# User Manual: NexBot Robotics 722-001 Pulley and Sprocket Set (24T/48T)

SKU: NXB-GEN-722-001 | Version: 1.0 | Brand: NexBot Robotics

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## 1. Safety Information

> **READ ALL SAFETY INSTRUCTIONS BEFORE OPERATION.** Failure to follow safety procedures may result in serious injury or equipment damage.

## 2. Product Overview

The NexBot Robotics 722-001 is a matched pulley and sprocket set designed for reliable power transmission and speed reduction in high-demand robotic joint applications. This set ensures synchronized, backlash-free motion transfer, which is critical for maintaining the positional accuracy and repeatability of NexBot robotic arms. It serves as a direct-fit replacement component, manufactured to original equipment specifications for seamless integration and performance. Constructed from high-grade S45C hardened steel, both components in this set offer exceptional durability and resistance to wear under continuous industrial use. The robust material choice minimizes tooth deformation over time, preserving the motion profile and extending the service life of the joint assembly. The components are finished with a black oxide coating that provides an additional layer of corrosion resistance, protecting the parts in typical factory environments. Key features of the 722-001 set include a precision-machined 24-tooth pulley and a 48-tooth sprocket, providing a fixed 2:1 reduction ratio. This ratio is ideal for applications requiring an increase in torque and a decrease in speed, such as in the wrist axes (J4, J5) of articulated robots or the Z-axis drive of a SCARA robot. The teeth

are CNC-machined to a high tolerance to ensure perfect engagement with the corresponding timing belt, reducing operational noise and vibration. Both the pulley and sprocket feature a standard 12mm keyed bore for secure mounting onto motor or gearbox shafts, preventing slippage under high torque loads. Installation requires careful alignment of both the pulley and sprocket to prevent premature belt wear. It is essential to ensure that both components are coplanar and that the associated timing belt is tensioned according to the robot's service manual specifications. Regular inspection for tooth wear is recommended as part of a preventative maintenance schedule to maintain optimal robot performance and avoid unplanned downtime. This set is a crucial component for restoring the original performance and precision of compatible NexBot robotic systems.

## 3. Getting Started

## 4. Operation

## 5. Maintenance Schedule

| Interval | Task | Notes |
|---|---|---|

## 6. Troubleshooting

| Symptom | Possible Cause | Solution |
|---|---|---|

## 7. Technical Specifications

| Parameter | Value | Unit |
|---|---|---|
| Weight | 0.8 | kg |
| Material | Hardened S45C Steel | |
| Country of Origin | SE | |