
Allowable mean output speed	N <sub>m</sub>	rpm	100
Allowable ultimate output speed	N <sub>U</sub>	rpm	150
Inertia moment on input axis	J	[lb-ft <sup>2</sup> ] x 10 <sup>-4</sup> kg.m <sup>2</sup> x 10 <sup>-4</sup>	[10.63] 0,448
Backlash		sec	60
Allowable axial Load on output	P <sub>a</sub>	N [lbs]	1415 [318]
Allowable radial Load on output	P <sub>r</sub>	N [lbs]	2172 [488]
Allowable moment Load on output	P <sub>mean</sub>	N-m [in-lb]	102 [903]
Lubrication (Maintenance Free)			Grease
Weight		kg [lbs]	6,7 [14.77]



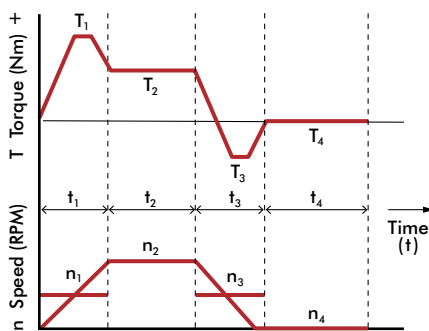
## Sizing PGM Series for an Application

(Contact Destaco for sizing application support)

### 1. Load diagram

Check motion profile and resultant inertia torque.  
(Add working torque if applied).

Start and stop speed can be simplified to average speed within a segment.



### 2. Check key conditions

$$\text{Mean torque } T_{mean} = \sqrt{\frac{\frac{10}{3} \left( n_1 \cdot t_1 \cdot |T_1| \frac{10}{3} + n_2 \cdot t_2 \cdot |T_2| \frac{10}{3} + \dots + n_n \cdot t_n \cdot |T_n| \frac{10}{3} \right)}{n_1 \cdot t_1 + n_2 \cdot t_2 + \dots + n_n \cdot t_n}} \quad (\text{N-m})$$

$$\text{Mean output speed } n_{mean} = \frac{n_1 \cdot t_1 + n_2 \cdot t_2 + \dots + n_n \cdot t_n}{t_1 + t_2 + \dots + t_n} \quad (\text{rpm})$$

$$\text{Max output speed } n_{max} \quad (\text{rpm})$$

### 3. Pre-selection

Choose a size that meets these criteria.

$$T_{mean} < \text{Maximum rated output torque (N-m)}$$

$$n_{mean} < \text{Allowable mean output speed } N_m \text{ (rpm)}$$

$$n_{max} < \text{Allowable ultimate output speed } N_u \text{ (rpm)}$$

### 4. Check specifications

**Start/stop torque** T<sub>1</sub> < Maximum rated output torque (N-m)  
T<sub>3</sub> < Maximum rated output torque (N-m)

