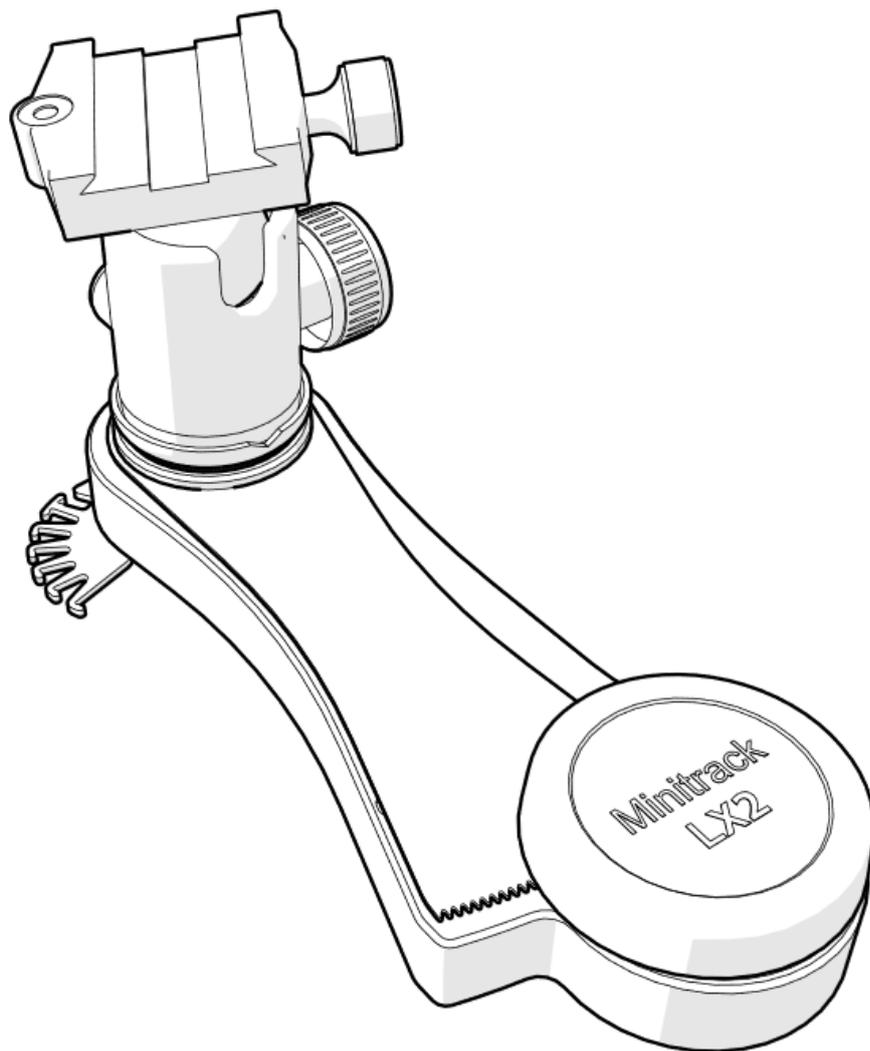


Instruction Manual

omegon



Omegon® MiniTrack LX2

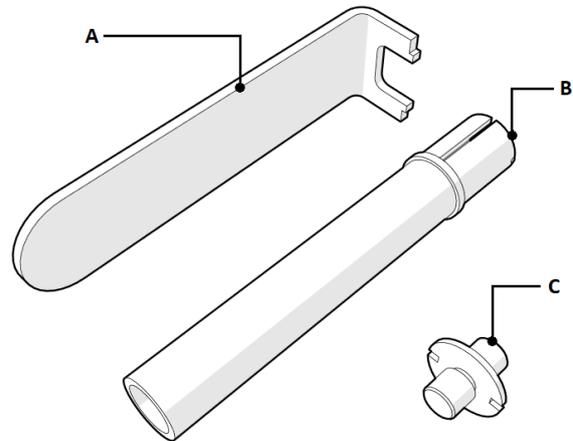
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The Omegon® MiniTrack LX2

Congratulations on the purchase of one of the new Omegon® MiniTrack LX2. This mechanical mount will give you hours of fun. It is the ideal companion for the beginner, intermediate and advanced amateur who is looking for a compact and carry-on mount for a DSLR camera. It's simple design and mechanical quality makes the MiniTrack LX2 one of the unique pieces of gear for wide field Astrophotography you will ever find in the market.

