

### Linear Positioning

ServoBelt  
 LowBoy Linear Axis  
 LowBoy ServoNut Axis  
 ServoNut  
 KAOS OEM-L & LS Dual Axis  
 KAOS OEM-M Dual Axis

### Rotary Positioning

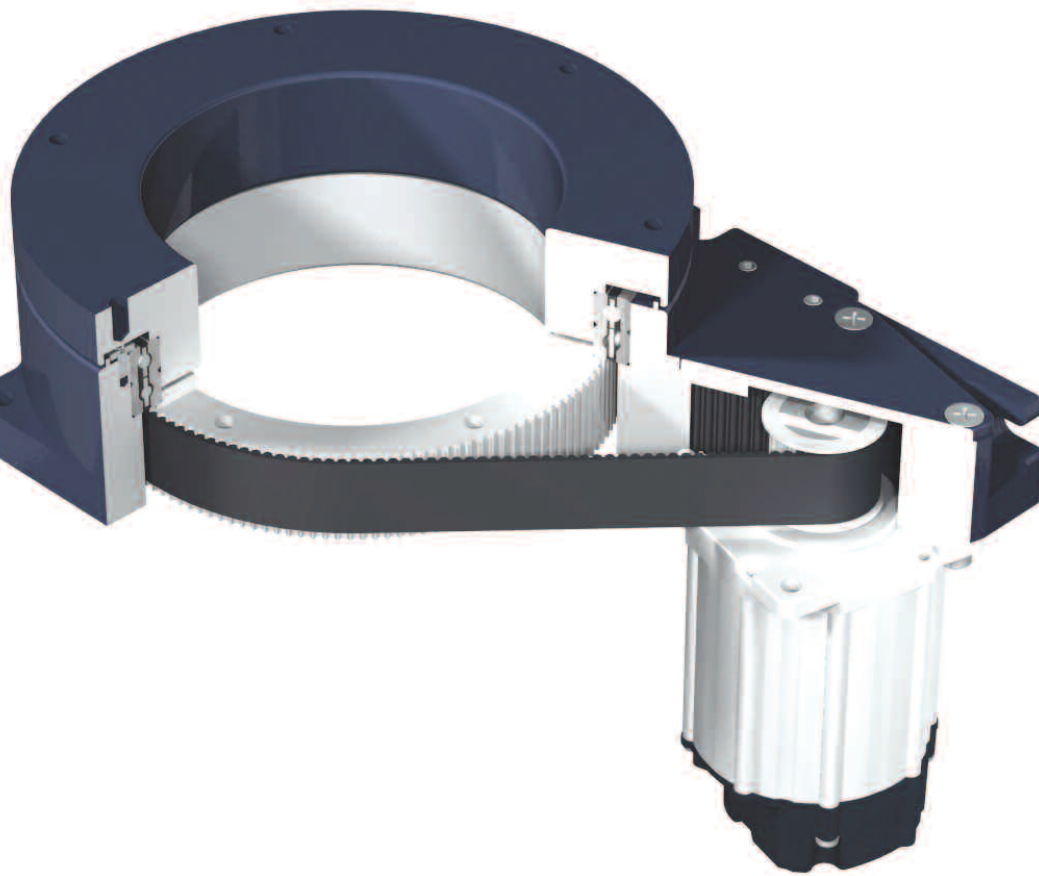
DDT100  
 DDT200  
 DDT200MT  
 ServoBelt Rotary

### Actuators

ServoNut Power Module

### Engineered Solutions

Bell-Everman is more than simply a "catalog stage supplier"—we offer complete, engineered motion solutions.



