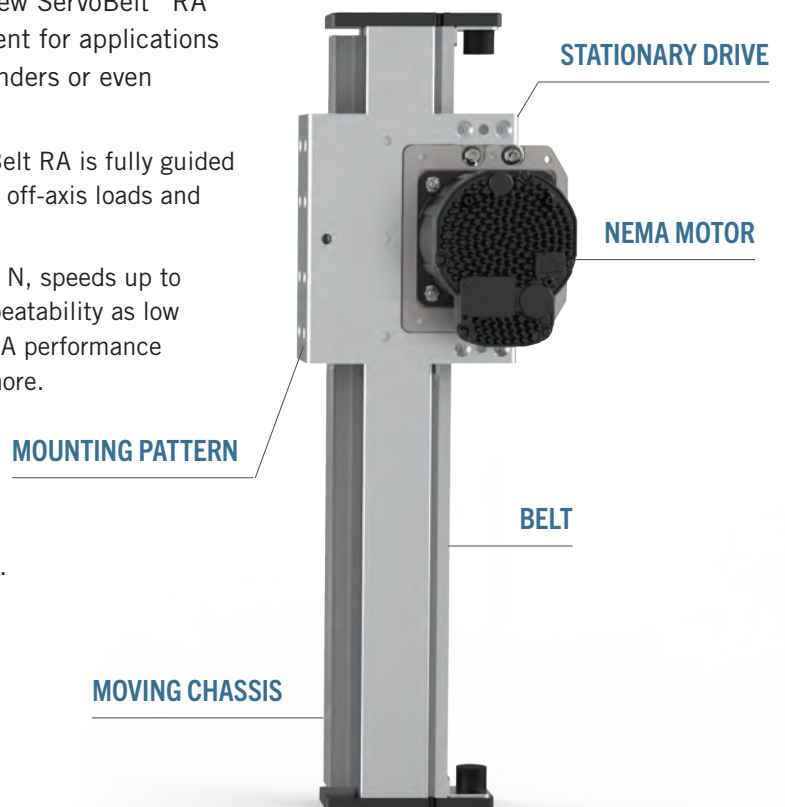# *Bell Everman*

Automation *Redefined*™

New SernoBelt™ Actuator From Bell-Everman

Actuation Redefined.

Based on our proven SernoBelt™ Linear technology, the new SernoBelt™ RA actuator serves as a high-performance, drop-in replacement for applications that have traditionally used rod actuators, pneumatic cylinders or even linear motors.

- **Guided Operation.** Unlike traditional rod actuators, SernoBelt RA is fully guided along the entirety of its stroke, making it more resistant to off-axis loads and more stable in on-axis moves.

- **High Performance, Low Cost.** With linear forces up to 200 N, speeds up to 4 m/s, accuracy to ±4 μm per meter and bi-directional repeatability as low as ±25 μm depending on deceleration profile, SernoBelt RA performance compares favorably to linear motors that cost thousands more.

- **Moving Chassis.** The SernoBelt RA has been built from the ground up for moving chassis installation in both horizontal and vertical Z-axis orientations. Its drive unit features standard or custom mounting hole patterns to make it easy to integrate SernoBelt RA into your machines.

- **Drop-in Replacement.** A range of standard motor offerings enables the replacement of pneumatic cylinders simply by connecting DC power and rerouting servo-valve signals to the SernoBelt RA.

Contact Bell-Everman engineering for more information on integrating SernoBelt RA into your machines.

STATIONARY DRIVE

NEMA MOTOR

MOUNTING PATTERN

BELT

MOVING CHASSIS

DATA SHEET

TECHNICAL SPECIFICATIONS	ServoBelt Actuator Light	ServoBelt Actuator Medium
Type	Rotary Drive Linear, NEMA 23 or user motor	Rotary Drive Linear, NEMA 23, 34 or user motor
Recommended Maximum Payload (lb) Payload x Acceleration = Linear Force	50	100
Linear travel per motor revolution (mm)	75	
Bearing type	Preloaded 4-row recirculating ball, standard or corrosion resistant	
Maximum length (m)	1.2	
Motor type	3-phase brushless servo or user supplied of any type	
Accuracy (µm) Linear accuracy at stage centerline, after two-point temperature scale correction.	Linear optical encoder: ±4/meter Rotary encoder: ±135/full travel	
Uni-directional repeatability (µm) Achievable under ideal conditions.	±10	
Bi-directional repeatability (µm)	±25 to ±125 depending on deceleration profile	
Encoder type and resolutions: rotary (CPR), linear (µm)	16KCPR (NEMA 23) rotary motor encoder; 1µm magnetic linear; 1µm, 0.5µm, 0.2µm 0.1µm optical linear	16KCPR (NEMA 23), 16KCPR (NEMA 34) rotary motor encoder; 1µm magnetic linear; 1µm, 0.5µm, 0.2µm, 0.1µm optical linear
Speed (m/sec)	4	
Max continuous linear force (lbf)	200 lb max pull-out, 100 lb max recommended	
Max pitch and yaw moment for 10^6m @ 2m/sec (N-m)	5.6	
Max roll moment for 10^6m @ 2m/sec (N-m)	5.6	
Moving mass and Chassis mass	Refer to configurator, depends on carriage style and motor selections	
Ultimate dynamic belt life Out-and-back cycles to belt failure at load in Newtons.	30M cycles @ 56N, 20M cycles @ 112N, 15M cycles @ 168N, 2M cycles @ 225N	30M cycles @ 112N, 20M cycles @ 225N, 15M cycles @ 337N, 2M cycles @ 450N
Minimum chassis size (mm)	30 x 30	45 x 45
Bearings style-size (mm)	single-15	single-20