NexBot Robotics 721-001 HTD 5M Timing Belt

NexBot Robotics

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Overview

The NexBot Robotics 721-001 is a high-performance timing belt engineered for precise power transmission and motion control in NexBot industrial and collaborative robots. This component is critical for maintaining the positioning accuracy and repeatability of robotic joints, ensuring consistent operational performance in demanding automation tasks. Constructed from a durable neoprene body, the belt offers excellent resistance to degradation from oils, chemicals, and ozone, extending its service life in typical industrial environments. Its core strength comes from fiberglass tensile cords, which provide high tensile strength and minimal elongation under load. This construction prevents stretching over time, which is essential for maintaining system calibration and avoiding positioning errors. The belt's tooth profile is a High Torque Drive (HTD) 5M pitch (5 mm), designed for positive, non-slip engagement with drive pulleys. This curvilinear tooth shape distributes stress more evenly than traditional trapezoidal profiles, allowing for higher torque transmission and reducing the risk of tooth shear under rapid acceleration or deceleration. Key applications for the 721-001 belt include driving the wrist axes (J4, J5, J6) in articulated and collaborative robots, where precise orientation of end-of-arm tooling is paramount. It is also utilized in the Z-axis and rotational axes of SCARA robots for pick-and-place, assembly, and dispensing operations. The belt's dimensional stability, with a pitch length of 975 mm and a width of 15 mm, ensures a direct fit for specified NexBot models, simplifying maintenance procedures. Regular inspection for signs of wear, such as cracking, fraying, or tooth degradation, is recommended as part of a scheduled preventive maintenance program. Replacing the timing belt at designated service intervals or upon visible wear is crucial for preventing unexpected downtime and maintaining the robot's kinematic accuracy. Installation requires proper tensioning to ensure optimal performance and longevity; using a dedicated tension gauge is advised to achieve factory specifications. This genuine OEM part guarantees compatibility and restores original equipment performance.

Technical Specifications

Parameter	Value	Unit
Weight	0.15	kg
Material	Fiberglass-Reinforced Neoprene	
Country of Origin	DE	
Dimensions	975 mm Length × 15 mm Width	

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