

# Astro Finder

## User Manual



Valid for:

Black Forest Motion Astro Finder

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Revision:

2

Dear customer,

Thank you for purchasing the Astro Finder from Black Forest Motion. As our customer, you receive our highest attention and we are always there for you if you have questions or suggestions to our products.

In order to make it as easy as possible for you to start using our product, please read this user manual carefully and familiarize yourself with its safe and efficient operation.

Keep this user manual in a safe place so that it can be accessed at any time if necessary.

The current user manual is also always available for download from our website:

<https://www.blackforestmotion.com/support>

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## 1. Usage of this Manual

This manual serves as a help and reference document for the end user of the Black Forest Motion Astro Finder. Read this manual thoroughly to familiarize yourself with the function of the device.

In this manual, different info fields are used to clarify important points for the reader. These are listed below.

### Important Note



This is an important hint. Please observe it to avoid unexpected behavior of the device.

### Tip



This is a useful tip that will be helpful when using the device.

## 2. Preface

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### 3. Introduction

Our Astro Finder serves as an aid for aligning the NT motor axis for the astro function of the PINE Controller.

The Astro mode of the PINE Controller allows to create long time exposures of the night sky with point-shaped stars. Thus, exposures over several minutes are possible without problems - without "blurred" stars. To achieve this effect, the PINE Controller compensates the rotation of the earth axis by a very slow counter rotation of the NT motor axis. To achieve the desired effect, the NT motor must be aligned accordingly. This manual explains the procedure.

### 4. Operating Elements

**Turning wheel position indicator:**

The small white dot indicates the current position of the turning wheel.

**Turning wheel for adjusting the light spot:**

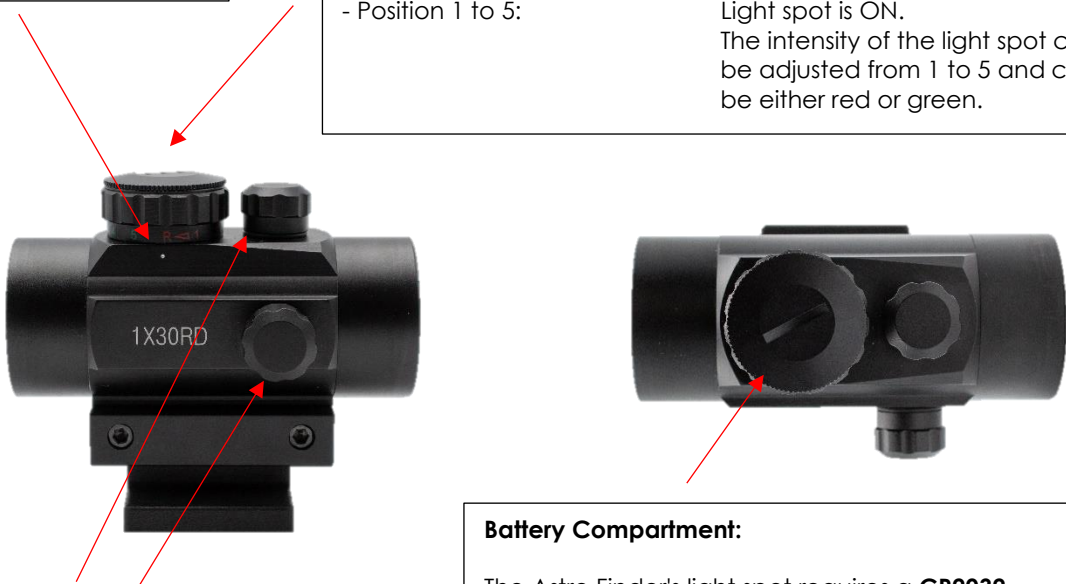
- Position G and Position R: Light spot is OFF. Put the turning wheel in one of those positions when not using the astro finder.
- Position 1 to 5: Light spot is ON. The intensity of the light spot can be adjusted from 1 to 5 and can be either red or green.

**Battery Compartment:**

The Astro Finder's light spot requires a **CR2032 battery** for operation. This battery is located inside the rotating wheel. The battery compartment can be opened with a coin or screwdriver. Secure the dial by hand while unscrewing the battery cap, otherwise the dial will rotate.

If you replace the battery, make sure that the positive pole of the battery is at the top.