1. What's included?

- A- Adapter Key
- B- Polar finder
- C- ¼" to ¼" adapter

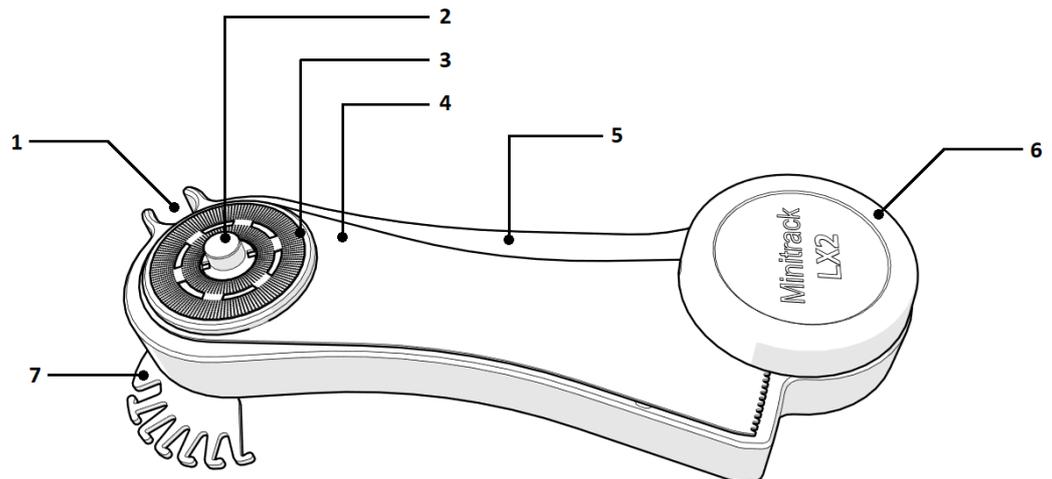


2. The different important Minitrack LX2 components that I need to know.

The Minitrack LX2 is ready to use out-of-the box. It is however important to identify each component.

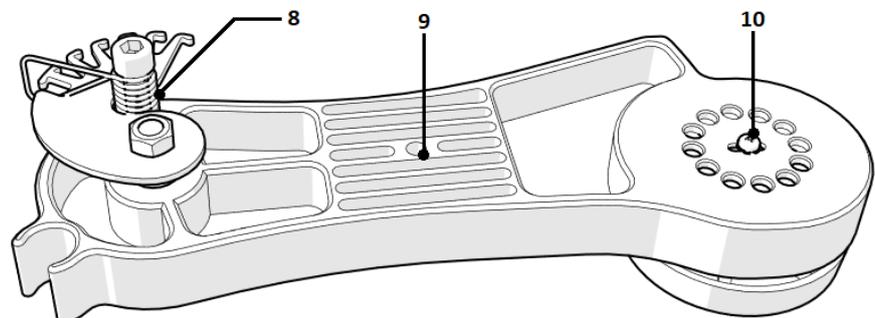
Side A components:

- 1- Polar finder holder;
- 2- Ball-head adapter;
- 3- Platform;
- 4- Arm;
- 5- Body;
- 6- Winding-knob;
- 7- Spring retainer.

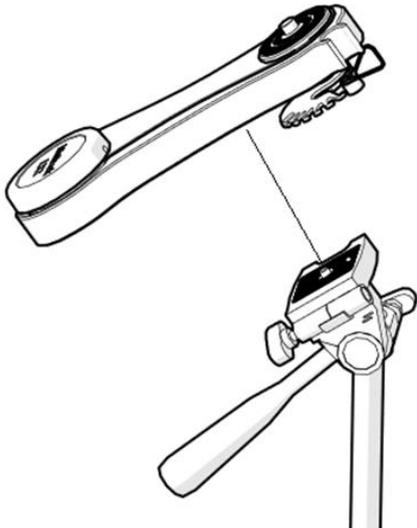


Side B components:

