

READ BEFORE USE

Mesu 200 MKII setup guide



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FOREWORD

Congratulations on the purchase of your Mesu-Mount 200.

The Mesu-Mount 200 is an equatorial mount with some special features.

1. A backlash-free drive mechanism that is very stiff and tracks extreme smoothly and accurately. These properties are especially important for astrophotography but they are desirable for other applications as well.
2. A new design polar adjustment that makes the complete setup more ridged without moving parts you don't need. The polar adjustment and the locking of the head is done in the same operation. This prevents movement after the adjustment is done and improves the polar adjustment.
3. Its very simple and rugged design enhances the reliability and the ease of use in darkness.
4. Its 17kg upper head has a huge carrying capacity so it will be possible to use heavy telescopes with this mount. The accurate guiding of this mount makes it possible to get full use of the resolution of big telescopes.
5. With a bended knee setup the Mesu-200 MKII is a flip-less mount. The mount can track all night long without a meridian flip. When used on a tripod or pier that can hit the telescope, Sitech.Exe can be used to configure a meridian flip. After passing the meridian it will still be possible to continue tracking an object until it reached the programmed meridian limits. In a mobile setup the last configuration can be practical and for a permanent setup some prefer the flip-less variant.
6. The SiTech Servo I controller included with the mount is an industry leading servo controlled system manufactured by Sidereal Technology that comes with **powerful** Sitech.Exe software.
7. All cables used on your instrument can be lead trough the 80mm holes in the mount that prevents cable snacking. It's not restricted to the use of any connector type and there is place enough for all thinkable applications.

In short, this is a purchase that you will enjoy for many years to come.

