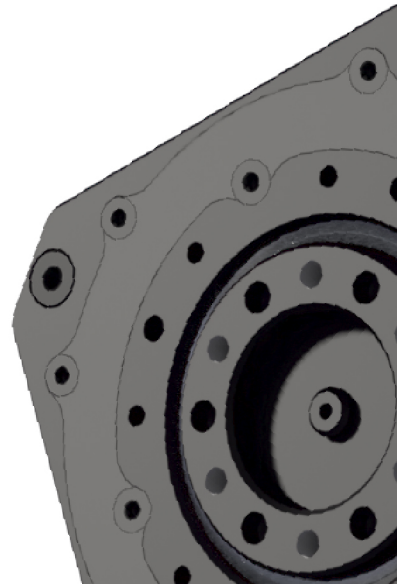
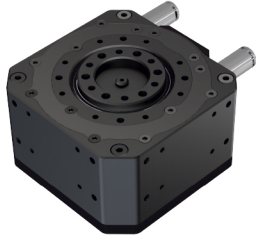


WR

**WESTWOOD
ROBOTICS**

Back-drivable
Electromechanical
Actuator for
Robotics





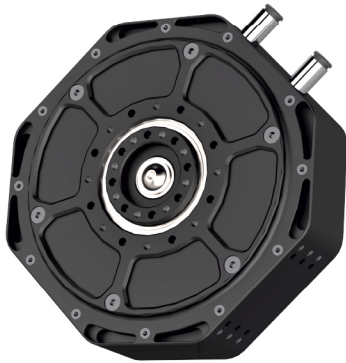
Koala BEAR

Dimensions: 63.5x62x37mm
Weight: 250g
Voltage: 9~33.6V (3~8S)

Stall Torque - 15 sec: 4.2Nm
Stall Torque - 1.5 sec: 10.5Nm
Speed Constant: 27.3RPM/V

Our smallest and lightest actuator optimized for compact applications needing less torque but still force sensing and live compliance capabilities, such as robotic end-effectors, small legged robots, and medical devices.

Available Now



Panda BEAR

Dimensions: 113x113x49.7mm
Weight: 685g
Voltage: 9~50.4V (3~12S)

Stall Torque - 15 sec: 16.8Nm
Stall Torque - 1.5 sec: 33.5Nm
Speed Constant: 14.3RPM/V

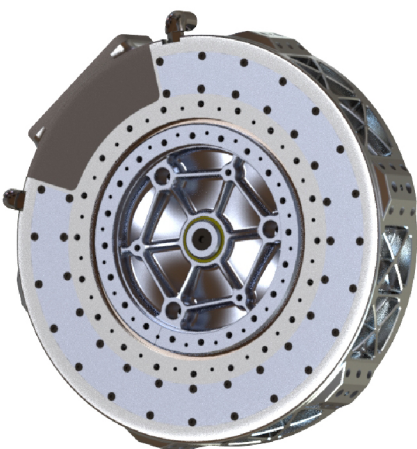
Panda BEAR Plus

Dimensions: 113x113x49.7mm
Weight: 925g
Voltage: 9~50.4V (3~12S)

Stall Torque - 15 sec: 33Nm
Stall Torque - 1.5 sec: 67Nm
Speed Constant: 7.1RPM/V

The Do-It-All actuator that has the right balance of torque, weight, and form factor. Its excellent dynamic performance and payload capability make it well suited for diverse applications ranging from legged mobile robots to service and entertainment robots.

Available Now



Kodiak BEAR

Dimensions: 200x200x50mm
Weight: 2.5kg
Voltage: 9~50.4V (3~12S)

Stall Torque - 15 sec: ~180Nm
Stall Torque - 1.5 sec: ~240Nm
Speed Constant: 3.1RPM/V

The strongest line-up specifically built to provide maximum torque for big applications ranging from walking humanoids to industrial manipulators, while maintaining agile torque sensing and control capabilities.

Contact Us

* Stall Torque - 15 sec is measured under liquid cooled conditions

** Specs of Kodiak BEAR are conservative theoretical estimations and subject to actual product performance



Live Compliance



High Torque Density



Torque Sensing



All-In-One Package



Liquid Cooling

Weight	Speed Constant	Torque Constant	Gear Ratio
250 g	27.3 RPM/V	0.35 Nm/A	9
Stall Torque 15 sec	Stall Torque 15 sec, Liquid Cooled	Stall Torque 1.5 sec	Reflected Inertia
3.5 Nm	4.2 Nm	10.5 Nm	$1.82 \times 10^{-3} \text{ kg/m}^2$

The Perfect Compact Module for Small Systems

Premium ball bearings and high precision gears, this is the powertrain that you can count on.