- 8- Spring;
- 9- ¼" thread for tripod;
- 10- Timer screw with washer;

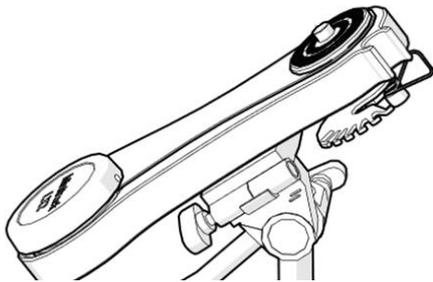


3. How does the Minitrack LX2 mount works? The Minitrack LX2 "follows" i.e. tracks the apparent movement of the night sky – please notice the two models covered in this instruction manual are designed to be used in the northern hemisphere. The sky "rotates" roughly around Polaris – the northern Star. So in order to have a successful tracking the mount must point to Polaris. This is called setting the mount in station. The mount must rest on a tripod that allows to a certain degree of inclination. Usually the inclination corresponds to the latitude of the location. Besides that, a ball head is required so that the installed camera can be easily pointed to the desired object. Then wind-up the built-in timer and you are ready to go!

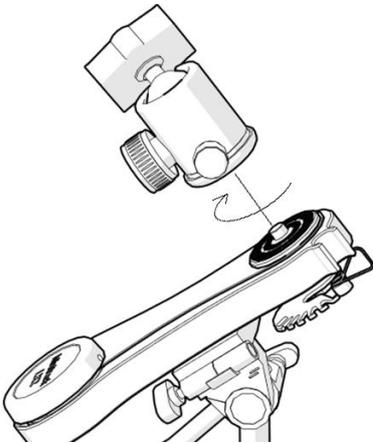


4. How to mount the Minitrack LX2?

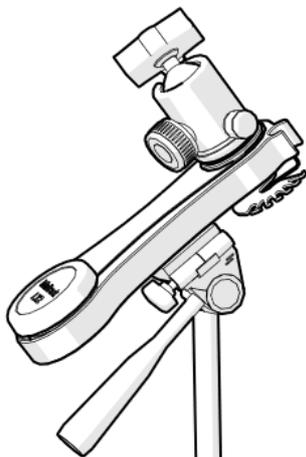
4.1. The Minitrack is compatible with any $\frac{1}{4}$ " tripod adapters (#9 Side B). Set the Minitrack LX2 to the tripod's adapter (not supplied) as shown. Make sure that the MiniTrack is set so the inclination adjustable is possible.



4.2. Make sure the Minitrack LX2 is parallel to the adapter base. This is important because the inclination has to be adjusted to set the mount in Station.



4.3. A ball-head is always required to operate the Minitrack. We offer a Minitrack LX2 version with ball-head with $\frac{3}{8}$ " thread. If you already have a ball-head and wish to use it, make sure it is $\frac{3}{8}$ ". If so, just thread it to ball-head adapter (#2 Side A). If the ball-head is threaded $\frac{1}{4}$ " then you need to remove the pre-installed ball-head adapter and replace it by the supplied adapter (C). Use the supplied adapter key (A).

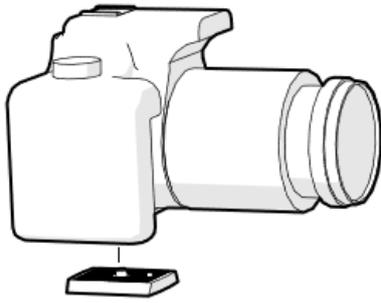


4.4. The ball-head must be secure. Make sure to tighten it well. All the weight from the camera will rest on the ball-head. Besides that, a well-fixed ball-head ensures that there will be no slippage during long-exposures. At this point, it is important that the ball-head knobs are also tight. This prevents movement when installing the camera.