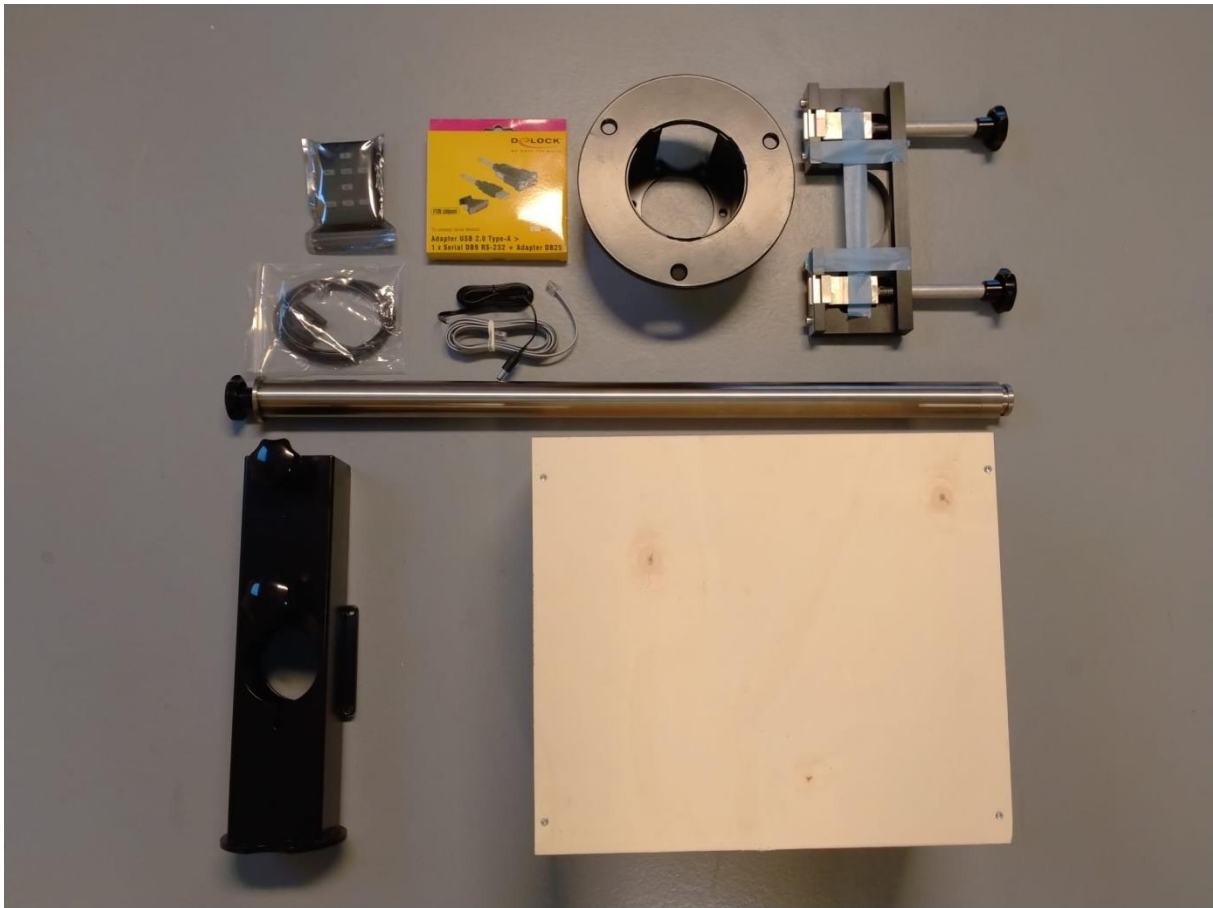
1. Installation

Your Mesu 200 MKII has been disassembled for shipment, and will need to be put together before operation is possible. The only tool necessary is a **metric Allen key set**, and a Torx bit to unscrew the crate. It is advised to construct your Mesu-mount on a clean sturdy surface like a workbench or a swept floor. Be careful when handling the right ascension and declination housings, as these are the most delicate parts of the mount. When lifting these parts, **DO NOT GRAB THE HOUSINGS AT THE MOTOR/ENCODERS**. Instead, hold them at the sides of the housing with both hands and carefully place them on your work surface **with the protruding motor/encoder units faced up**. Following this document in chronological order will guarantee a quick and trouble free setup.

When assembling your mount, do not place items on the motor/encoder unit protruding from the housing. Doing so may cause damage and decalibration.

1.1. Unpacking

Your Mesu-mount has been shipped to you in different packages. Depending on your order, your package may include counter weights, bespoke wedges or a tripod. All shipments include the following items:

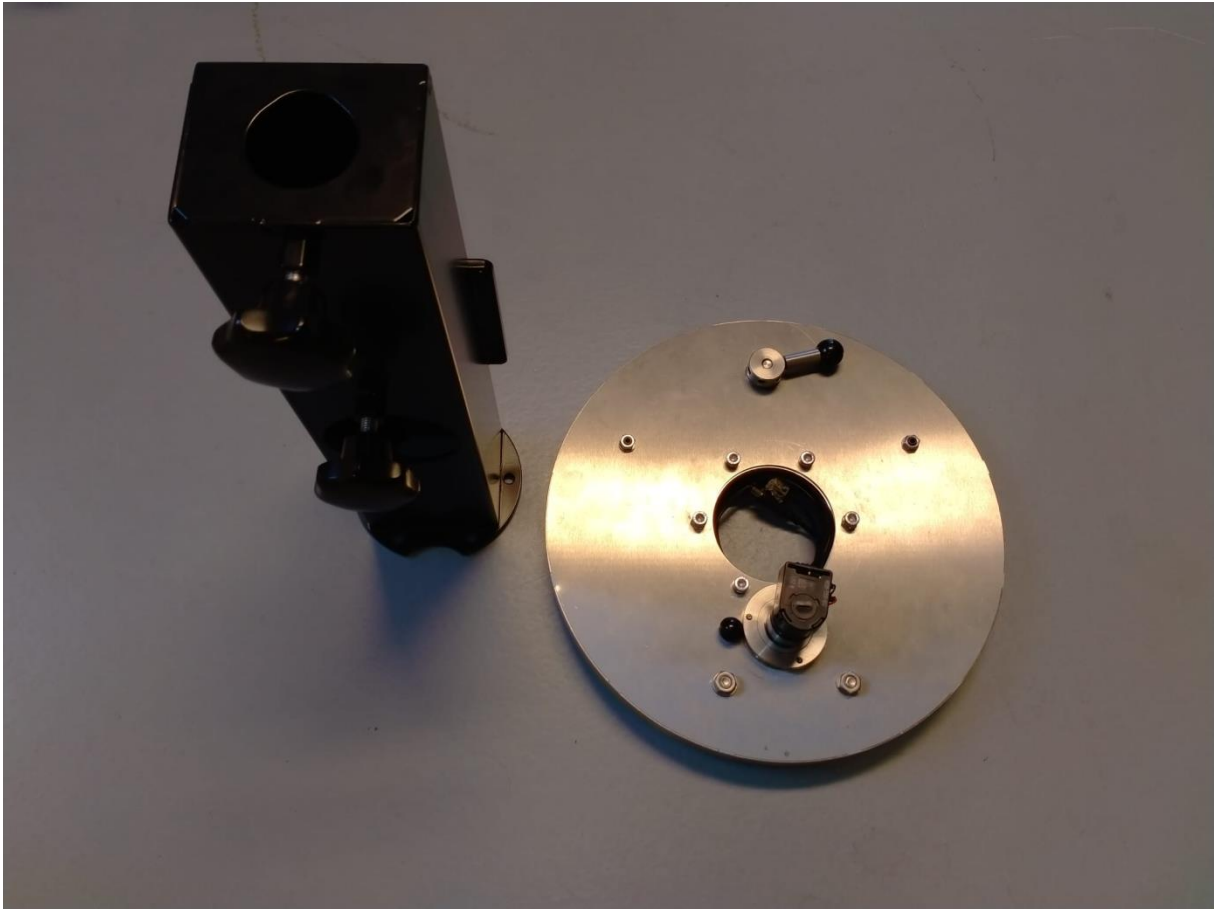


The basic parts to set up your Mesu mount. (from top left to Bottom right, reading order): SiTech handpad, serial to USB adapter, Base plate, Saddle plate, Connection and power cables for Sitech controller, Counterweight bar, Counterweight box, Crate containing RA and DEC drive units.

Unscrew the wooden crate in which the RA and DEC drive units are located. Carefully remove them from the polystyrene **without grabbing the motor unit (the bit that's sticking out)** and place them on your working surface.

1.2. Assembling the DEC housing

Take the DEC drive unit (the unit which **does not** contain the Sitech controller) and the counterweight bar box:



Six Allen bolts have been put in the centre of the DEC unit, two of which have an extra nut and are tightened. Unscrew the six centre bolts and remove the two extra nuts. **These two nuts were only for transportation, and are not necessary for constructing the mount.** Place the counterweight box on the DEC unit and screw the six Allen bolts back. Make sure no cables are wedged in between the DEC unit and the counterweight bar box.

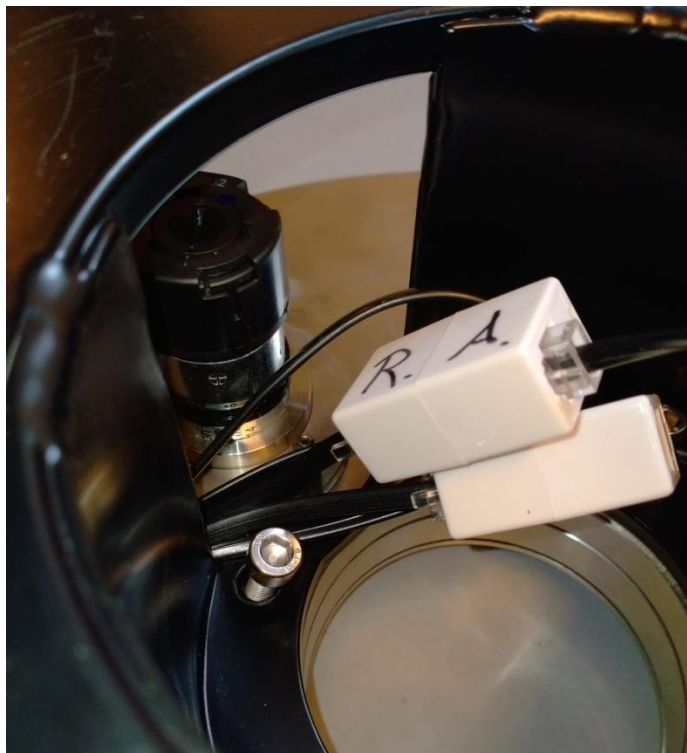
Do not tighten the Allen bolts without mounting counterweight bar box. Doing so may cause damage.

1.3. Assembling the RA unit

Next, the RA unit (with the Sitech controller attached) has to be assembled to the base plate:



As with the DEC unit, six Allen bolts of which two have nuts are screwed in the centre. Unscrew these, dispose of the two bolts, place the base plate on the DEC unit and screw the Allen bolts back in. When doing this, make sure the protruding cables are not wedged in between the unit and the base plate, but are sticking through the specially designed hole:



1.4. Assembling the RA and DEC

Flip over the RA unit so it's resting on the base plate. You can see four Allan bolts protruding:

