

NexBot Robotics PLN122-001 Planetary Gearbox 10:1 Ratio

NexBot
Robotics

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Systems > Gearboxes > Planetary Gearboxes

Overview

The NexBot Robotics PLN122-001 is a high-performance planetary gearbox engineered to deliver superior torque transmission and positional accuracy for industrial robotic systems. This component is designed for applications where precision and reliability are critical, providing a robust solution for controlling robot joint movements with minimal error. Its core function is to reduce speed and multiply torque from an attached servo motor, enabling the controlled, powerful motion required in modern automation. Key to its performance is the exceptionally low backlash, rated at less than 3 arcmin, which translates directly to higher robot repeatability and accuracy in fine manipulation or path-following tasks. The gearbox features a 10:1 gear ratio, providing a balanced blend of speed reduction and torque multiplication suitable for a wide range of loads. With a nominal output torque of 220 Nm, it possesses high torque density, allowing for a compact and lightweight design without compromising on power. This is crucial for integration into robot arms where both space and weight are at a premium. The PLN122-001 is constructed for durability in continuous-duty industrial environments. The internal components feature hardened steel gears to withstand high cyclical loads, while the housing is machined from anodized aluminum for effective heat dissipation and corrosion resistance. Its high radial and axial load capacities ensure long operational life even under significant mechanical stress. This gearbox is frequently deployed in applications such as automated welding, CNC machine tending, high-speed pick-and-place, and precision assembly. The unit is sealed to an IP65 rating, ensuring protection against dust ingress and low-pressure water jets, making it suitable for challenging factory conditions. Installation is streamlined via a standardized mounting flange compatible with a range of NexBot Robotics servo motors.

Technical Specifications

Parameter	Value	Unit
Weight	5.2	kg
Material	Anodized Aluminum 6061-T6 Housing	
IP Rating	IP65	
Country of Origin	IT	
Dimensions	185 x 122 x 122 mm	
Torque	220 Nm	

Safety Notice: This product must be installed and operated by qualified personnel in accordance with applicable safety standards (ISO 10218, IEC 61508).

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