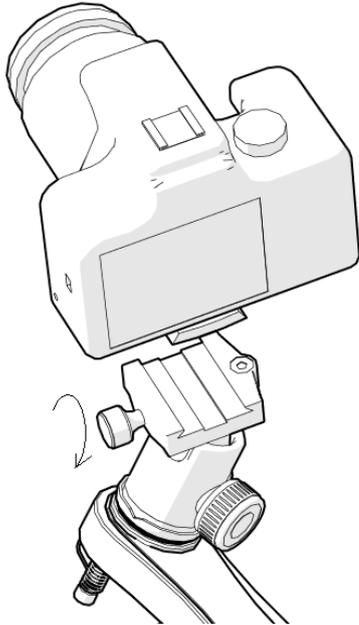
What is slippage?

Depending on the camera angle the setup's centre-of-mass may be against or for the ball-head's thread pitch. This can cause the ball head to slip. To avoid it the ball-head must be securely fixed. The built-in rubber mate helps reducing this problem.

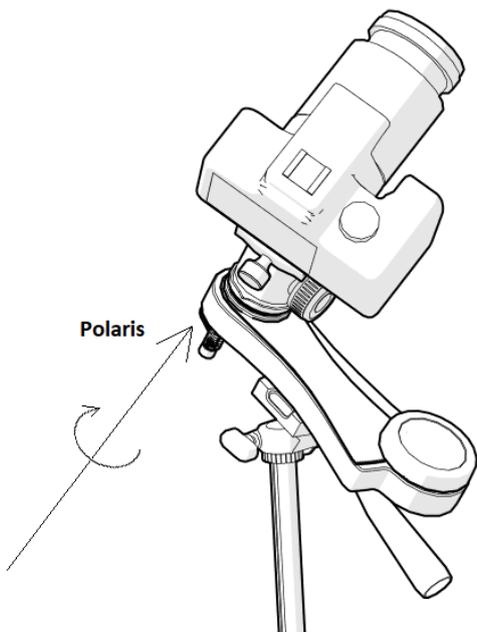
4.5. Install the camera adapter to the camera (only for version with supplied ball-head). Again, make sure the adapter is square to the camera base and well tighten.



4.6. Set the camera with the adapter to the ball-head. Make sure to tighten well the whole set. The ball-head has two knobs. One fixes the ball-head position (azimuth) while the other fixes the free-ball movement. The movement allows the user to point to any desired object. Make sure both are tight before installing the camera. Release the knobs - slightly - to allow pointing the camera to different directions.

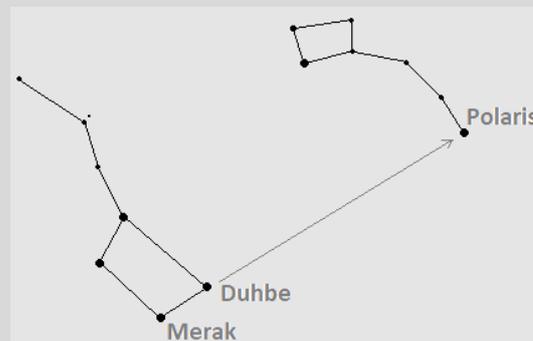


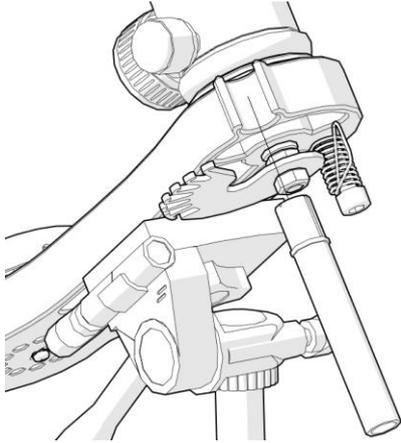
4.7. Point the mount to the Polaris. It is not important to be exactly aligned – a rough alignment is fine. Upon installing the supplied polar finder (B) we will look more accurately on how to have the star in the centre of the polar finder (B) field of view.



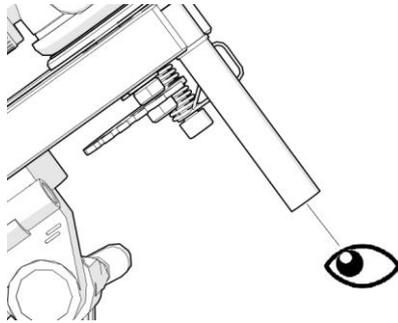
How to identify Polaris?