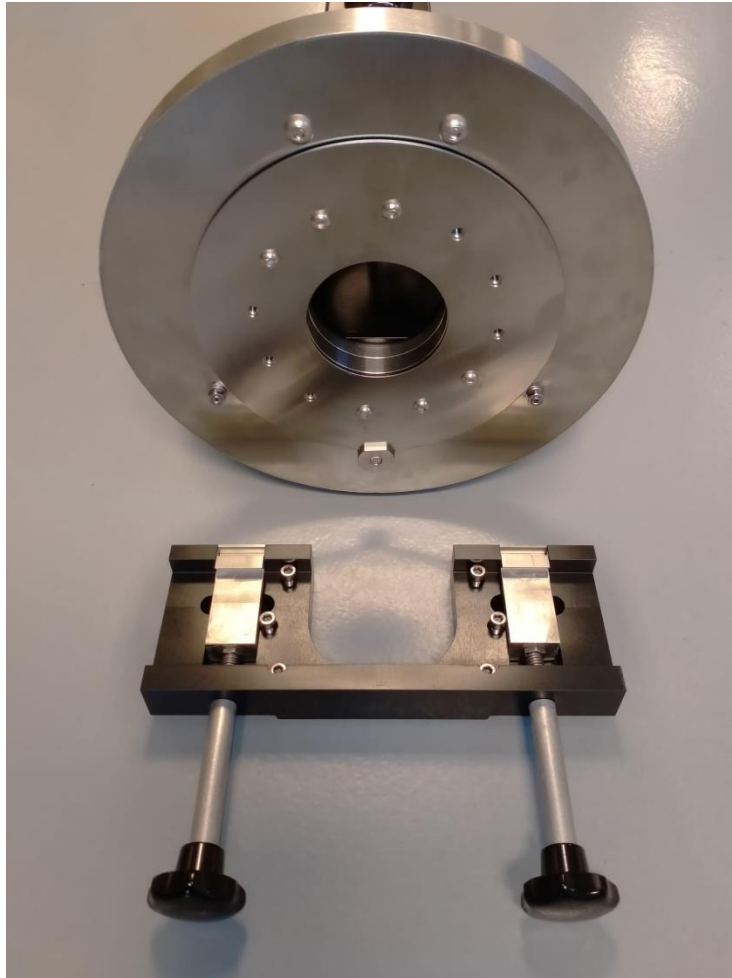


Unscrew these bolts, and place the counterweight bar box on the DEC unit. Using these Allen bolts, secure the counterweight bar box to the DEC unit.

Do not tighten the Allen bolts without mounting counterweight bar box. Doing so may cause irreversible damage.

1.5. Saddle plate installation

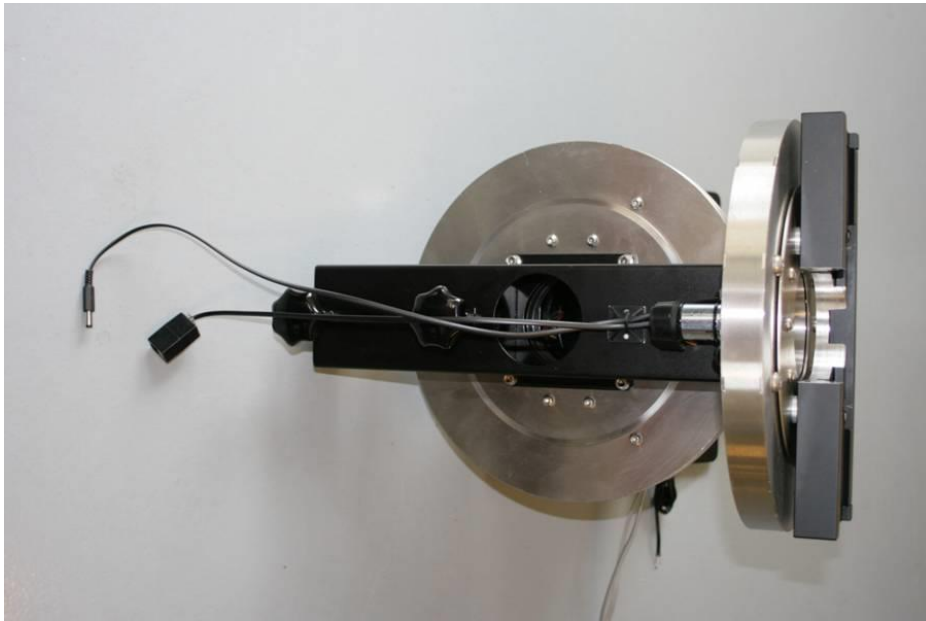
If a Mesu made saddle plate is present in your package, it can be found with tape securing the Allen bolts necessary to mount it to the RA unit.