**Operation condition factor** Smooth without any impact or sudden load f = 1.0

Normal, but occasional emergency stop f = 1.5

Operation with frequent impact or sudden load f = 3.0

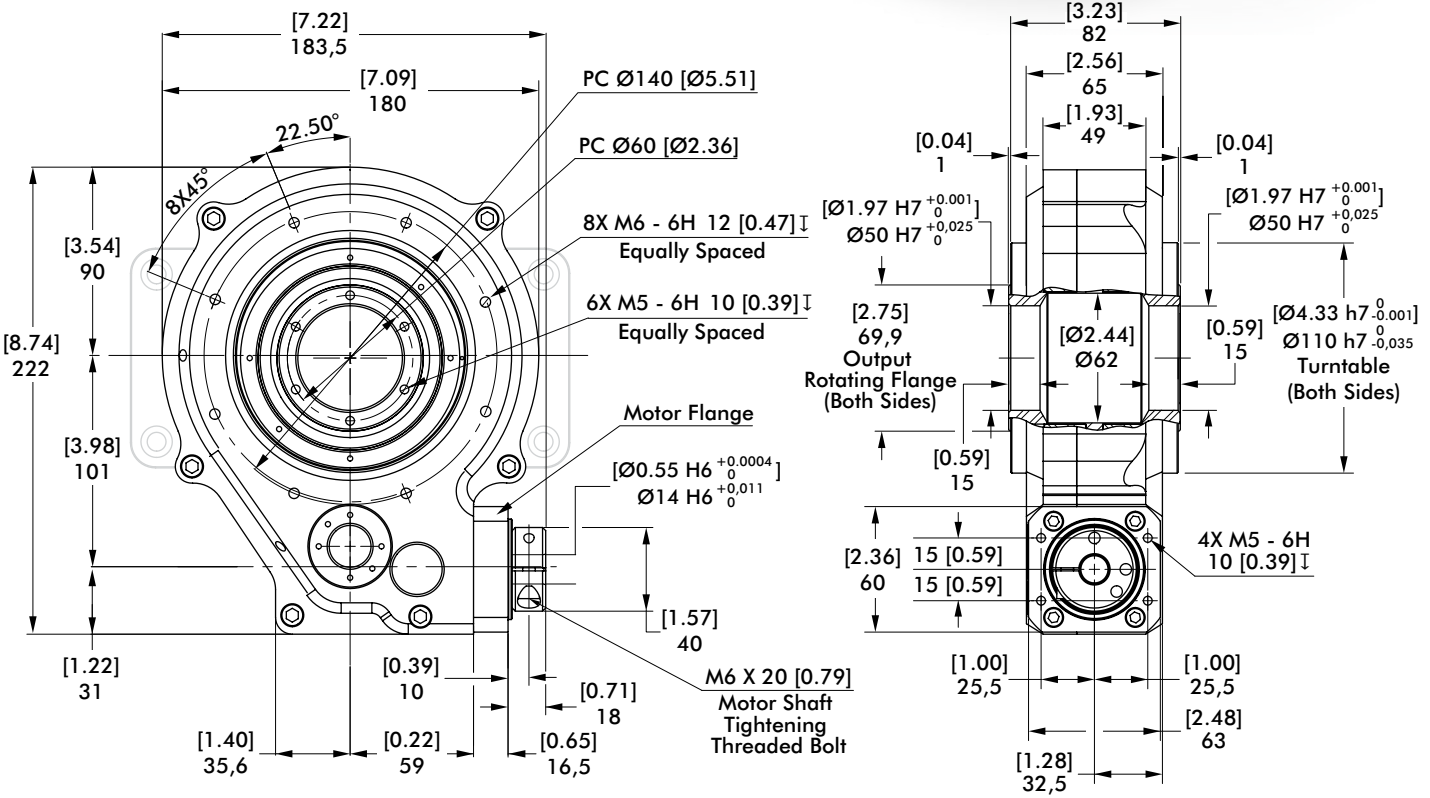
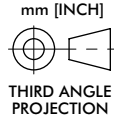
$$\text{Estimated lifetime } L_h = 12000 \left( \frac{T_{op}}{f \cdot T_{mean}} \right)^{\frac{10}{3}} \text{ (hours)}$$

