

# Instruction Manual

## omegon



## **Omegon® EQ-320 RA tracking motor**

English version 10/2023/2.0 B Art. No. 65804

The complete or partial reproduction of the contents of this document in any form other than for private use is expressly prohibited.  
Subject to alterations and errors. All texts, images and trademarks are the property of NIMAX GmbH.

## **Omegon® EQ-320 RA tracking motor**

Thank you for choosing our EQ-320 tracking motor for the right ascension axis.

Equatorial mounts are tracked in the right ascension axis (hour axis); this motor set can therefore help you to comfortably observe the sky and gain your first experiences with astrophotography.

The tracking motor is connected to the worm shaft by means of a flexible shaft coupling instead of the flexible shaft for the manual fine motion drive.

This is quickly done and the mount is ready for use in a minimum amount of time.

### **1. The parts of the motor set upgrade**

Here you can see the different parts of the motor assembly.

1. Hand controller with connecting cable;

2. Motor with mounting bracket and flexible shaft coupling (pre-assembled);

3. Battery pack for 8 x AA 1.5V batteries (batteries not included);

4. Connecting cable for connection of the hand controller;

5. Connecting cable for connection to the motor;

6. Allen key and hand controller bracket for simple attachment to the tripod leg (not illustrated);

7. Handbox holder for easy attachment to the tripod leg.



Figure 1

### **2. Installing the motor set on the EQ-320 mount**



Figure 2

1 Mounting screws, 2 Union nut,  
3 Flexible shaft

1. First, disconnect the flexible shaft (3, fig. 2) from the shaft of the RA worm gear drive by loosening the union nut (2, fig. 2) and pulling off the flexible shaft.

2. Pull out the small roll pin (fig. 2) fitted through the worm shaft with a small pair of pliers and remove the union nut as well.

3. Remove the two mounting screws (1, fig. 2) from the housing of the mount. Align the tracking motor with its mounting bracket with the threaded holes of the mounting screws and at the same time push the shaft coupling onto the shaft of the RA drive screw.

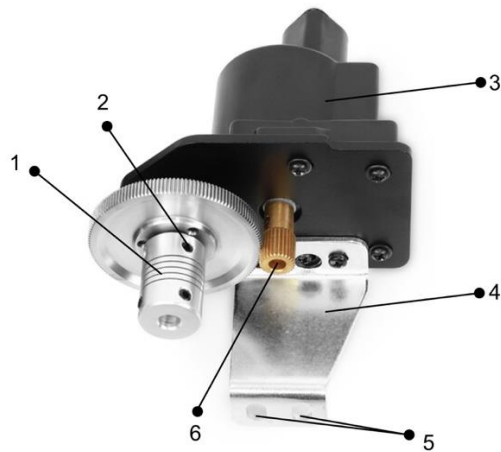


Figure 3  
 1 Shaft coupling, 2 Clamping screws, 3 Motor,  
 4 Mounting bracket, 5 Threaded holes for mounting screws,  
 6 Motor drive shaft

Align the tracking motor with its mounting bracket with the threaded holes of the mounting screws and at the same time push the shaft coupling onto the shaft of the RA drive screw. First ensure that the clamping screws of the shaft coupling (1, fig. 3) are not protruding into the bore of the coupling.

4. Now screw the two mounting screws into the threaded holes provided on the mount. Attention: Do not tighten the mounting screws at this stage.

5. Clamp the flexible shaft coupling (1, fig. 3) using the clamping screws (2, fig. 3) of the shaft coupling, then carefully tighten the mounting screws. (1, fig. 2)

6. Now connect the power supply to the motor set and your mount is ready for use.

## 2. Inserting the batteries



1. Remove the cover of the battery compartment and place 8x AA 1.5V batteries into the respective slots. Rechargeable batteries can also be used, although they generally have a lower capacity than normal batteries.

2. Ensure that the flat contact side of the batteries, i.e. the negative terminal, is facing towards the spiral springs.

3. Alternatively, a mains power pack with at least 1.5A and 12V and a matching plug can be used. Mains power packs are available with a variety of plug adapters. Powerbanks with 12V output can also be used.

4. Connect the hand controller to the battery pack and test the function by switching on the tracking system from the battery pack.

The red LED (2, fig. 4) on the hand controller now lights up, indicating that the tracking motor is in operation. It is now permanently in operation, and once attached to the mount it compensates for the Earth's rotation.

#### NOTE

**Align the equatorial mount as accurately as possible with the north celestial pole. The less accurately the mount is aligned, the quicker your targets run out of the field of view again.**

When fully assembled, the tracking motor looks like the one shown on the right.



### 3. Operation of the motor set, direction buttons and switching between north and south operation

In the Northern hemisphere, the N/S switch (3) must be in position N for North. In the Southern hemisphere it should then be in position S.



Figure 4  
1 ON/OFF, 2 Red LED, 3 North/South switch, 4 Keypad for motor speeds, 5 Connection for battery compartment

The permanent tracking speed is the “single sidereal”. With the Omegon motor set for the EQ-320 mount, the motor speed can also be set to further speeds, 2x, 4x sidereal. That considerably simplifies the search for objects, as you can roughly adjust the telescope to the position of the desired object in the sky using the eyepiece in the telescope, and then find the object or allow the telescope to find the object using the speed buttons.

The function in detail:

- stops the motor - the object appears to move slowly out of view due to the earth's rotation.
- ▶ makes the motor run at double speed - reverse effect as ■
- ◀ and ▶ make the motor run back and forth at four times its normal speed.

The speeds are deliberately chosen not to be too fast so that objects do not accidentally move out of view at high magnification.