Remove the tape and bolts, and mount the saddle plate to the RA unit using the six remaining holes.

2. Connecting the cables

After this, the DEC motor needs to be connected to the Sitech controller. Take the DEC motor and DEC encoder cable as shown in the following photo, and feed them through the centre hole of the mount.



Find the rectangular connector plug which has DEC written on it, and connect the DEC encoder cable. Following the other wires to the Sitech controller, connect the DEC motor cable to the remaining Sitech controller port.

On the Sitech controller, the encoder plug is already connected to the encoder port. DO NOT PUT THE ENCODER PLUG INTO THE TELESCOPE ENCODER SOCKET. This will permanently destroy the encoder.

On the other side of the controller the hand pad, the serial cable and the 12V DC can be connected as shown in the picture:



The 12V cable needs to be connected with the dotted line to the + and the other to the – 12V DC. Voltage needs to be within 12 and 18 V DC. 2 Amp is more than enough for moving both motors at the same time with the highest speed. A good size battery would for example be the battery of a motorcycle.

The serial cable can be connected to the USB to serial converter. When you plug it in your computer the drivers will automatically be installed.

3. Software installation

The Mesu-200 MKII has the same software setup as the old Mesu-200. Calibration of the encoders and further settings have already been carried out at Mesu Optics.

3.1. SiTechExe and ASCOM

The SiTechExe software has to be installed on your computer. For the latest version you can use the Sidereal Technology website:

<http://www.siderealtechnology.com/>

<https://ascom-standards.org/Downloads/Index.htm>

You will also need to download the SiTechExe compatible version of ASCOM, found by following the link above. When installing SiTechExe, you will also get ServoConfig. This program will be needed when you want to change settings in your controller like speed or other servo relate things, **but has already been setup for you at Mesu-Optics**. For more information about ServoConfig you can follow the following link:

<http://siderealtechnology.com/ServoConfig.pdf>

3.2. Cartes du Ciel

A very competent planetarium program you can use with your Mesu-200 MKII is Cartes du Ciel. This can be downloaded with the following link:

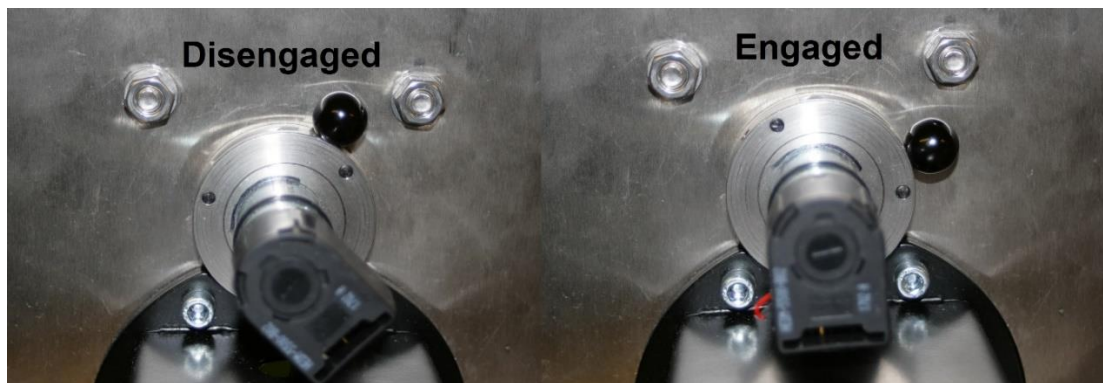
<http://sourceforge.net/projects/skychart>

4. Using the mount

There are a few things that need to be taken into account when using the Mesu-200 MKII, to prevent damaging or misuse.