Polaris is not the brightest star on the sky but still easy to identify. Look north and try to find the Big Dipper (constellation). This is a very easy to recognise constellation. Polaris is about six times the distance and direction of two of its brightest stars – Merak and Duhbe.





4.7. To align the mount to Polaris with more precision slide the polar finder (B) to the polar finder holder (1 Side A).

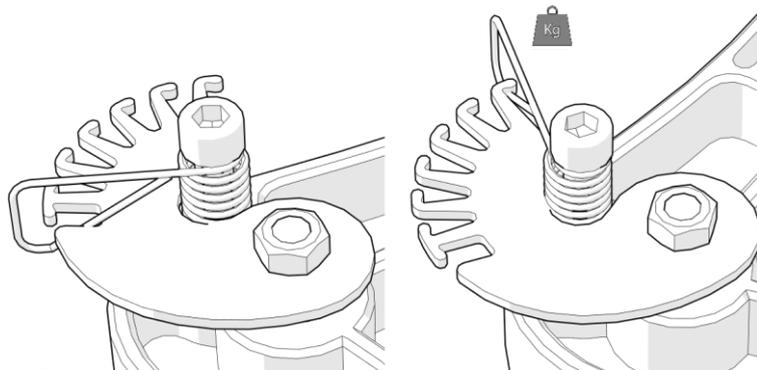


4.8. Peek through the polar finder (B) and centre Polaris in the centre of the field. Move the tripod fine-adjustment knobs to do so. You are not ready to use the Minitrack LX2. Please read the following section for more details about how to use the Minitrack LX2 on the East hemisphere.

5. Balancing the Minitrack LX2 on the East hemisphere. The built-in timer pushes the photo setup to track the night sky. If the setup's centre of mass is slightly off to the West side of the hemisphere, the generate arm moment helps the timer to track the objects, this is good. However, the opposite, i.e. if the setup is more off-balanced to east side may mean that the timer will have a hard time to push and track conveniently. For that reason the built-in spring system acts as a counterweight and gives an extra help to the timer by adding additional push.

How to determine if timer is not able to push the setup?

Listen to the timer ticking without any load. Compare that sound to when the setup is assembled. If there is a huge sound change – i.e. the timer is not as loud as it should be – the spring load system may be required.



5.1. Tensioning the spring.

For setups, slightly off-balance use the first positions as shown (image to the left). You can feel that the spring is not under a lot of tension. Use the spring at its highest tension only for heavy setups.

Please avoid unnecessary spring tension as this might change the timer clock and speed the tracking rate!

6. Calculating maximum tracking time. The Minitrack LX2 is designed to carry setups up to 2 kg and track during 60min. This is important to know because setups exceeding this limit may considerably reduce the tracking quality and total tracking time. Very important is the objective's focal length. Wide-field objectives (low focal length) allow for more exposure time. Rule of thumb one can calculate the tracking time without star trailing by using this formula:

$$\text{Time (min)} = 100 / \text{Objective focal length (mm)}$$

Objective focal length	Maximum recommended exposure
50mm	2 minutes
60mm	1min 40sec
100mm	1 min

6.1. Example.

Camera + objective = 1.8 kg; Objective's focal length 50mm.

This is within the specifications of the mount. We should expect to achieve $100 / 50\text{mm} = 2$ minutes of tracking without any problems.

What if the weight exceeds the carrying capacity or if we use more exposure time than the recommended?

Then we will see some star trailing becoming more evident. It may be necessary to try different exposure times to better judge which one better fit each setup.

7. Resources. For more information please refer to on-line content such as videos. There is also a very active facebook group (in Italian) about the Minitrack LX2 with hundreds of followers and many contributions. The inventor, Mr. Cristian Fattinnanzi is also a member of this group and would gladly give some information and tips on how to use this mount.

8. Features.

Carrying capacity: 2 kg

Balancing: using spring system (no counterweight)
accepts ball heads with 1/4" or 3/8" photo thread.

Ball-head weight: 300g

Minitrack LX2 weight: 430g

Total tracking time: 60 min

Polar finder: included

Hemisphere: northern