

NexBot Robotics CYC123-005

Cycloidal Gearbox 1200 Nm

NexBot
Robotics

SKU: NXB-GBX-CYC123-005 | Category: Drive Systems > Gearboxes > Cycloidal Gearboxes

Overview

The NexBot Robotics CYC123-005 is a high-precision cycloidal gearbox engineered for demanding industrial robot applications requiring high torque, exceptional accuracy, and zero backlash. This component is a core element of the robot's drive system, designed to provide smooth, reliable motion control for major axes in articulated robots. Its robust construction and advanced design principles ensure long operational life under continuous, heavy-duty cycles. The key feature of the CYC123-005 is its cycloidal reduction mechanism, which offers significant advantages over traditional planetary or harmonic gear systems. This design provides a high reduction ratio of 121:1 in a compact form factor, enabling powerful torque output from a smaller package. The rolling contact of its internal components minimizes friction and wear while distributing load across multiple teeth simultaneously. This results in an exceptional shock load capacity, capable of withstanding momentary impacts up to five times its rated torque without damage, a critical attribute in applications with frequent starts, stops, and direction changes. With a backlash of less than 1 arc-minute, this gearbox ensures superior positional accuracy and repeatability for the robot arm. This level of precision is essential for applications such as arc welding, laser cutting, and high-speed assembly, where path deviation can lead to product defects. The high torsional stiffness of the CYC123-005 minimizes wind-up, allowing for faster acceleration and shorter settling times, which directly translates to improved cycle times and higher productivity. The unit is fully enclosed with robust environmental sealing to protect internal components from dust and fluid ingress in harsh factory environments. Installation of the CYC123-005 should be performed by a certified technician as part of a scheduled maintenance or repair procedure. It is designed as a direct-fit replacement for specified joints on compatible NexBot Robotics systems, ensuring seamless integration. Proper alignment and lubrication are critical to achieving the expected performance and lifespan.

Technical Specifications

Parameter	Value	Unit
Weight	18.5	kg
Material	Forged Steel Alloy / Aluminum Housing	
IP Rating	IP65	
Country of Origin	IT	
Dimensions	210 x 210 x 115 mm	

Parameter	Value	Unit
Torque	1200 Nm	

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