# Installation Guide: NexBot Drives DC112-006 Dc Servo Motor

SKU: NXB-SRV-DC112-006 | Revision: 1.0 | Category: Drive Systems > Servo Motors > DC Servo Motors

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

## 1. Required Tools & Materials

- Torque wrench with metric sockets
- Metric hex key set (Allen wrenches)
- Digital multimeter
- Wire stripper and crimping tool for power lugs
- PROFINET M12 D-coded crimping tool or pre-made cable
- Small flat-head screwdriver for terminal blocks
- Safety glasses and insulated gloves
- Mounting bolts (size appropriate for application, e.g., M5)

## 2. Pre-Installation Checks

1. Verify the received product SKU is NXB-SRV-DC112-006 and inspect for any shipping damage.
2. Ensure the mounting surface is flat, clean, and rigid enough to support the motor's 2.1 kg weight and operational torque.
3. Confirm that the servo drive controller is compatible with a 48VDC brushed DC motor and supports the PROFINET protocol.
4. Check that the ambient temperature and environmental conditions are within the operational limits for an IP65 rated device.
5. Verify that all power sources are de-energized and locked out before beginning installation.
6. Review the mechanical drawings to confirm clearance for the motor body (185 x 60 x 60 mm) and cable routing.

## 3. Installation Procedure

### Step 1: Mechanical Mounting

Securely mount the NexBot Drives DC112-006 motor to the prepared surface using appropriate length mounting bolts. Tighten the bolts in a star pattern to the recommended torque specification for the bolt size to prevent stress on the anodized aluminum housing.

> **Warning:** Ensure the mounting surface is perfectly flush. An uneven surface can cause misalignment, leading to premature bearing failure.

### Step 2: Shaft Coupling

Align the motor shaft with the load shaft and install the coupling. Ensure there is no angular or parallel misalignment, as this can cause vibration and excessive wear.

> **Warning:** Do not hammer or apply excessive force to the motor shaft when installing couplings or pulleys.

### Step 3: Grounding Connection

Connect a dedicated grounding wire from the motor's grounding terminal to the system's earth ground. A proper ground connection is essential for safety and noise immunity.

### Step 4: Power Cable Connection

Connect the 48VDC power leads from the servo drive to the motor's power terminals. Ensure the polarity is correct and that the wire gauge is sufficient for the motor's peak current draw. Secure connections tightly.

> **Warning:** Incorrect voltage or reverse polarity can permanently damage the motor windings and connected drive electronics.

### Step 5: Encoder/Feedback Connection

Connect the motor's feedback cable to the corresponding input on the servo drive. Ensure the connector is fully seated and secured to maintain signal integrity.

### Step 6: PROFINET Network Connection

Connect a shielded PROFINET cable to the motor's M12 communication port. To maintain the IP65 rating, use a compatible IP65-rated M12 connector and ensure it is properly tightened.

> **Warning:** Improperly shielded or terminated communication cables can lead to network errors and unreliable operation.

### Step 7: Cable Strain Relief and Routing

Secure all cables to prevent strain on the connectors. Route cables away from sources of high heat or potential physical damage. Maintain a minimum bend radius for all cables as specified by the cable manufacturer.

## 4. Post-Installation Verification

1. Double-check all electrical connections for tightness and correct polarity.
2. Verify the motor chassis has a low-resistance path to earth ground using a multimeter.
3. Temporarily disconnect the motor from the load to perform an initial no-load test.
4. Power on the servo drive and establish a PROFINET connection. Verify the motor is recognized on the network.
5. Perform a low-speed jog command to confirm the direction of rotation is correct. If incorrect, swap motor power leads or adjust drive parameters.
6. Listen for any unusual noises or vibration during the initial no-load test.

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