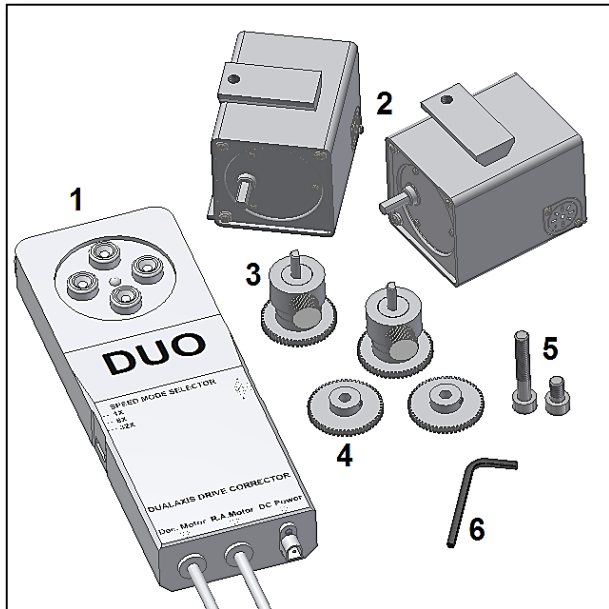


Instructions Manual



Omegon® Motor Duo EQ-500

Congratulations on the purchase of the new Omegon® Motor Duo EQ-500. This dual motor set is compatible with the Omegon® Advanced Equatorial EQ-500 mount. It allows precise tracking of celestial objects and motorized adjustments for precision centring of an object in the field of view. It can operate from the supplied battery pack (12 volt) or from another 12 DC volt power supply. Adjustments can be made up to 32x the sidereal rate by pushing one of the 4 hand-controller buttons.



1. What is included?

1. 12 volt hand-controller;
 2. Two step-motors with gear reduction;
 3. Two R.A. and Dec. gear-with-clutch;
 4. Two motor gears;
 5. Two socket screws to fix motors;
 6. One Allen wrench;
- A screw driver (not shown);
Battery pack (not shown – batteries not included).

2. Getting started

to operate the *Duo EQ-500* a 12 volt DC power supply is required. We recommend using the supplied Battery Pack – it takes 8x 1.5 volt LR20 batteries (not supplied). As an alternative we also recommend using a field battery. Field batteries last longer and can be recharged easily.

2.1. Understanding the hand controller.

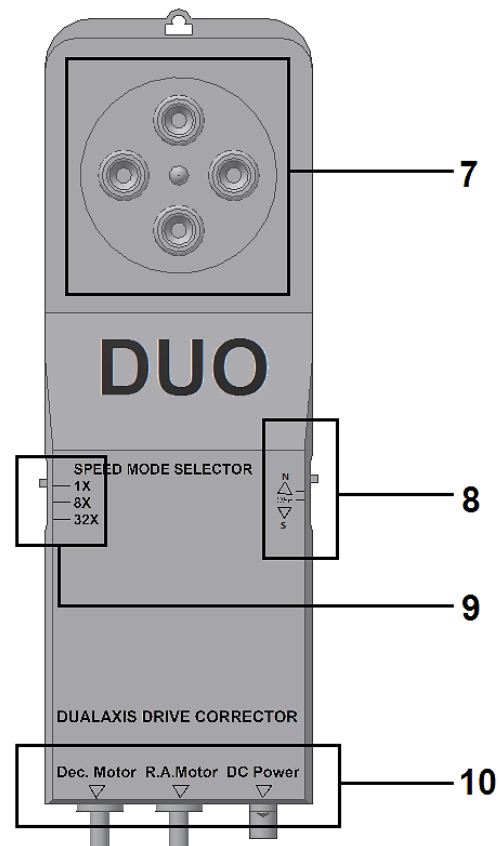
On the hand-controller there are two selectors, one on

Parts List.

each side. Selector on the right side (#8 Figure on the left) allows to choose between North and South Hemispheres. On the opposite side 3 different sidereal speeds can be chosen from: 1x, 8x and 32x. On the top of the hand controller there is a LED and 4 push-buttons (#7 Figure on the left), the LED lights up when one of the 4 buttons is pushed. Left and Right buttons correct the telescope's Right Ascension (R.A.) axis while the Up and Down buttons the Declination Axis (Dec.). On the bottom of the hand controller there are two cables and a power inlet. A cable connects to the R.A. motor (R.A. cable) while the other is connects to the Dec. motor (Dec cable). The DC power inlet connects to a 12 volt DC power line cable.