### Product Ordering

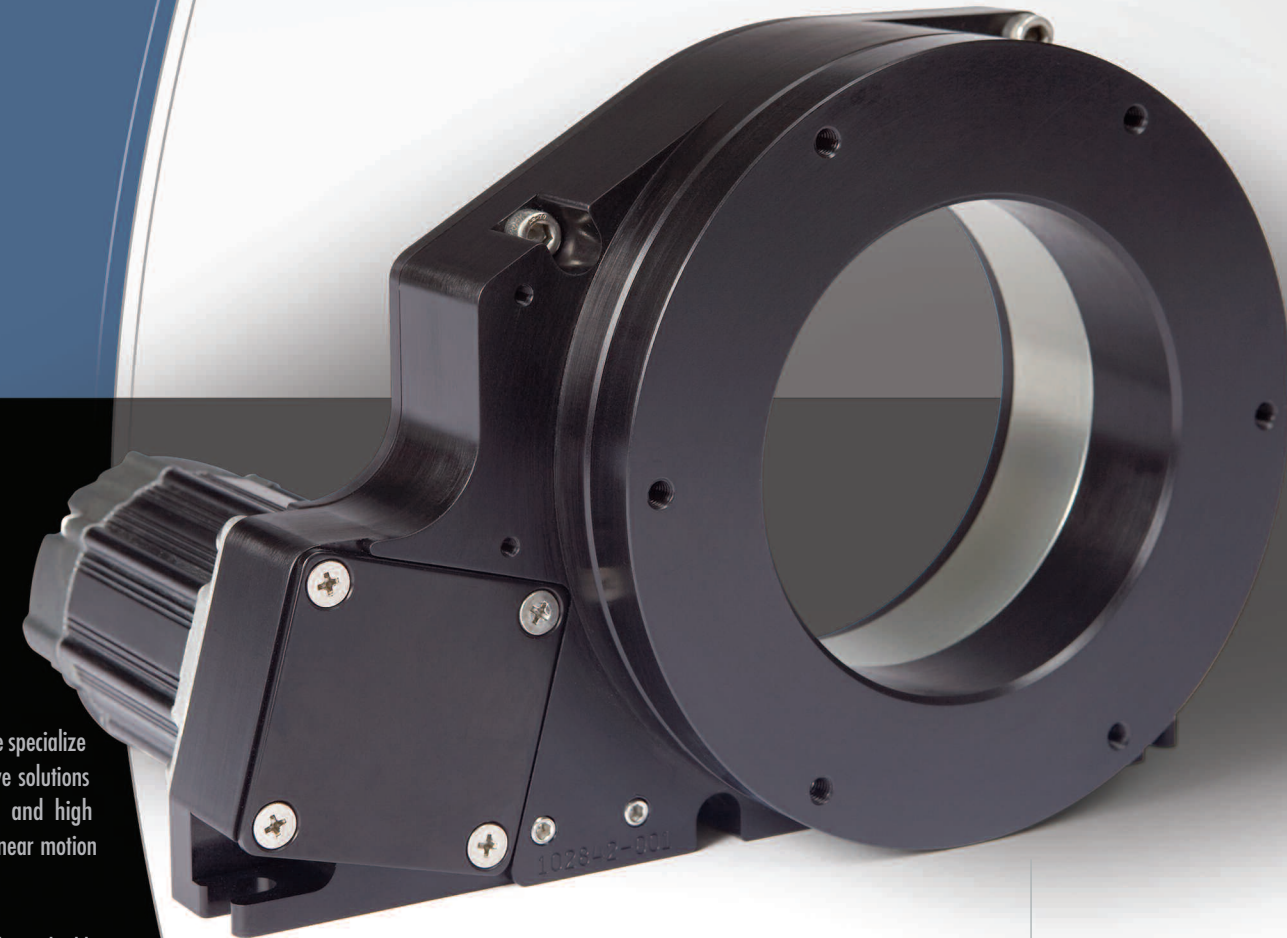
Please call Bell-Everman with your specific length requirements and additional ordering needs. Our technical staff is available to assist you with information specific to your application.

Bell-Everman provides a written one year limited warranty assuring the customer that its products conform to published specifications and are free from defects in materials and workmanship.

Complete terms and conditions and warranty information is available at [www.bell-everman.com/about\\_conditions](http://www.bell-everman.com/about_conditions)

## ServoBelt Precision Rotary Stage

Low-cost axis with accuracy and repeatability, in a clean, low profile package for metrology and medium heavy mechanical processes.



At Bell-Everman, we specialize in delivering innovative solutions for both high speed and high accuracy rotary and linear motion devices.

Each product is viewed as a building block that can be customized for the OEM to obtain optimum performance in a given application. From a single axis of motion to highly integrated mechanisms, the design and engineering team at Bell-Everman will seriously consider the challenges and offer an invaluable solution.

Bell-Everman's strength is in finding and developing these solutions. Our award winning designs have given customers both economy and cutting edge market superiority.