### 5. Selection complete

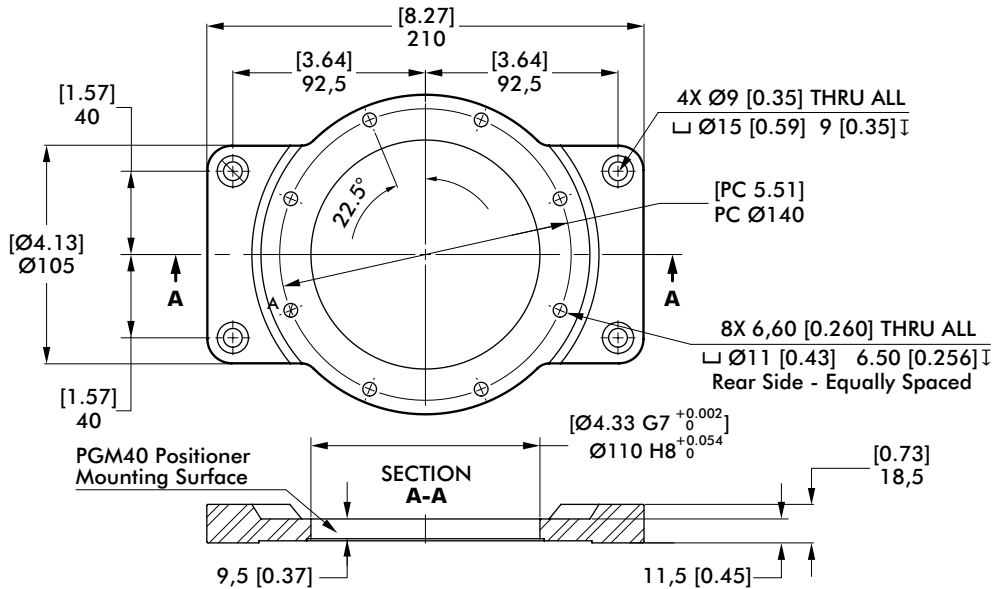
If above values don't satisfy requirements, go back to step 2 and 3 to re-select size.