NOTE: Sidereal Speed is, approximately, the speed that stars move in the night sky. It is a very, very low speed.

3. Assembly. Start by installing the motor gears as shown in Figure 1. Use the supplied screw driver to fix the gear to the motor axis as shown. Make sure the set screw fixes to the motor shaft slot. There is a motor gear for each motor. Remove the plastic protection from the telescope R.A. axis (Figure 2). Install one of the motors as shown (Figure 3) and use the longer socket screw with the supplied Allen wrench to fix the motor. The gear-with-clutch system shown in Figure 4 allows to use the mount's fine adjustment controls. Disassemble the gear-with-clutch so that you can fix the clutch shaft (#2 – Figure 4) to the R.A. axis (Figure 5). Reassemble the gear-with-clutch so it looks as Figure 6. Tighten the clutch thumbscrew (#5 – Figure 4) to use the motor. Release the thumbscrew to use mount's



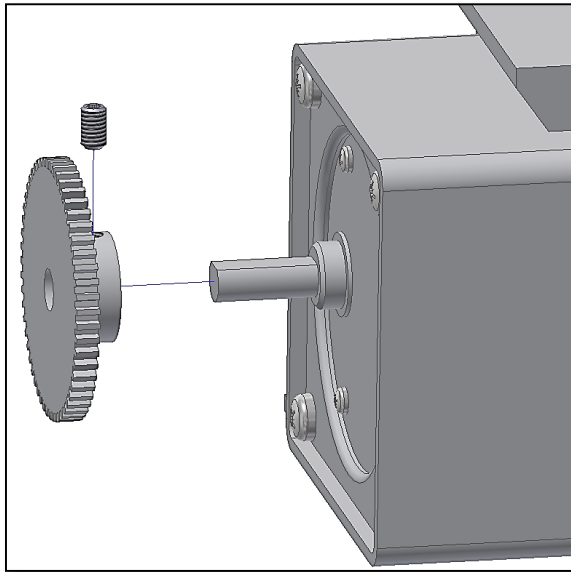


Figure 1. Install the motor gear.

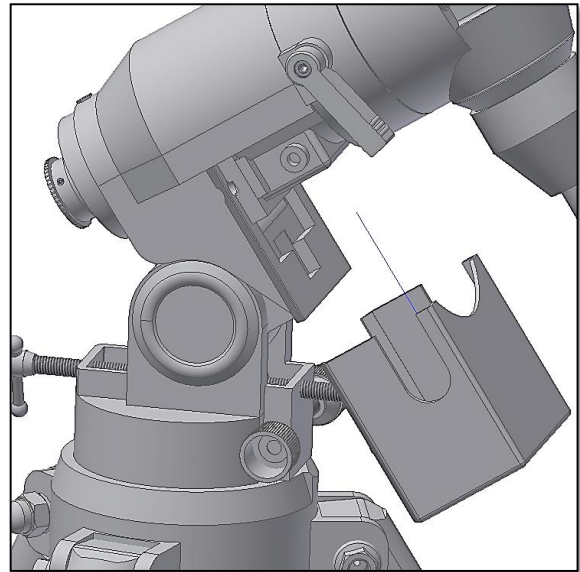


Figure 2. Remove the plastic protection.

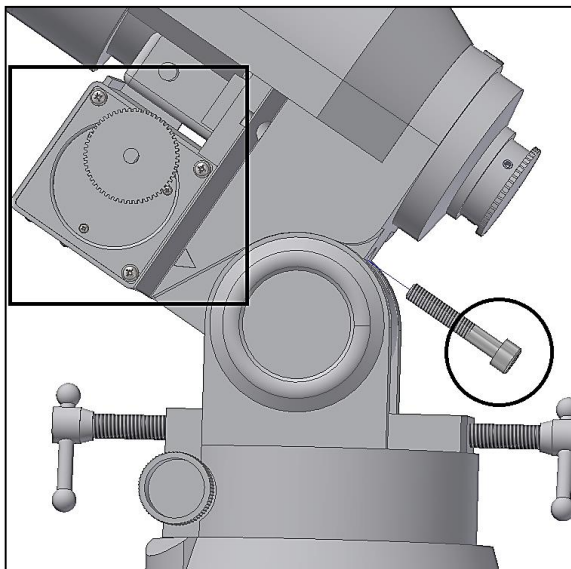


Figure 3. Place and fix the R.A. motor.