#### Standard features include:

- Geometric accuracy 2.5µm TIR (or better) at any point on stage
- Resolution of 16 arc-sec and repeatability of ±40 arc-sec
- Anodized aluminum construction with SS hardware
- Motor up, motor down and side mount configurations
- Stage top plate easily configured to your specification
  - 4" through hole
  - Optional ring encoder available

## Solid, Robust Design.

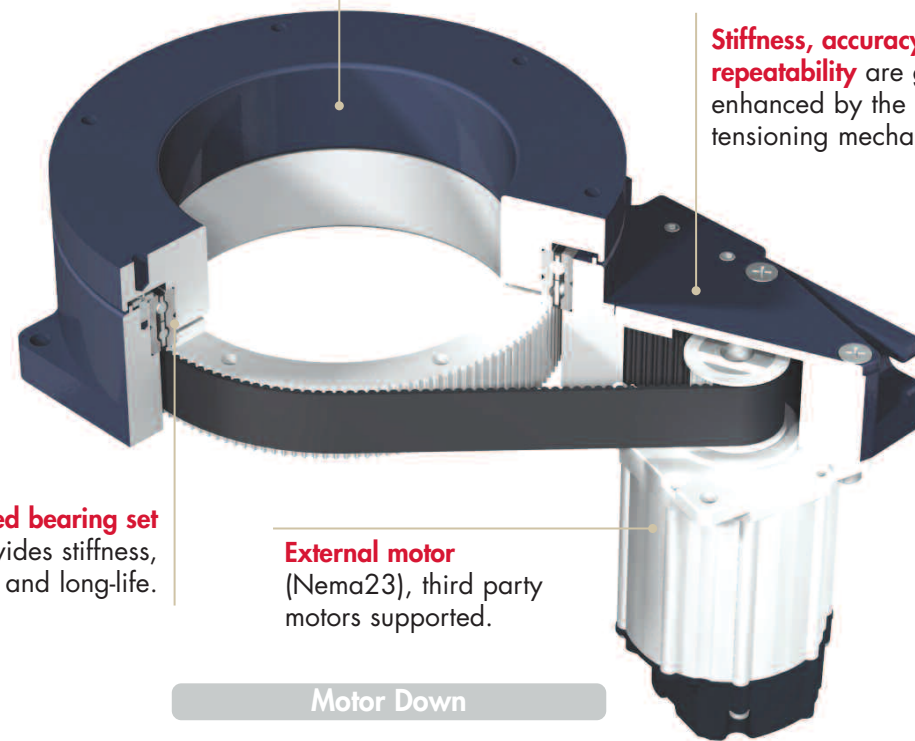
Hi-torque, multiple mounting configurations, and adaptability make the ServoBelt Rotary an attractive, lower-cost rotary axis.

**Large thru hole** facilitates integration with other stages and utilities.

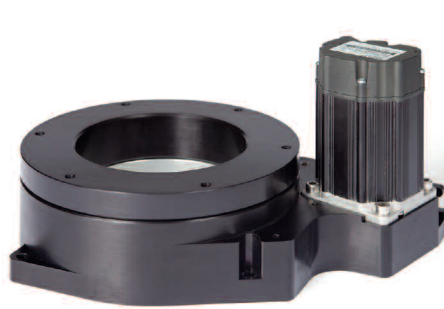
**Stiffness, accuracy, and repeatability** are greatly enhanced by the belt and tensioning mechanism.

**Pre-loaded bearing set** provides stiffness, accuracy, and long-life.

**External motor** (Nema23), third party motors supported.



Motor Down

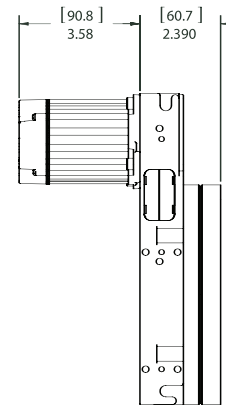


Motor Up

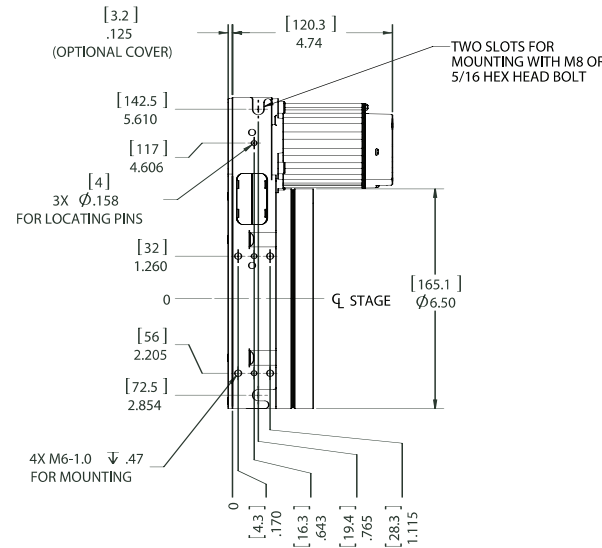


Side Mount  
(Motor on either side)