These wheels are neglectable for the operation of the astro finder and should remain untouched.



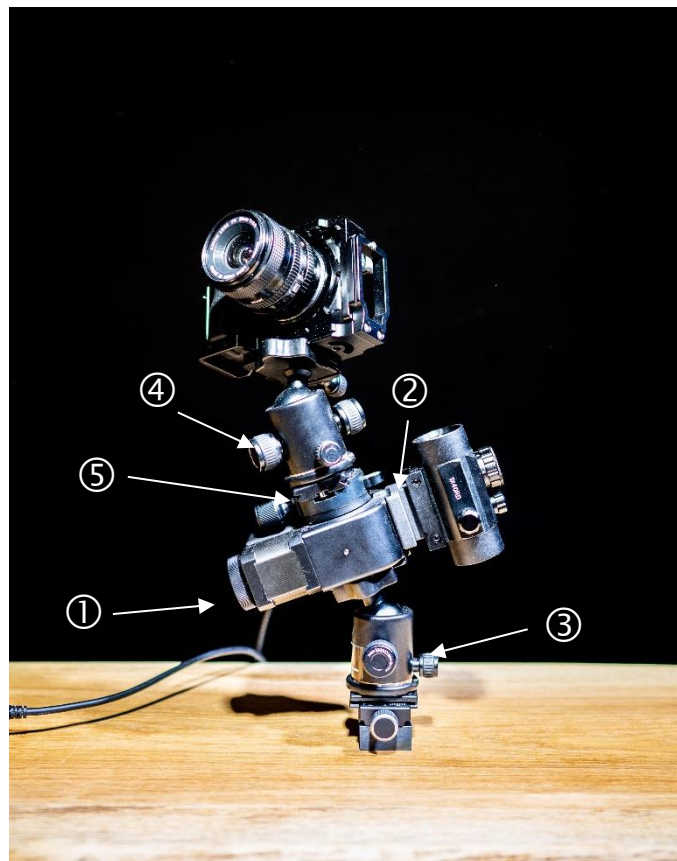
## 5. Setup

The Astro Finder is specially designed and optimized for use with an NT motor axis ①. As shown in the picture below, the Astro Finder can be attached directly to the lateral (narrow) side of the NT motor axle via the attached Arca-Swiss profile ②. The built-in magnets fix the Astro Finder to the motor axis automatically and without screws.

Our latest version of the Astro Finder has an Arca-Swiss clamp without magnets. The attachment is done by tightening the screw wheel on the clamp.

To make the later alignment of the setup as easy as possible, we recommend using a ball head ③ (with Arca-Swiss compatible profile) between NT motor axis and tripod.

We also recommend the use of an additional ball head ④ between NT motor axis and the camera. To fix the ball head to the NT axis, a simple Arca mounting plate ⑤ with a 1/4" screw can be used as an adapter. These mounting plates should be included with every Arca-Swiss compatible ball head.