Reliable Powertrain

Ultra Low Reflected Inertia

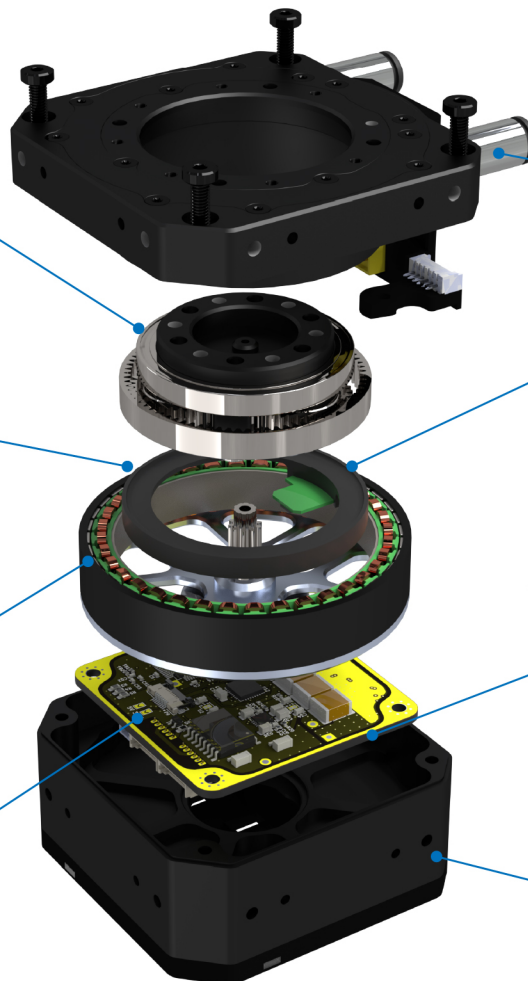
Ultra low reflected inertia provides unparalleled actuation transparency and proprioception.

High Torque Motor

Customized BLDC motor, tailored for ultra-low inertia and extremely high torque.

Integrated Driver

High Performance driver runs internal loop at 4kHz, taking supply voltage up to 32V providing an incredible 700W peak power delivery.



Maintains high performance and stability under intense dynamic loading conditions. Keeps cool and works hard.

Liquid Cooling

Absolute Position

A novel encoder configuration provides accurate absolute output position, and never loses track of it.

Self-monitoring the temperatures of all internal modules and self-protecting from overheating.

Temperature Monitoring

Light, Yet Strong

Optimized with topology, pushing the limits of high strength and low weight.



Professional Proprioceptive Actuator

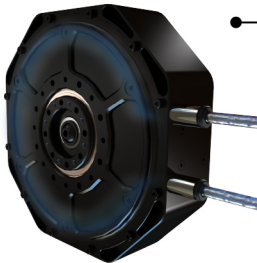
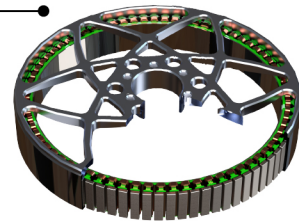


All you expect from a reliable powertrain: Strength, Precision, and Durability:

- Nitrided JIS Grade N8 gears
- High precision deep groove ball bearings
- Precisely machined carriers and housing

Customized BLDC ensures satisfying performance from the core:

- Tailored for dynamic robots: a sweet balance of torque and speed
- Optimized stator with high cooper density and low hysteresis
- N48SH high strength magnets with super operating temperature
- Ultra light rotor design leads to minimal reflected inertia



Keep COOL and work HARD:

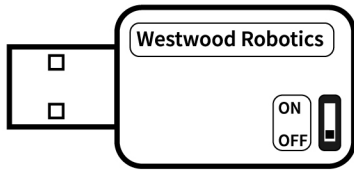
- Built-in ready-to-go liquid cooling feature
- Direct heat dissipation from the driver to housing
- Internal two-stage overheat protection monitoring all key components

Confident control over every "pixel" of the output:

- Robust driver built with quality components
- Take 9~50.4V power supply
- Capable of handling over 30A peak current
- Dual-encoder setup for absolute position output with multi-turn
- 4kHz high speed internal control loop