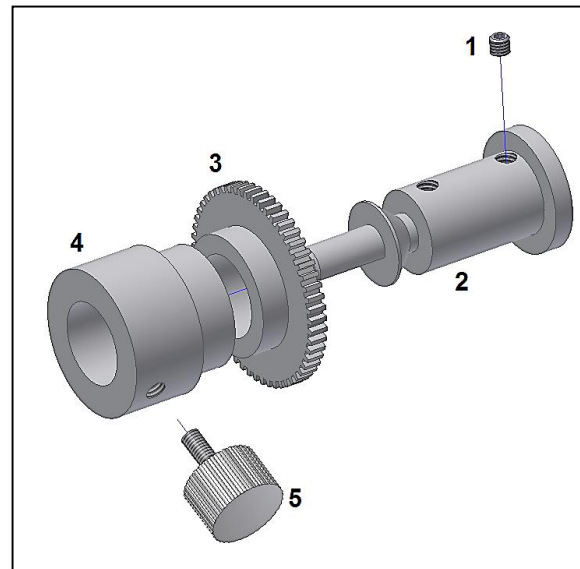


Figure 4. R.A. gear and clutch system.

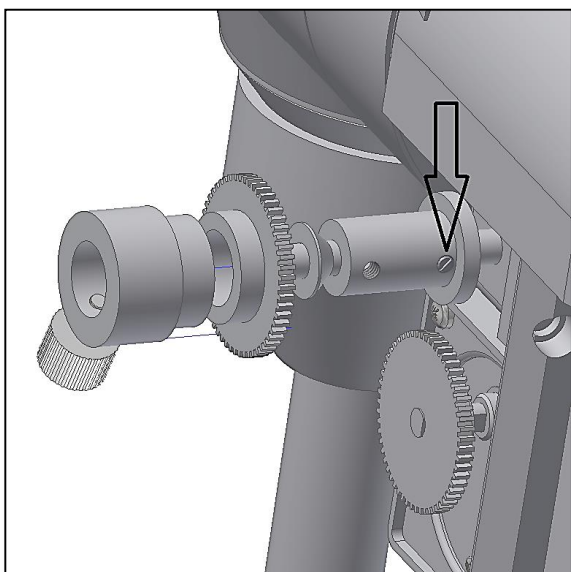


Figure 5. Tighten mount shaft.

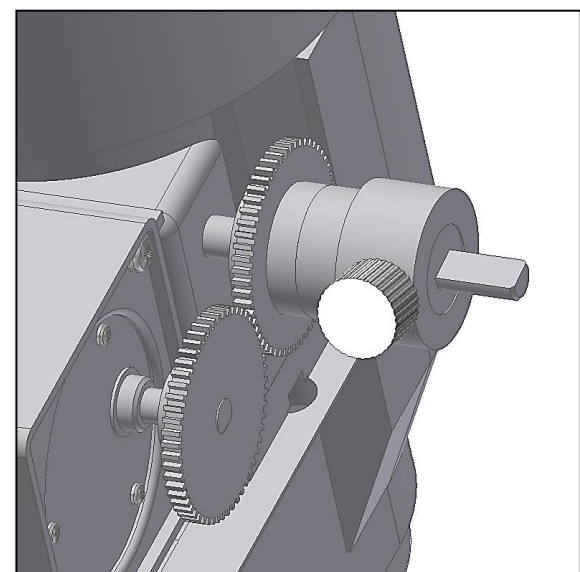


Figure 6. Assembly complete.

