

## Overview of Beltdraulic Linear Actuators

Beltdraulic™ cylinders deliver the force of hydraulics with the speed and efficiency of electric motion—no oil, no leaks, no maintenance. Reinforced belts turn motor torque into smooth, high-force linear movement. Pair with your preferred motor or use RISE’s ready-to-run motor-drive packages for fast, flexible setup.

## Compared to Other Technologies

### Electromechanical Actuators (EMA)

Beltdraulic replaces fragile screws with durable belts, enabling faster speeds and longer strokes without vibration or wear. Permanently sealed bearings mean no lubrication and long, consistent performance.

### Hydraulics (EHA)

Fluid-free design removes pumps, hoses, and leaks. Direct drive and energy regeneration cut power use while built-in feedback delivers precise control of position, speed, and force.



MODEL	MAX STROKE mm (in)	CONT. FORCE kN (lbf)	CONT. MAX SPEED m/sec (in/sec)
BC022	1,000 (39)	20 (4,500)	3 (118)
BC160*	5,000 (197)	160 (35,000)	3 (118)
BC220*	5,000 (197)	220 (49,458)	5 (197)

\*Available in 2026

## Benefits

- Fluid-free: no oil to service or leak
- Proactive actuator health monitoring
- Closed-loop control for smooth, precise motion
- Industrial communications: CAN, Modbus, etc.
- Symmetrical push and pull forces
- Power tailored to your application



### Beltdraulic Railgate 5500

Beltdraulics power the fastest liftgate in logistics. Our fluid-free system is twice as fast as hydraulics, uses half the energy, and eliminates the common causes of field maintenance and downtime.



### US Air Force Material Handling

Beltdraulics enable smooth, drift-free, and precise lifting and positioning of loads up to 7,000 lbs. Engineered for the US Air Force, SuperJammer is ideal for demanding applications that require safety, control, and durability.

## Sample Program Overview

RISE offers a sample cylinder program for you to explore the advantages of Beltdraulic and evaluate how it fits your application. The LITE version operates at speeds of up to 150 mm/s using a 1.5 kW drive package while the PRO version uses a 7.5 kW motor capable of delivering 2 m/s speed. Both versions are built on a 20 kN load class Beltdraulic cylinder and can be customized to support your evaluation requirements.

PARAMETER	LITE	PRO
<b>Rated Load</b>	20 kN	20 kN
<b>Max Speed</b>	150 mm/s	2,000 mm/s
<b>Power, peak</b>	3.5 kW	15 kW
<b>Power, continuous</b>	1.5 kW	7.5 kW
<b>Efficiency, peak</b>	85%	85%
<b>Voltage</b>	48 VDC	48 VDC
<b>Current*, peak</b>	85 A	370 A
<b>Current*, continuous</b>	35 A	185 A

\* Host system must support bidirectional current. Contact RISE if additional power electronics support is required.

## Configurable

- Custom stroke length: 100 - 1,000 mm (4 - 40 in)
  - Cap or Head mounting
  - Failsafe motor brake
  - Rod lock safety catcher
  - Overload protection to 25 kN (5,620 lbf) peak force
  - Additional customizations are possible.
- Contact RISE: [sample\\_sales@riserobotics.com](mailto:sample_sales@riserobotics.com)



## Sample Pro Drive