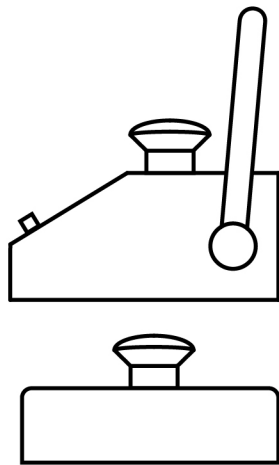
Weight	Speed Constant	Torque Constant	Gear Ratio
685 g	14.3 RPM/V	0.67 Nm/A	6
Stall Torque 15 sec	Stall Torque 15 sec, Liquid Cooled	Stall Torque 1.5 sec	Reflected Inertia
13.4 Nm	16.8 Nm	33.5 Nm	$7.44 \times 10^{-3} \text{ kg/m}^2$



USB2BEAR

- RS485 Protocol
- 8Mbps Super High Speed
- Designed for BEAR
- Generic RS485 Compatible

Extremely fast communication is the basis for real-time control of the robot system. With its exceptional 8Mbps baud rate, USB2BEAR ensures stable real-time high speed communication between the host and BEAR modules.

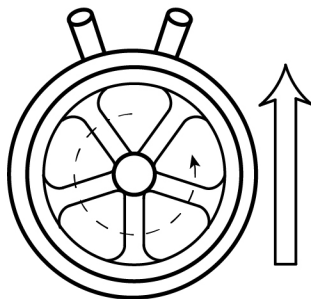


Wireless Estop

- Connects to BEAR Estop Channel
- Generically Compatible
- Up to 60V Power Supply
- 100A Instantaneous Current

Accidents and emergencies are inevitable. It is very important to ensure the safety of users, the environment, and the system itself in an emergency. This Wireless Estop module allows its users to remotely cut off the power of the system in an emergency without approaching the robot.

When working with BEAR, internal damping brake can be enabled without cutting the power upon emergency, making it easier for system debugging while ensuring safety.



Miniature Turbine Pump

- High Fluid Pressure
- Light & Compact
- Designed for On-board Robot Actuator Cooling

Sufficient cooling is essential to ensure stable and efficient output of the actuators on a robot, especially during high-power operations.

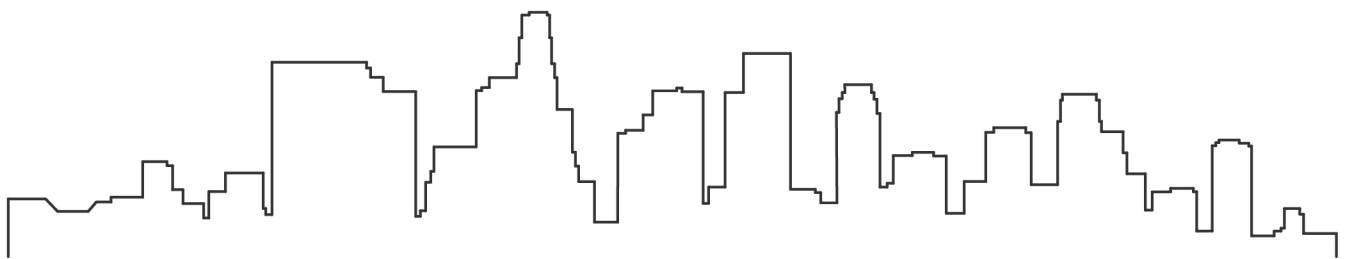
This Miniature Turbine Pump is specially designed for robot on-board liquid cooling and can automatically balance between flow and pressure. It is ultra compact and weighs only 60g, making it the best choice for dynamic robot systems.

Westwood Robotics Corporation

Founded in 2018 by a team of passionate roboticists from the Robotics & Mechanisms Laboratory (RoMe-La) at UCLA, Westwood Robotics is an innovative company dedicated in robotic proprioceptive actuators and dynamic general purpose humanoid robot systems.

Our team has years of experience in developing advanced proprioceptive actuators as well as edge-cutting dynamic robotic systems including humanoid robots, quadruped robots, hexapod robots, robotic manipulators, and many others.

BEAR series actuators are our state-of-the-art robotic proprioceptive actuators that present extreme dynamic performance, and feature live torque sensing and compliance control capabilities, covering a wide range of applications from robotic end-effectors to full-size humanoid robots. Currently, our products are being used by multiple leading robotics research institutions as well as industrial partners such as manufacturing, medical, and food industry.



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Bring **Robots** Closer To **People**