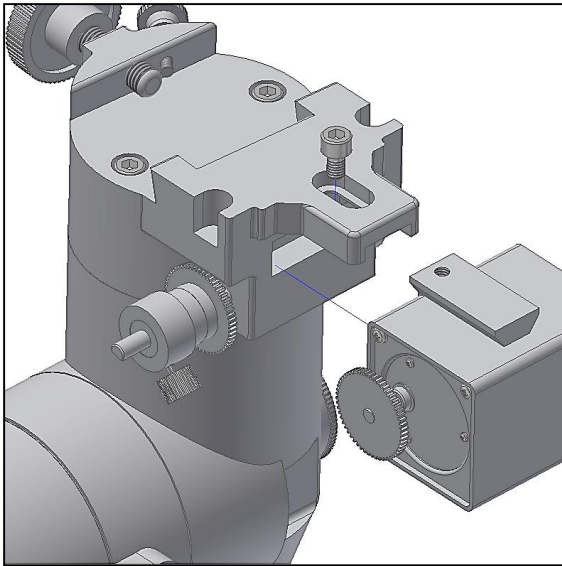


Figure 7. Install the gear and clutch system and Dec. motor.

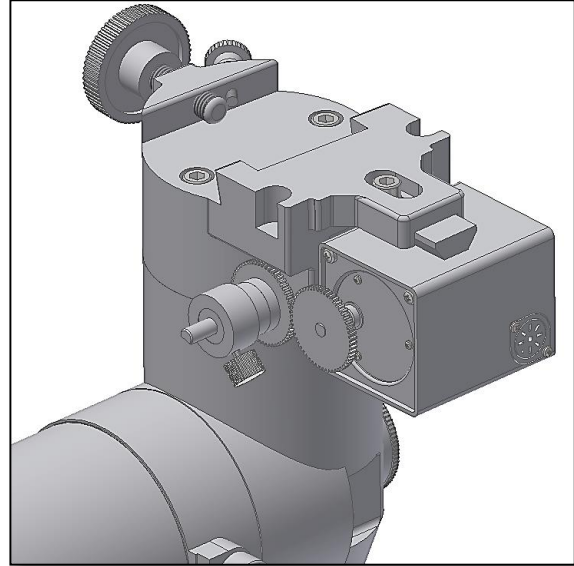


Figure 8. Both Gear and Clutch and Motor installed.

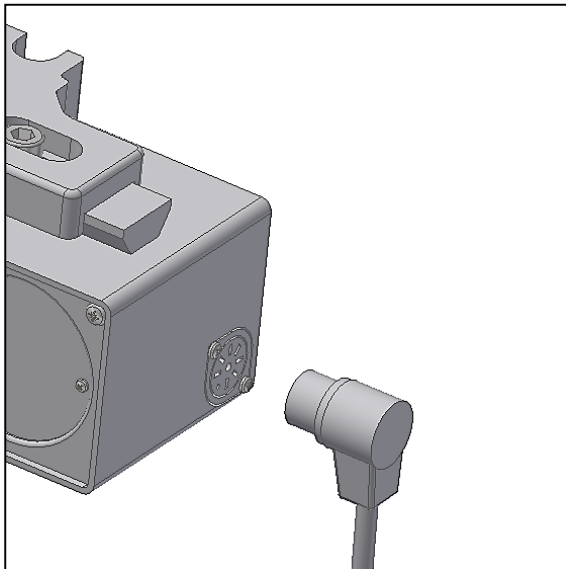


Figure 9. Connect cables to both motors.

Install gear-with-clutch system on the Dec axis (Figure 7). Use the supplied screw driver. Install the motor in the Dec Axis. Use the supplied small Hex socket screw and the Allen Wrench to fix it. After the install is complete it should look like Figure 8. Connect the cables to the motors (Figure 9). The R.A. should be connected to the R.A. cable (R.A. motor exit on the hand-controller), and the Dec should be connected to the Dec. cable (Dec. motor exit on the hand-controller). Select the correct Earth Hemisphere (in Europe – North Hemisphere) on the side selector as shown in figure 10. Select one of the three available speeds 1x, 8x and 32x from the Speed Mode Selector on the left side of the hand-controller. To centre an object in the field of view we recommend selecting first 32x and only then 8x Sidereal Speed for fine adjustments. Finally it is time to power up the hand-controller. Use the supplied Battery pack (batteries not included) – 8x LR20 batteries are required or as an alternative we recommend a 12v field power supply. These field batteries allow a longer operation time than batteries and can also be recharged.