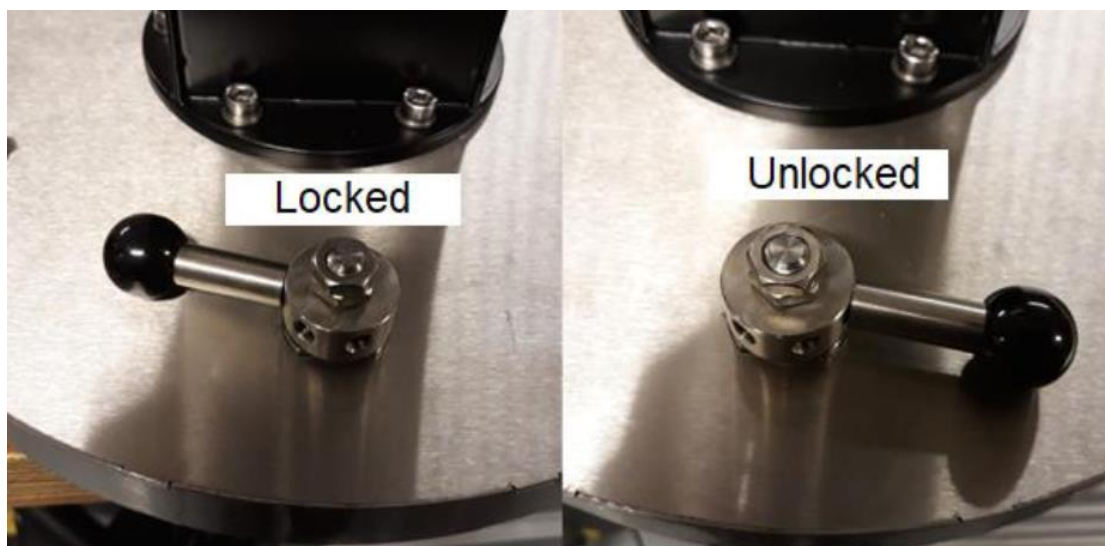
4.1. (dis)engaging the motors and using the disk brakes

A new feature on the Mesu-200 MKII that you are able to couple and decouple the servo motors, to make balancing your telescope easier. The two motors can be engaged and disengaged by operating the black handle as shown in the following picture:



DO NOT USE THE MOTOR/ENCODER ITSELF TO ENGAGE/DISENGAGE THE MOTORS

The motors and encoders are the most sensitive part of your Mesu Mount. Using it as a handle or to move the motor can cause serious damage. Instead, use the black knob to engage and disengage the motor.

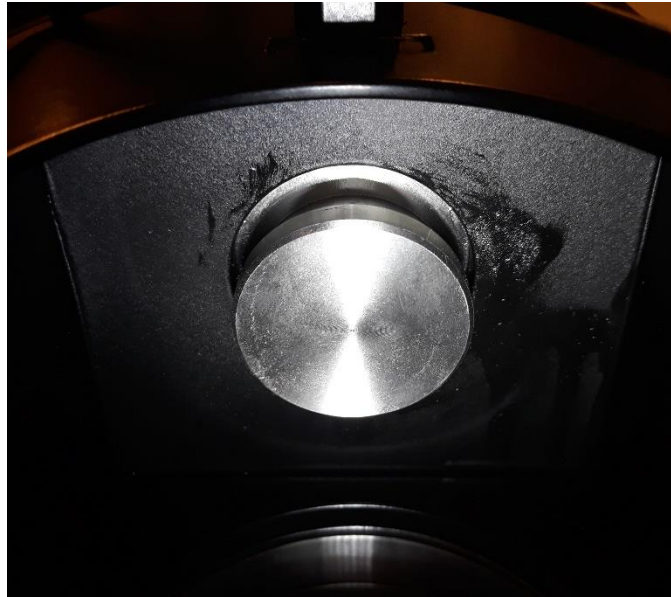


The brakes at the other side of the housings can be unlocked by turning them counter clockwise. When you rotate the Dec. brake as far as possible it can't walk back when using the mount. In that position the two axels can be rotated for balancing your setup. You can start by locking the dec and balance the RA or in another way you prefer.

Do not drive the mount with the motors engaged when it's not balanced or when the brake is engaged. When your setup is balanced you can put the motors in drive position.

4.2. Mounting the counterweight bar

When mounting the counterweight bar, it is important to put it in all the way, so that the notch hooks into the second plate of the counterweight bar hole:



2.3 Balancing the setup.

Your setup needs to be balanced as good as possible but at least within 10 Nm. This can be done with the brake fully open and the motors disengaged.

Much is said about balancing a friction driven mount some questions and answers can clear up things:

- Does it slip? Yes it can slip, above 10Nm. under 10Nm it is stiffer and smoother than all other telescope drive systems on the market.
- Will it damage when it slips? No not the Mesu-Mounts.
- Is balancing critical or difficult? No, it only needs to be within 10 Nm.

After balancing the motors can be engaged and the mount can be slewed around with the hand pad to any point you like.

A final note

This is the end of the Mesu Mount 200 MKII setup guide. If everything has gone to plan you will now have a quality engineered piece of equipment that will last you a lifetime. Any updates on this setup guide or the Mesu Mounts can be found on the website: www.mesu-optics.nl

For any further questions, you can contact Mesu Optics via e-mail: info@mesu-optics.nl We wish you the best with our product and many clear nights.