

RB-Phi-266
12V, 2.8A, 3333 oz-in NEMA-23 Bipolar Stepper Motor

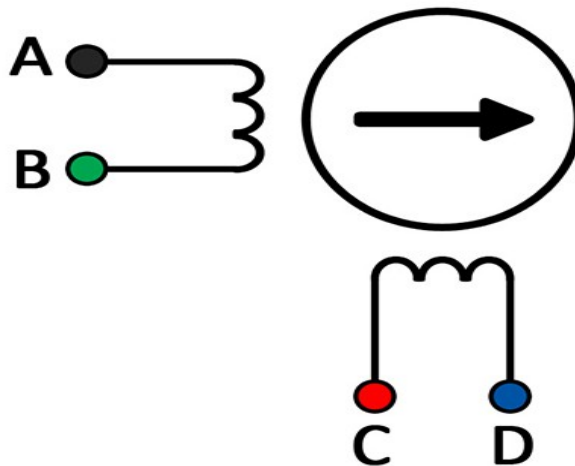


This NEMA-23 motor has an integrated Planetary gearbox with a 76 49/64 :1 ratio. It comes with the rear shaft exposed, so you can mount an encoder or shaft coupler. When connected to a Bipolar HC, the 3334 has a maximum speed of 25 RPM. At the output of the gearbox, the step angle approximately 0.023°. When using the step angle in calculations, you should derive the exact step angle by dividing 1.8° by the gearbox reduction ratio.

At 2.8 Amps, this stepper motor can produce a maximum torque of 960 kg-cm. However, the gearbox is only rated for 240 kg-cm of continuous torque. Loading this gearbox stepper beyond the torque rating of the gearbox will shorten its useful life.

Motor Controller and Connection

The stepper motor connects to a bipolar motor controller. The following diagram shows how to connect the motor wires to the board connectors to produce a clockwise rotation in the stepper motor when increasing position. To wire for counter-clockwise rotation when increasing position, reverse the red and blue wires.



Note: Make sure to unplug the power cord from the motor controller before switching wires around.

The rear shaft of this motor can be equipped with the HKT22 Optical Encoder for applications where you need to keep track of the exact position, velocity, or acceleration of the motor.

Motor Properties

- Motor Type: Bipolar Stepper
- Step Angle: 0.023°
- Step Accuracy: $\pm 5\%$
- Holding Torque: 240 kg·cm
- Rated Torque: 240 kg·cm
- Maximum Speed (w/Motor Controller): 25 RPM
- Acceleration at Max Speed (w/ Motor Controller): $1E+06$ 1/16 steps/sec²

Electrical Properties

- Recommended Voltage: 12 V DC
- Rated Current: 2.8 A
- Coil Resistance: 900 m Ω
- Phase Inductance: 2.5 mH

Physical Properties

- Shaft Diameter: 12 mm
- Rear Shaft Diameter: 3.9 mm
- Mounting Plate Size: NEMA - 23
- Weight: 1.5 kg
- Number of Leads: 4
- Wire Length: 300 mm

Gearbox Properties

- Gearbox Type: Planetary
- Gear Ratio: 76 49/64 : 1
- Backlash Error: $1\ 1/2^\circ$
- Maximum Strength of Gears: 240 kg·cm
- Shaft Maximum Axial Load: 100 N
- Shaft Maximum Radial Load: 250 N