

# Installation Guide: NexBot Drives 442-002 Sanding And Polishing Tool

SKU: NXB-GEN-442-002 | Revision: 1.0 | Category: End-of-Arm Tooling > Deburring & Finishing Tools > Sanding & Polishing

**DANGER:** Disconnect all power sources before beginning installation. Follow lockout/tagout (LOTO) procedures per OSHA 1910.147.

## 1. Required Tools & Materials

- Metric hex key set (M4, M5, M6)
- Torque wrench with compatible sockets
- Digital multimeter
- IO-Link Master device for configuration
- Safety glasses and cut-resistant gloves
- Wire strippers and crimping tool
- Cable ties and management sleeves
- Compressed air line with regulator (for cleaning)

## 2. Pre-Installation Checks

1. Verify the robot arm's mounting flange pattern is compatible with the NexBot Drives 442-002 tool.
2. Ensure the robot's payload capacity exceeds the tool's weight of 6.8 kg.
3. Confirm a stable 24VDC power source is available at the robot arm.
4. Inspect the NexBot Drives 442-002 for any signs of shipping damage before unboxing.
5. Ensure the work cell is in a safe state, with power locked out to the robot controller.
6. Verify the correct IO-Link Device Description (IODD) file for the NXB-GEN-442-002 is available.

## 3. Installation Procedure

### Step 1: Mechanical Mounting

Carefully lift the 6.8 kg tool and align it with the robot's end-of-arm flange. Insert and hand-tighten the provided mounting bolts.

**Warning:** Use proper lifting techniques or a lifting aid to handle the tool's weight. Dropping the tool can cause severe damage or injury.

### Step 2: Torqueing Mounting Bolts

Using a calibrated torque wrench, tighten the mounting bolts in a star pattern to the specified torque value found in the robot's documentation. This ensures a secure and vibration-resistant connection.

### Step 3: Electrical Connection

Connect the tool's M12 power connector to the robot's 24VDC power supply. Ensure the connection is secure and the locking ring is fully engaged to maintain the IP65 rating.

**Warning:** Ensure power to the robot is locked out and tagged out before making any electrical connections.

### Step 4: Communication Link

Connect the tool's M12 communication connector to the robot's IO-Link master port. Route the cable alongside other robot utilities, ensuring it has enough slack for all robot movements without binding.

### Step 5: Dust Extraction/Cooling Air Line

If applicable, connect a regulated, clean, and dry compressed air line to the designated port on the tool. This is used for debris

removal and supplemental cooling during high-duty cycle operations.

**Warning:** Do not exceed the maximum recommended air pressure. Over-pressurization can damage internal seals.

### **Step 6: Install Abrasive Media**

Select the appropriate sanding or polishing media for your application. Securely attach it to the tool's backing pad, ensuring it is centered to prevent imbalance and vibration.

### **Step 7: Configure Robot Payload and TCP**

In the robot controller software, create a new tool definition. Enter the tool's weight (6.8 kg), center of gravity, and precise Tool Center Point (TCP) dimensions (overall dimensions 255 x 150 x 150 mm) to ensure accurate motion.

**Warning:** Incorrect payload or TCP settings will result in inaccurate movements, poor performance, and potential robot faults.

### **Step 8: IO-Link Configuration**

Power on the robot and IO-Link master. Use the engineering software to scan for the device and assign the correct IODD file. Verify that process data such as force, speed, and status are readable.

## **4. Post-Installation Verification**

1. Power on the robot and jog each axis slowly to its limits to verify cable routing and check for snags.
2. Command the tool's spindle to rotate at a low speed and listen for any unusual noises or vibration.
3. Verify in the controller software that you are receiving live data from the tool over IO-Link.

4. Test the active force compliance by gently pushing against the tool and observing the response in the software.
5. Run a simple test program without contacting a workpiece to ensure all programmed paths are correct.
6. Check for any fault indicators or error messages on the robot teach pendant or HMI.

**Note:** For technical support, contact your authorized service provider or visit <https://robotics.barca.group/support>.