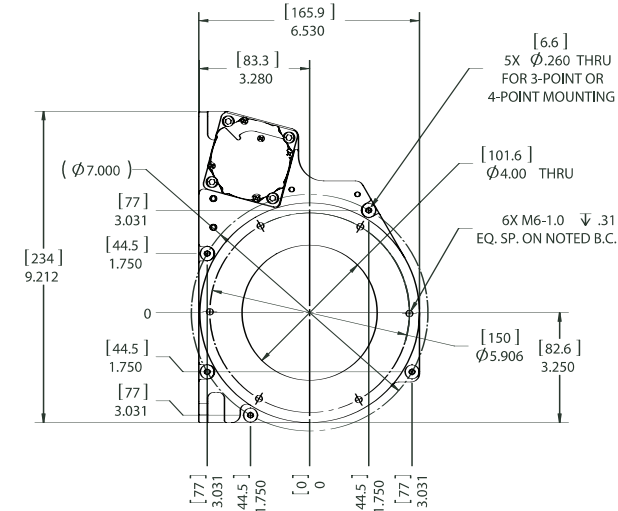
MOTOR DOWN



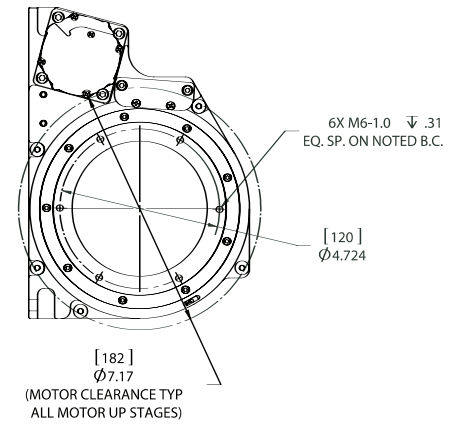
MOTOR UP



STANDARD STAGE



STAGE WITH ENCODER



Power, 3 Ph. Brushless Molex 39-01-2165		
Pin	Color	Signal
1	DRAIN x3	P DRAIN
2	N/A	N/A
3	GRN	COMM R
4	GRN/WHT	COMM S
5	GRY/WHT	COMM T
6	DRAIN x1	E DRAIN
7	BLK	GND
8 *	BLU/WHT	ENC A~
9	16AWG BLK	PHASE R
10	16AWG RED	PHASE S
11	16AWG WHT	PHASE T
12	RED	+VDC IN
13	BRN	ENC I
14	ORN	ENC B
15	BLU	ENC A
16 *	ORN/WHT	ENC B~

\*Signal complement present on motor models configured with differential encoder

## Technical Data

Technical Data	Renishaw RESR-150mm Ring, RGH20 Head					
	Motor 16K CPR	5µm	1µm	0.5µm	0.2µm	0.1µm
Encoder Type	Motor 16K CPR	5µm	1µm	0.5µm	0.2µm	0.1µm
Resolution at Table (counts)	80000	94400	472000	944000	236000	4720000
Radial Runout TIR (µm)	<8					
Wobble TIR (arc-sec)	<16					
Rotational Accuracy (±arc-sec)		23	16	16	16	16
Uni-directional Repeatability (±arc-sec)	40	14	2.9	1.4	0.6	0.4
Bi-directional Repeatability (±arc-sec)	160	28	5.8	2.8	1.2	0.8
Table Resolution (arc-sec)	16	14	2.9	1.4	0.6	0.4
Maximum Axial Load <sup>1</sup> (N)	14000					
Maximum Radial Load <sup>1</sup> (N)	11700					
Mass without Motor (kg)	3.1	3.3				
Continuous Torque, N-m (motor)	4.1 (-2) 5.1 (-3) or 6.6 (-4)					
Maximum Speed (RPM)	1200	1019	637	286	159	89
Low RPM Friction (N-m)	<0.15					
Stiction (N-m)	<0.18					
Rotational Inertia (kg-m <sup>2</sup> )	0.005	0.006				

<sup>1</sup> L10 life in million revs is (basic dynamic/equivalent radial)<sup>3</sup>  
Worst case equivalent radial is greater of actual radial or Radial • 0.39 + Axial • 0.76

arc-sec=µrad • 4.85  
lb=Kg • 2.2  
in-lbf=N-m • 8.85