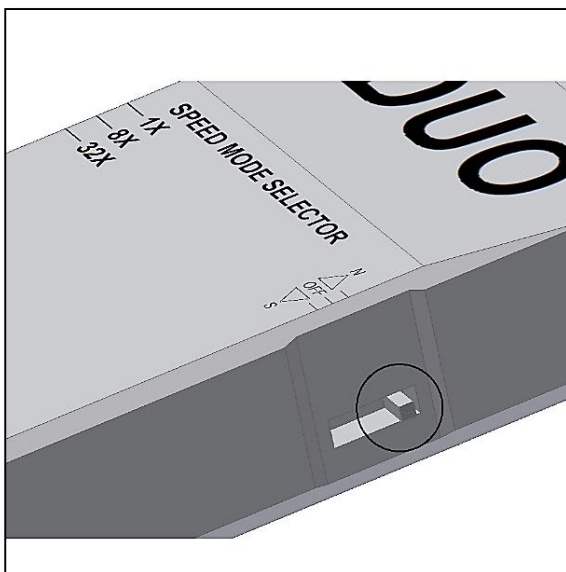


Figure 10. Select Earth's Hemisphere.

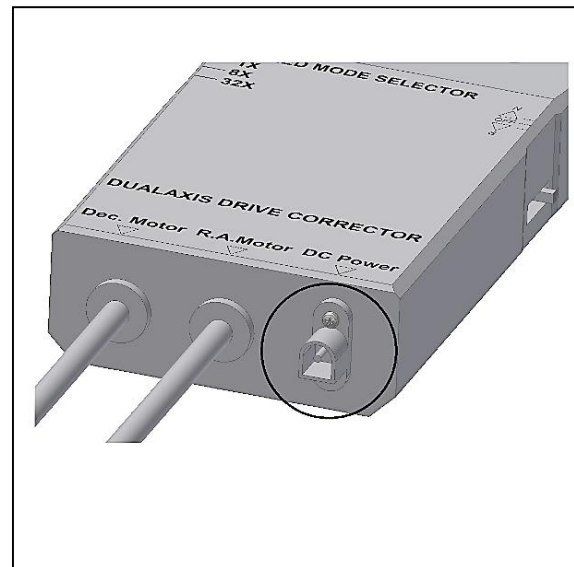


Figure 11. Power up the Hand-Controller.

Use only a 12 volt DC power supply. A higher voltage input will permanently damage the Hand-Controller!

It is important that the mount is balanced on both axis so that the wear on the motors and the gear is minimized. This will also makes operation less noisier and easier.

4. Troubleshooting and frequently asked questions.

Q: I don't see the mount moving with even at 32x!

R: This is normal, 32x Sidereal speed looks high when looking trough the eyepiece but quite slow when looking at the mount.

Q: When I press one of the Up-Down push buttons on the Hand-Controller the telescope moves in R.A.

R: Cables are connected to the wrong motor. Swap cables between R.A. and Dec. motors.

Q: Led does not light up, or the motors work for a few seconds and stop.

R: Replace batteries.

Q: Led lights up but nothing happens.

R: Check gear adjustment. If the gears are too tight the motor will not be able to rotate (Figure 12). Gears should work with a small backlash.

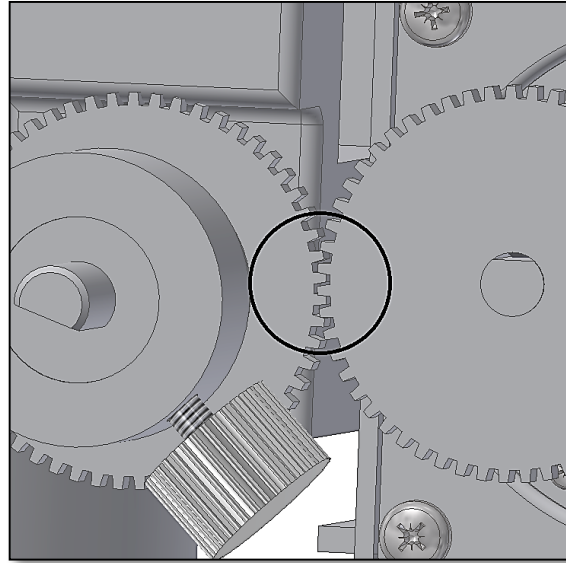


Figure 12. Adjust gears so there is a small backlash.



Questions? Visit our website www.astrosshop.eu and drop us a line* nimax GmbH Otto-Lilienthal-Str. 9 D-86899 Landsberg am Lech