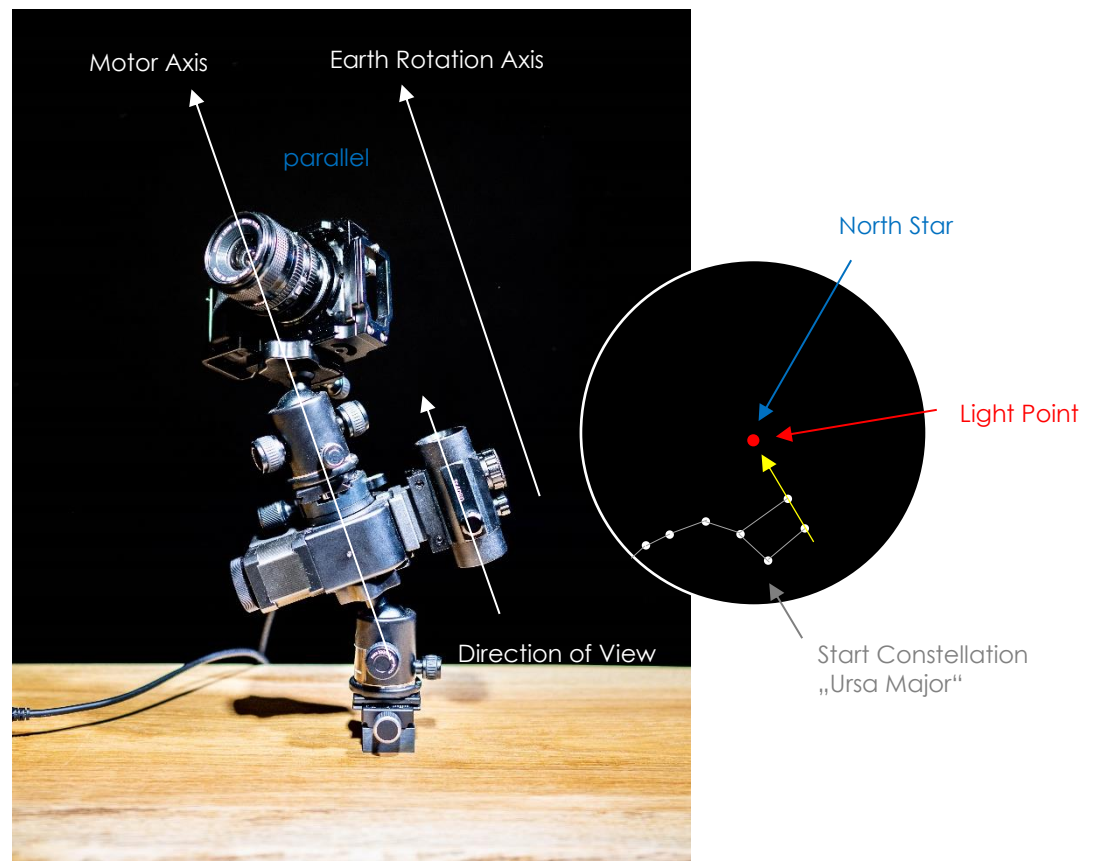


## 6. Alignment

Once everything is set up as described in point 5, the motor axis must be aligned so that the motor rotation axis is parallel to the earth rotation axis. The picture below shows the alignment of the motor axis in relation to the earth rotation axis.

Adjust the lower ball head so that you can easily adjust the inclination of the entire assembly. However, make sure that the ball head is not too loosely adjusted, otherwise the assembly can easily tip over.

Look through the Astro Finder in the marked line of sight (the large rotating wheel must point upwards). Make sure that the viewfinder's illuminated dot is set to ON by the rotary wheel. Then align the entire setup so that the light point of the viewfinder points exactly to the North Star. The star constellation of Ursa Major is very helpful for finding the North Star as shown in the graphic below. An Astro Smartphone app can also be helpful for finding the North Star. After the alignment you can fix the setup by tightening the rotating wheels of the lower ball head.







The use of the Astro Finder requires an unrestricted view of the North Star. This requires a clear and cloudless sky.

Furthermore, the Astro Finder is only suitable for locations that offer a view of the North Star. This is only possible in the northern hemisphere. Therefore the use of the Astro Finder is not suitable for the southern hemisphere.

## 7. Connecting to the Motion Controller & Operation

Use the motor cables available from us (Hirose 6-pin male to Hirose 4-pin female) to connect the motor unit to a PINE controller.

For information on how to operate the PINE Controller and information on Astro Mode, please refer to our separate PINE manual.



After alignment, first take a test image by activating the tracking in the app and then make a long exposure of several minutes.

In the test image you should be able to see relatively quickly whether the tracking was successful and whether the stars are point-shaped. In most cases you need a few alignment attempts until you get satisfactory results. Often you have simply set the direction of rotation of the motor axis inverted.



Do not adjust the orientation of the setup after successful alignment until you have completed your exposures.

**The orientation of the camera can be changed as desired after successful alignment of the motor axis.** For this purpose, the position of the upper ball head can be changed. You can also use the app to move the motor axis as desired.

## 8. Troubleshooting and FAQs

Even with optimal alignment, I cannot achieve point-like stars.

Check that the correct motor profile is selected in the app. For one of the NT axes the profile "BFM NT Head" must be selected.

Can I adjust the orientation of the camera?

Yes - Provided that the motor unit is not moved after successful alignment. As long as the motor unit is not moved, the camera can be aligned as desired. Use the ball head mounted on top. Additionally, the motor unit can be rotated via the app.



**Black Forest Motion**