# PGM40

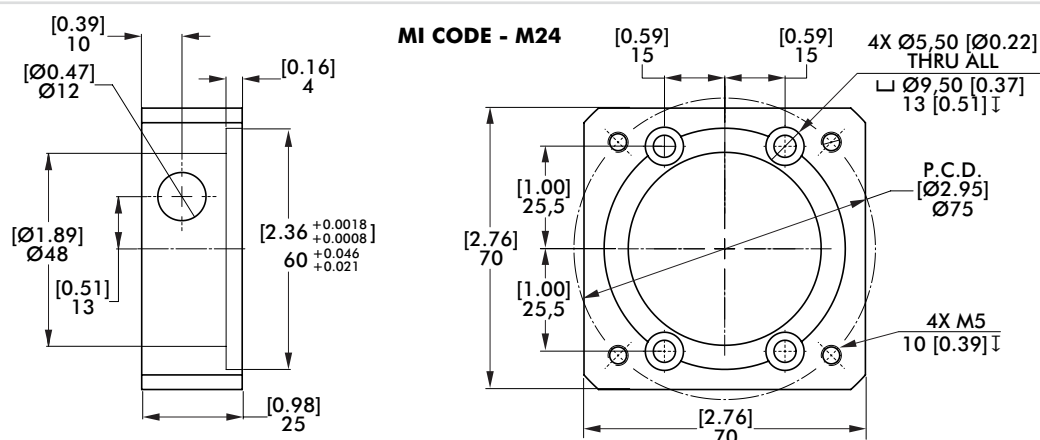
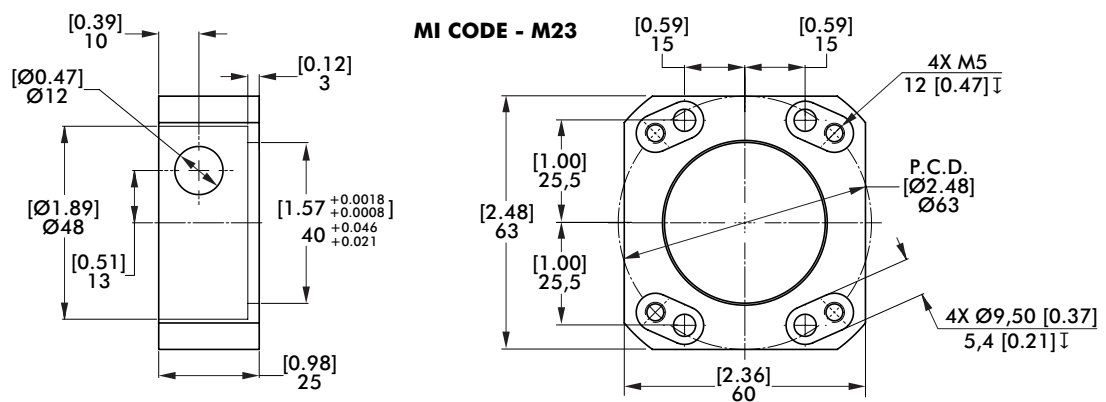
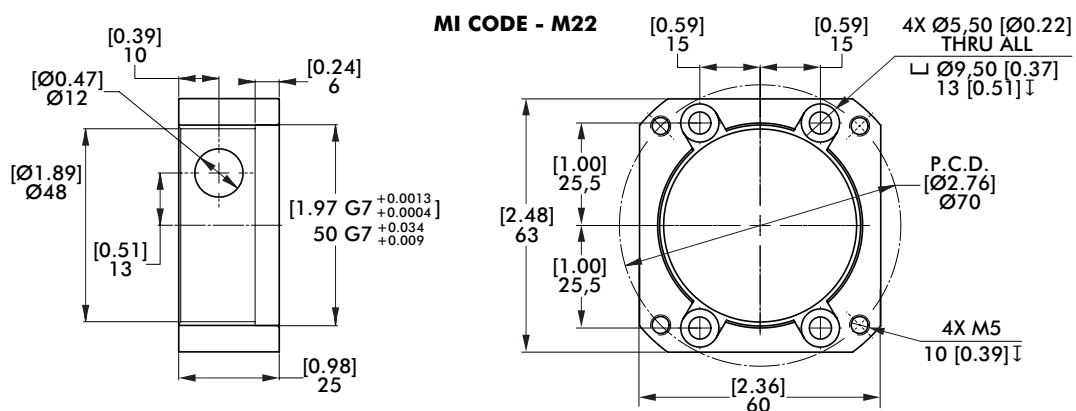
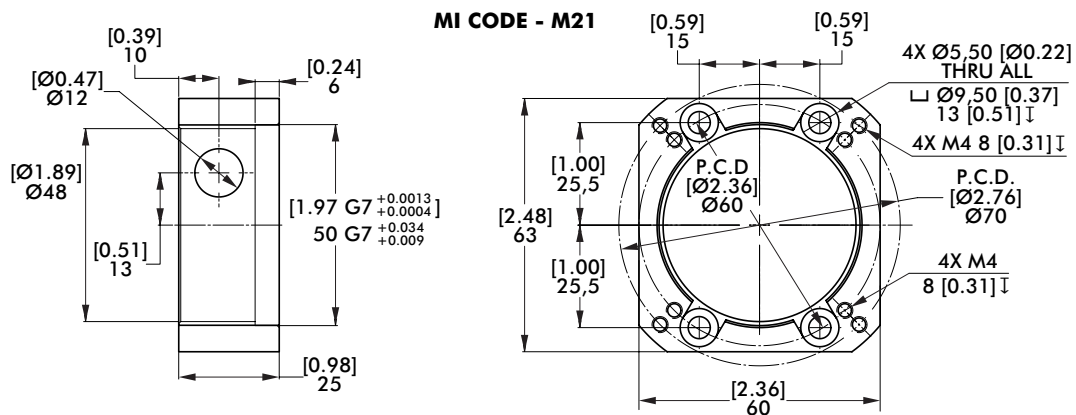
## Parallel Gear Servo Positioner | Dimensions



## Optional Fixture Bracket



## Parallel Gear Servo Positioner | Motor Base (by MI Code) Dimensions





# RSD SERIES

## Rotary Servo Drive | Product Overview



Flange output



Shaft output



Internal shrink disk output



Shrink disk output

## Smarter Indexing

The **CAMCO RSD Rotary Servo Drive** is a zero-backlash, cam-actuated drive compatible with industry-standard servo motors for precise control, efficiency and flexibility.

Universal mounting

Maintenance-free operation

Large output bearing for greater overturning moment capacity

Large thru-hole for accessory lines (electric, pneumatic, etc.)

IP-65 rating

Class 100 rated with Med-Redi preparation

## Features

Designed to accept a variety of servo motors

Preloaded system

- Zero backlash
- High accuracy
- Smooth motion
- Quiet operation
- High speed

Indexing flexibility

- Run different parts on the same indexer
- Variable indexing: reversing, sorting, vary distance with each index

4:1 to 18:1 ratios in a single stage

