

NexBot Robotics CYC123-007 Cycloidal Gearbox

NexBot
Robotics

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Overview

The NexBot Robotics CYC123-007 is a high-precision cycloidal gearbox designed for demanding industrial robotics applications requiring high torque and exceptional positional accuracy. Its robust cycloidal reduction mechanism provides superior performance compared to traditional planetary gear systems, making it an ideal component for the primary axes of articulated robots and other high-load positioning equipment. The core benefit of the CYC123-007 is its near-zero backlash, consistently measuring less than 1 arc-minute. This characteristic is critical for applications like welding, dispensing, and machine tending, where path accuracy and repeatability are paramount. The low backlash minimizes positioning errors and ensures smooth, consistent motion without jitter. Featuring a high torsional stiffness, this gearbox resists deflection under load, allowing for rapid acceleration and deceleration with quick settling times. This directly contributes to reduced cycle times and increased throughput. It is capable of handling a peak torque of 450 Nm, providing ample power for mid-to-high payload robotic systems. The compact housing, with dimensions of 123 x 123 x 95 mm, offers exceptional torque density, enabling the design of more streamlined and lightweight robot arms without compromising on strength or durability. The CYC123-007 is engineered for longevity in harsh industrial environments. It is a sealed, grease-lubricated unit rated to IP65, protecting internal components from dust and water ingress. Installation is straightforward, with standardized mounting patterns for integration with compatible NexBot Robotics servo systems. This gearbox is a field-replaceable unit intended for maintaining the peak performance and reliability of compatible robotic platforms.

Technical Specifications

Parameter	Value	Unit
Weight	5.2	kg
Material	High-Carbon Alloy Steel	
IP Rating	IP65	
Country of Origin	IT	
Protocol	PROFINET	
Dimensions	123 x 123 x 95 mm	
Reach	3,200 mm	

Parameter	Value	Unit
Payload	250 kg	
Axes	6	
Repeatability	±0.08 mm	
Torque	450 Nm	

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